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**INTERNATIONAL FISHERIES MANAGEMENT:
A COMPARATIVE ANALYSIS OF LEGAL APPROACHES TO
MANAGEMENT IN THE CONTEXT OF POLAR FISHERIES REGIMES**

by

Stuart B. Kaye

Submitted in partial fulfillment of the requirements
for the degree of Doctor in the Science of Law

at

Dalhousie University
Halifax, Nova Scotia
May, 1999

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The undersigned hereby certify that they have read and recommend to the Faculty of Graduate Studies for acceptance a thesis entitled "International Fisheries Management: A Comparative Analysis of Legal Approaches to Management in the Context of Polar Fisheries Regimes"

by Stuart Bruce Kaye

in partial fulfillment of the requirements for the degree of Doctor in the Science of Law.

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Eternal Examiner
Research Supervisor
Examining Committee



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AUTHOR: STUART BRUCE KAYE

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ABSTRACT

This thesis examines the management of marine living resources in international law. The thesis considers the development of the two principal approaches to fisheries management. The first approach is based upon maximising the yield of particular stocks, and is reflected in the content of the 1982 United Nations Convention on the Law of the Sea. It has evolved out of fisheries management theory developed since the 1950s, and focuses upon extracting the maximum harvest of a particular stock while still permitting that stock's biological regeneration. The second approach uses the precautionary principle, and may include management directed at the entire ecosystem. This approach has derived from international environmental law over the last twenty years, and based upon risk assessment, where if an action is proposed, the onus is placed on the proponent to demonstrate that the risk of damage falls within established parameters. The thesis explores the juridical bases of these approaches and charts their development. It then seeks to compare the approaches on a number of criteria through the media of two international conventions, operating in analogous polar environments. The first of these arrangements is the Bering Sea "Doughnut Hole" Convention, designed to preserve the pollock stock in the central area of the Bering Sea, and the second is the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), designed to manage all the elements of the marine ecosystem of the Southern Ocean. The thesis concludes by rationalising the comparative analysis, and noting the difficulties common to both approaches in the area of compliance. It then proposes a number of mechanisms by which the management of stocks could be improved.

TO MY FAMILY

CONTENTS

PART ONE: INTRODUCTION

Chapter One

BACKGROUND AND THEORETICAL APPROACHES 7

Comparing the Poles 7

Bases of Comparison 16

State Satisfaction - International Relations 17

Regime Theory 25

Epistemic Communities 34

Stakeholder Satisfaction - Exploitation 42

Stakeholder Satisfaction - Environmental Protection 44

PART TWO: INTERNATIONAL LAW AND MODES OF MARINE LIVING RESOURCE MANAGEMENT

Chapter Two

LIVING RESOURCE MANAGEMENT:

THE MAXIMUM YIELD MODEL 51

INTERNATIONAL LAW AND FISHERIES

MANAGEMENT TO UNCLOS III 51

Background: Fisheries Management prior to 1945 51

Maximum Sustainable Yield and Maximum Economic Yield 60

International Law and Management Theory 71

1945 to UNCLOS I 71

UNCLOS I and the Geneva High Seas Fisheries Convention 78

International Cooperation and the Enclosure of the Seas 88

1982 LAW OF THE SEA CONVENTION 102

Territorial Sea and Internal Waters 104

Exclusive Economic Zone 106

UNCLOS III 106

Provisions of the Law of the Sea Convention 112

Duties of Cooperation 124

Highly Migratory Species 138

Marine Mammals 143

Anadromous Stocks 149

Catadromous Stocks 155

Sedentary Species 158

High Seas	158
Straddling Stocks	173
Chapter Three	
LIVING RESOURCE MANAGEMENT:	
THE PRECAUTIONARY MODEL	180
THE PRECAUTIONARY PRINCIPLE	185
Definition	185
Precaution in International Environmental Law	191
Status of Precaution at International Law	199
THE EMERGENCE OF THE PRECAUTIONARY	
APPROACH IN FISHERIES MANAGEMENT	204
Introduction	204
Challenges to Traditional Management	204
UNCED	214
<i>Background</i>	214
<i>Agenda 21</i>	218
FAO	223
<i>1984 World Fisheries Strategy</i>	223
<i>Change in Direction: Declaration of Cancun</i>	227
<i>High Seas Fisheries Compliance Agreement</i>	232
<i>The Emergence of Precaution</i>	236
<i>The Code of Conduct for Responsible Fisheries</i>	240
UN Conference on Straddling and Highly	
Migratory Fish Stocks	250
<i>Background</i>	250
<i>Precaution and the Straddling and</i>	
<i>Highly Migratory Stocks Agreement</i>	253
<i>Cooperative Management Measures</i>	261
<i>Enforcement</i>	272
<i>Other Provisions</i>	278
Customary International Law and the Precautionary	
Approach to Fisheries Management	279
ECOSYSTEM MANAGEMENT	287
Introduction	287
Ecosystem Management as a Concept	290
Ecosystem Management and Precaution	293
International Law and Ecosystem Management	295
UNCED	295
FAO	300
<i>Straddling and Highly Migratory Stocks Agreement</i>	302

Ecosystem Management as Custom	304
CO-MANAGEMENT	307
Introduction	307
Definition	313
Co-Management and Fisheries Management	323
Co-Management and International Law	324

**PART THREE: MARINE LIVING RESOURCE MANAGEMENT
SYSTEMS IN PRACTICE: ARCTIC AND ANTARCTIC REGIMES**

Chapter Four

MAXIMUM YIELD FISHERY:

BERING SEA DOUGHNUT HOLE CONVENTION 328

Introduction	328
Pollock Fishery of the Bering Sea prior to 1984	331
Collapse of the High Seas Pollock Fishery: 1984-1994	335
<i>Changes in Fishery Patterns</i>	335
<i>Challenge and Response</i>	339
<i>International Law and Negotiation of the Doughnut Hole Regime</i>	347
Post-1994: The Doughnut Hole Convention	353
<i>Participation</i>	353
<i>Objectives</i>	359
<i>Structure</i>	361
<i>Enforcement</i>	366
<i>Operation of the Doughnut Hole Convention</i>	370

Chapter Five

TOWARDS A PRECAUTIONARY FISHERY:

CONVENTION FOR THE CONSERVATION

OF ANTARCTIC MARINE LIVING RESOURCES 377

Marine Living Regimes in the Antarctic	377
CCAMLR - Negotiation	384
Approach to Management	390
Membership	399
Structures	401
Enforcement and Jurisdiction	410
CCAMLR in Action	422
<i>Decision-making</i>	422
<i>Ecosystem Management</i>	431
<i>Precautionary Approach</i>	435

<i>Management</i>	439
CCAMLR in Crisis: The Decline of the Patagonian Toothfish	451
<i>The Anatomy of the Crisis</i>	451
<i>Responses of CCAMLR to the Crisis</i>	457
<i>CCAMLR and Third States</i>	462
Chapter Six COMPARISONS AND CONCLUSIONS	469
Introduction	469
BASES OF COMPARISON	470
State Satisfaction - International Relations	471
<i>Regime Theory</i>	471
<i>Epistemic Communities</i>	476
Stakeholder Satisfaction - Exploitation	481
Stakeholder Satisfaction - Environmental Protection	484
<i>NGOs</i>	484
RELATIVE MERITS OF THE DIFFERENT APPROACHES	490
COMPLIANCE	494
Introduction	494
Coastal State	497
Flag State	504
Non-Flag State	507
Port State	508
Nationality	512
SUGGESTED SOLUTIONS	514
Universality and Objective Regimes	514
Technology and Compliance	522
Restricting Trade	525
Co-Management	526
<i>Advantages of Co-Management</i>	526
<i>Disadvantages of Co-Management</i>	529
<i>Application of Co-Management</i>	532
CONCLUSION	533
SELECTED BIBLIOGRAPHY	539
APPENDIX	600

LIST OF TABLES

Doughnut Hole Fishing Effort by State: 1983-89	338
Pollock Catch in the Bering Sea: 1980-93	345
Pollock Catch in the Bering Sea: 1994-97	359
AHL Calculation Table	364
Krill Catch in the CCAMLR Area	442

LIST OF DIAGRAMS

Fishery/Yield Diagrams	66
Antarctic Marine Ecosystem	386
CCAMLR Conservation Measures	429
Fish Catches of Selected Species around South Georgia	448

LIST OF MAPS

Bering Sea Doughnut Hole	352
CCAMLR Area	394

ABBREVIATIONS

AD	<i>Anno Domini</i>
AEPS	Arctic Environmental Protection Strategy
APFIC	Asia-Pacific Fishery Commission
ASOC	Antarctic and Southern Oceans Coalition
ATCP	Antarctic Treaty Consultative Party
ATS	Antarctic Treaty System
AustTS	Australian Treaty Series
BIOMASS	Biological Investigations of Marine Antarctic Systems and Stocks
CARC	Canadian Arctic Resources Committee
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CECAF	Fishery Committee for the Eastern Central Atlantic
CEMP	CCAMLR Ecosystem Monitoring Programme
CITES	Convention for the International Trade in Endangered Species
CLR	Commonwealth Law Reports
Cmnd	Command Papers
COFI	FAO Committee on Fisheries
COP	Conferences of the Parties (Biodiversity Convention)
CSD	Commission for Sustainable Development
Cth	Commonwealth

DOALOS	UN Division of Ocean Affairs and the Law of the Sea
DWFN	Distant Water Fishing Nation
FAO	Food and Agriculture Organization of the United Nations
EEZ	Exclusive Economic Zone
EU	European Union
HFTCC	Hunting Fishing and Trapping Coordinating Committee
HMAS	Her Majesty's Australian Ship
ICES	International Council for the Exploration of the Sea
ICJ	International Court of Justice
ICJ Reports	International Court of Justice Reports
ICRW	International Convention for the Regulation of Whaling
IFA	Inuvialuit Final Agreement
IGO	Intergovernmental Organization
IGY	International Geophysical Year
ILC	International Law Commission
ILM	International Legal Materials
ILR	International Law Reports
IOC	International Oceanographic Commission
ISOFISH	International Southern Oceans Fisheries Information Clearing House
IUCN	International Union for the Conservation of Natural Resources

IWC	International Whaling Commission
LDC	London Dumping Convention
LL/GDS	Land-locked and Geographically Disadvantaged States
LME	Large Marine Ecosystem
LNTS	League of Nations Treaty Series
MEY	Maximum Economic Yield
MSY	Maximum Sustainable Yield
NAFO	Northwest Atlantic Fisheries Organization
NAMMCO	North Atlantic Marine Mammal Commission
NIEO	New International Economic Order
NGO	Non-governmental Organization
NSW	New South Wales
NWT	North West Territories
OALOS	UN Office of Ocean Affairs and the Law of the Sea
OJ	Official Journal
OSY	Optimum Sustainable Yield
PCIJ	Permanent Court of International Justice
RAN	Royal Australian Navy
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SCAR	Scientific Committee on Antarctic Research
SCOI	Standing Committee on Observation and Inspection

SCOR	Scientific Committee on Oceanographic Research
SS/HMS Agreement	Straddling Fish Stocks and High Migratory Fish Stocks Agreement
SP	State Papers
TAC	Total Allowable Catch
TIAS	Treaty and International Agreement Series
TS	Treaty Series
UKTS	United Kingdom Treaty Series
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCLOS I	First United Nations Conference on the Law of the Sea
UNCLOS II	Second United Nations Conference on the Law of the Sea
UNCLOS III	Third United Nations Conference on the Law of the Sea
UNEP	United Nations Environment Programme
UNESCO	United Nations Economic Social and Cultural Organization
UNGA	United Nations General Assembly
UNTS	United Nations Treaty Series
US	United States
USSR	Union of Soviet Socialist Republics
VMS	Vessel Monitoring System

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PART ONE

INTRODUCTION

Statement of Objectives

At the end of the 20th Century, world fisheries are in crisis. While the size of the total world catch is being maintained, it is clear that this is at the cost of placing stocks under increasing pressure. Some traditional fisheries, most spectacularly the Atlantic cod fishery on the Grand Banks of Newfoundland, have completely collapsed. Other regional fisheries, are regarded as being in extreme danger of collapse¹, with dire consequences for the communities that rely upon them.

International law has a role to play in dealing with this crisis. It circumscribes the limits of permissible action by a State in managing its fisheries, and outlines the principles by which this management ought to take place. Further, rather than

¹ For example, the Peruvian anchoveta catch gravely threatens that stock: See M.H. Glantz, "Man, State, and Fisheries: An Inquiry into Some Societal Constraints That Affect Fisheries Management" (1986) 17 *Ocean Development and International Law* p.191 at pp.194-199 and passim; M. Berrill, *The Plundered Seas: Can the World's Fish be Saved?*, (San Francisco: Sierra Club, 1997) pp.5-11; generally see S. La Rue, "A Deep Sea Disappearing Act: Overfished Oceans Can Give No More; Soon They May Give Much Less" (1995) *Quest*, <http://www.uniontrib.com/science_city/environment/environment950621.html>

being reactive to international developments in fisheries practice over the last 30 years, international law has in part been responsible for certain developments. The adoption of the exclusive economic zone (EEZ) with the framework of the Law of the Sea Convention² has placed 90 percent of the world's fisheries under national jurisdiction³, and this in turn has led to dramatic changes in the patterns of fishery exploitation, and the ownership of fishing vessels.

While the Law of the Sea Convention reflects the dominant paradigm in contemporary marine living resource management, it is not the only area of international law that has a role to play. The emergence of the precautionary principle in the late 1980s, and its subsequent adoption at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992⁴, and its acceptance within the Highly Migratory and Straddling Stocks

² *United Nations Convention on the Law of the Sea*, done at Montego Bay 10 December 1982, entered into force 16 November 1994: reprinted 21 ILM 1261 (1982)

³ See FAO Committee on Fisheries, *UNCED and its Implications for Fisheries*, FAO Doc. COFI/93/Inf/8, January 1993: reprinted (1993) 9 *International Organizations and the Law of the Sea Documentary Yearbook* p.665 at pp.674-675

⁴ For example see Principle 15, *Rio Declaration on the Environment and Development*, adopted at Rio de Janeiro on 14 June 1992: reprinted 31 ILM 874 (1992); the proceedings of UNCED are reproduced in N.A. Robinson (ed.), *Agenda 21 and the UNCED Proceedings* (New York: Oceana, 1992)

Agreement⁵ presents a distinct alternative approach to the management of fisheries.⁶ Amid these two approaches, additional considerations, including how the interests of fishing communities, economic efficiency and the viability of marine ecosystems, all need to be taken into account and reconciled.

This thesis will examine the principles of marine living resource management found in contemporary international law and look at the means by which those principles are implemented. It will closely consider the content of international law, and examine the nature and scope of the various alternative principles by which such resources can be managed, and then move to assess the relative effectiveness of the mechanisms designed to implement these principles. Such effectiveness will be gauged in terms of the reflection of principles in the procedural framework of the regulatory instruments. This can be done in absolute terms, when viewed as the

⁵ *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, done at New York 4 December 1995, not yet in force: reprinted in 34 ILM 1547 (1995). Article 6 expressly approves a precautionary approach to fisheries management, and the Preamble states the Convention is seeking to address problems identified in Chapter 17 of Agenda 21 adopted at UNCED.

⁶ The precautionary approach to fisheries management and within international environmental law is considered in Chapter 3. See also H. Hohmann, *Precautionary Legal Duties and Principles of Modern International Environmental Law*, (London: Graham & Trotman, 1994). The Food and Agriculture Organization of the United Nations (FAO) endorsed a precautionary approach to fisheries management in 1994: S.M. Garcia, *The Precautionary Approach to Fisheries with Reference to Straddling Fish Stocks and Highly Migratory Fish Stocks*, (Rome: FAO, 1994)

measure of success of the mechanisms from the perspective of differing stakeholders, such as the fishing industry, fishing communities, environmentalists and scientists.

However, to effectively compare the relative merits of different management systems, there must remain a legitimate basis of comparison. This will be done by examining the operation of representative marine living resource management regimes. Ideally, these regimes ought to have been in operation for a reasonable period, and be attempting to regulate analogous ecologies. Such a situation exists in the polar regions: where both principal approaches to marine living resource management have been employed for extended periods and where the regulation of species have been placed under strain. In the Arctic, the regulation of the pollock resources of the central Bering Sea⁷, using the traditional, Law of the Sea Convention-based approach will be compared to the ecosystem-based approach of the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR).⁸

⁷ *Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, done at Washington DC on 16 June 1994, entered into force 8 December 1995: reprinted in 34 ILM 67 (1995) [hereafter cited as the Doughnut Hole Convention]

⁸ *Convention for the Conservation of Antarctic Marine Living Resources*, done at Canberra 20 May 1980, entered into force 7 April 1981; UKTS No.48 (1982)

The thesis will be divided into three parts. The first part will outline the theoretical framework in which the thesis will operate, including the various bases of comparison between the different management systems. An inter-disciplinary approach is required, as there are a number of levels on which a comparative analysis can take place, and not all of these sit comfortably within the confines of public international law. Accordingly, some background to these non-legal constructs is essential.

The second part will examine the two principal approaches to marine living resource management in contemporary international law. The development of the fisheries management theory, and the employment of economic analysis to fishery exploitation will be examined, as well as the emergence of these techniques into the evolving law of the sea. The provisions of the Law of the Sea Convention dealing with marine living resource management will be closely considered, particularly the duties of cooperation between States, and the nature of the maximum sustainable yield, qualified by other factors, which forms the objective of fisheries management under the Convention. This will be juxtaposed with an analysis of the development of the precautionary principle and ecosystem management in international environmental law, and its incorporation into fisheries management theory.

The third part of the thesis will place the two management theories into context, but examining their application in two contemporary international marine living

resource management conventions. The operation of CCAMLR and the Bering Sea Doughnut Hole Convention will provide a template for the evaluation of the two management approaches considered in the previous part. The two management systems will then be compared and evaluated. The relative merits of each system will be placed into sharp relief, using the theoretical tools provided in the first part of the thesis. The successes, failures and limitations of the two approaches is explored, and consideration of how the different systems might have their effectiveness enhanced will also be considered. The thesis will conclude by placing the comparative analysis in a broader world marine living resource management context, to see whether the solutions posed at a regional level might have application in the wider world.

CHAPTER ONE

BACKGROUND AND THEORETICAL APPROACHES

Comparing the Poles

The polar regions have long provided a source of fascination for those who live in warmer climes. From the earliest times, legends tell of domains of mist and ice to the north (or the south depending on your location¹) where strange creatures lived, and the sun disappeared from the sky for weeks at a time.² In more modern times, this fascination took the form of European voyages of exploration, at first seeking gold or quick sea routes to Asia³, but later motivated only by a desire for scientific

-
- ¹ For example, ancient Maori legend tells of the journey of Ui-te-Rangiora who sailed south from New Zealand in a giant war canoe in about 650 AD. In the course of the journey, Ui-te-Rangiora saw vast white floating islands, which were almost certainly icebergs. It is unlikely however the ancient Maori voyagers ever reached the Antarctic continent: see C.C. Joyner, *Antarctica and the Law of the Sea* (Dordrecht: Martinus Nijhoff, 1992) p.3
- ² See L. Rey, "The Arctic Ocean: A 'Polar Mediterranean'" in L. Rey (ed.), *The Arctic Ocean: The Hydrographic Environment and the Fate of Pollutants* (London: Macmillan, 1982) p.3 at pp.3-14; see also V.E. Fuchs, "Antarctica: Its History and Development" in F. Orrego Vicuña, *Antarctic Resources Policy* (Cambridge: Cambridge University Press, 1983) p.13 at pp.13-15
- ³ The one of the best (and among the earliest) examples of voyages into the polar regions seeking wealth and the Northwest Passage to Asia were those of Martin Frobisher to Baffin Island between 1576 and 1587: see D.B. Quinn & A.N. Ryan, *England's Sea Empire 1550-1642* (London: G. Allen

knowledge and the fame of discovery.⁴

In the 19th and 20th Centuries, the nature of the interest in the polar regions began to change. In addition to being places of scientific interest, the poles also began to be considered as places of economic opportunity, albeit on a relatively limited scale. This economic interest focused almost exclusively on the exploitation of marine living resources.⁵ Small whaling and sealing vessels in the 19th Century, and huge factory ships and trawlers in the 20th Century have plied the Arctic and Southern Oceans, making a modest but by no means insignificant contribution to world production drawn from the oceans.

At a superficial level, the similarities between the two poles are relatively obvious. Both are remote from the larger centres of human activity and development; both are possessed of sensitive ecological systems, with relatively short and concentrated food chains; both are subject to extreme weather conditions, and unique conditions in terms of the length of night and day throughout the year; both have large areas

& Unwin, 1983) pp.33-35

⁴ P. Berton, *The Arctic Grail: The Quest for the North West Passage and the North Pole 1818-1909* (New York: Penguin, 1989) passim

⁵ There is (and has been for some time) economic interest in the Arctic in non-living resources. Coal has been mined in the Svalbard Archipelago for virtually all of the 20th Century, and offshore oil exploitation is currently being undertaken in the Beaufort Sea: see generally E.C. Singh, *The Spitsbergen (Svalbard) Question* (Oslo: Universitetsforlaget, 1980); D.R. Rothwell, *Maritime Boundaries and Resource Development: Options for the Beaufort Sea* (Calgary: Canadian Institute of Resources Law, 1988)

covered by ice for extended periods. At one level, such similarities appear to justify the pertinence of a comparison between the two regions.

The forceful response to this is voiced by Franckx, Boyle, Young and Osherenko, among others.⁶ Individually, they focus on a number of differences that diminish the effectiveness of comparing the poles. Firstly, and most obviously are geographical differences. The Arctic is essentially a frozen ocean surrounded by continents, whereas the Antarctic is a frozen continent surrounded by oceans. As a result, there are clear and distinct differences in the climate and habitats of the polar regions. The Antarctic, with its vast ice sheet, is generally far colder than the Arctic, and is subject to more severe weather conditions more often.⁷ The dynamics of the oceanic ice coverage is also very different, with the sea ice in the Antarctic pulsating back and forth each year from 20 million square kilometres in

⁶ O.R. Young, "'Arctic Waters': The Politics of Regime Formation", (1987) 18 *Ocean Development and International Law* p.101; G. Osherenko & O.R. Young, *The Age of the Arctic: Hot Conflicts and Cold Realities* (Cambridge: Cambridge University Press, 1989) pp.242-244; E. Franckx, *Maritime Claims in the Arctic: Canadian and Russian Perspectives* (Dordrecht: Martinus Nijhoff, 1993) pp.6-8 [hereafter cited as Franckx (1993)]; E. Franckx, "Environmental Protection: An Arctic-Antarctic Comparison" in J. Verhoeven, P. Sands & M. Bruce (eds), *The Antarctic Environment and International Law* (London: Graham & Trotman, 1992) p.109 [hereafter cited as Franckx (1992)]; A.E. Boyle, "Remarks on Legal Regimes of the Arctic" (1988) 82 *Proceedings of the American Society of International Law* p.323.

⁷ Franckx (1993), *supra* note 6, at p.6.

winter to 4 million square kilometres in summer.⁸ The variations in Arctic sea ice are far less dramatic, ranging from 10 million square kilometres in winter to 8 million square kilometres in summer.⁹

A second difference relates to the great political differences between the two regions. The Antarctic has been, certainly since 1959, a political vacuum. By virtue of Article IV of the Antarctic Treaty¹⁰, the claims of various States to Antarctic territory have been "frozen". Scientific cooperation is expressly encouraged, scientific data collected is exchanged and the degree of international goodwill and concord between the States present on the continent is remarkable.¹¹ The testing of nuclear weapons or the storage of radioactive waste is expressly prohibited¹², as are military activities or the establishment of bases.¹³ In contrast,

⁸ C.C. Joyner, *Antarctica and the Law of the Sea* (Dordrecht: Martinus Nijhoff, 1992) pp.15-16.

⁹ R.G. Barry, "The Present Climate of the Arctic Ocean and Possible Past and Future States" in Y. Herman (ed.), *The Arctic Seas* (New York: Van Nostrand Reinhold, 1989) p.1; L. Rey, "The Arctic Ocean: A Polar Mediterranean" in L. Rey (ed.), *The Arctic Ocean: The Hydrographic Environment and the Fate of Pollutants* (London: Macmillan, 1982) p.3 at p.34.

¹⁰ *Antarctic Treaty*, done at Washington 1 December 1959, entered into force 23 June 1961: 402 UNTS 71

¹¹ See Articles I, II, III and VII, Antarctic Treaty. For an example of conviviality and cooperation during the height of the cold war see Keith Suter, *Antarctica: World Law and the Last Wilderness* (Sydney: Friends of the Earth, 1979) pp.24-25

¹² Article V, Antarctic Treaty

the Arctic was a major theatre of operations during the Cold War. From the 1950's, the United States and Canada maintained the DEW line at 70° North to prevent Soviet incursions into North American airspace. In more recent times, the two superpowers maintained fleets of nuclear-powered submarines that could operate beneath the Arctic ice. The USSR (as it then was) maintained a huge military establishment on the Kola Peninsula.¹⁴ Rather than a demilitarised region, free of conventional and nuclear forces, the Arctic was a vital strategic area, where both powers deployed nuclear forces.¹⁵

A third difference is the level of human activity in the two regions. The Antarctic is devoid of any indigenous population, and has no truly permanent population. Settlements of scientists and support staff, who are usually stationed on a base for no more than 18 months at a time, are irregularly scattered around the continent.¹⁶ No industry save for irregular tourist visits takes place on shore.¹⁷ On the other

¹³ Article I, Antarctic Treaty

¹⁴ W. Østreng, "The Geostrategic Conditions of Deterrence in the Barents Sea" in L.W. Brigham (ed.), *The Soviet Maritime Arctic* (Annapolis: Naval Institute Press, 1991) p.201; W.H. Critchley, "Polar Deployment of Soviet Submarines" (1984) 39 *International Journal* p.828.

¹⁵ Osherenko & Young, *supra* note 6, pp.17-44 & p.243.

¹⁶ For a list of over-wintering bases in the Antarctic see (1994) 30 *Polar Record* at pp.78-79.

¹⁷ Rising levels of tourism however have led to concerns that environmental safeguards for tourist activities ought to be implemented: for example see Antarctic Treaty Consultative Party Meeting Recommendation XVI-13 entitled "Tourism and Non-Government Activities in the Antarctic Treaty

hand the Arctic possesses a significant collection of indigenous communities, who do not merely live permanently in the region, but can trace back such a presence to prehistoric times.¹⁸ Further, the Arctic is the site of considerable industrial activity, notably on the Kola Peninsula, particularly in Murmansk, and on oil fields of the Beaufort Sea.¹⁹

The arguments are all persuasive and have some weight. Certainly the different geopolitical backgrounds of the two regions have impacted on the nature and scope of the international regimes that have formed in each of them. The influence and impact of an epistemic community of scientists on policy in the Antarctic has not been duplicated in the Arctic, and these factors raise questions as to whether comparison is fruitful. However, it is submitted that comparison in this context is a valid exercise, for the following reasons.

Firstly, the core comparison focuses on the operation of fisheries regimes in circumpolar seas, not on the broader political or geographic issues that beset the two regions. Both the Antarctic and the Arctic possess substantial stocks of marine

Area": reprinted in W.M. Bush, *Antarctica and International Law* (New York: Oceana, 1982-) Folder II Booklet AT91G 88-90 (1994).

- ¹⁸ These include the Inuit, the Inuvialuit, the Aleut, the Saami, the groups of northern Russia forming the Association of the Indigenous Minorities of the North, Siberia and the Far East of the Russian Federation.
- ¹⁹ Osherenko & Young, *supra* note 6, pp.45-71; F. Griffiths, "The Arctic in the Russian Identity" in L.W. Brigham (ed.), *The Soviet Maritime Arctic* (Annapolis: Naval Institute Press, 1991) p.83 at pp.83-90.

living resources that flourish in the sub-Arctic and sub-Antarctic waters. The ecosystems in these areas are similar, being relatively narrow and highly concentrated in a few key species.²⁰ These key species are or have been the subject of substantial exploitation. The degree of vulnerability of these ecosystems is not duplicated in the same fashion elsewhere in the world²¹, and accordingly comparing approaches to the management and conservation of these stocks may prove worthwhile.

The political gulf that made the two poles so different is also beginning to narrow. Relations between East and West have dramatically improved with the end of the Soviet Union, and the commitment to the Arctic as a major theatre of confrontation has somewhat waned. This can be charted by the recent moves towards the establishment of a wide ranging environmental regime for the Arctic.²² Whereas

²⁰ See generally M.J. Dunbar, "Arctic Marine Ecosystems" in L. Rey (ed.), *The Arctic Ocean: The Hydrographic Environment and the Fate of Pollutants* (London: Macmillan, 1982) p.233; G.A. Knox, "The Living Resources of the Southern Ocean: A Scientific Overview" in F. Orrego Vicuña (ed.), *Antarctic Resources Policy: Scientific, Legal and Political Issues* p.21.

²¹ For example see R. Margalef, "Ecosystem Diversity Differences: Poles and Tropics" in M.J. Dunbar (ed.), *Polar Regions* (Calgary: Arctic Institute of North America, 1977) p.367.

²² The first moves towards a wide ranging regime for the Arctic can be found in the *Arctic Environmental Protection Strategy*, done at Rovaniemi, 14 June 1991: reprinted in 30 ILM 1624 (1991); For other recent developments in this area see D.R. Rothwell, "International Law and Protection of Arctic Environment" (1995) 44 *International and Comparative Law Quarterly* p.280; D.D. Caron, "Toward an Arctic Environmental Regime" (1993) 24 *Ocean Development and International Law* p.377.

in the past, there was little interest in pursuing such objectives by the Arctic States²³, there appears now to be a genuine commitment to achieve some level of regional cooperation.²⁴ While this cooperative interest has not extended to fisheries²⁵, the change in atmosphere means that a greater range of negotiable solutions to fisheries problems are possible.²⁶ The environment is such that different approaches might be acceptable, and accordingly comparison is not beset with the pointlessness such an activity might have encountered a decade ago.

The issue of indigenous exploitation of fisheries does make the Arctic fundamentally different from the Antarctic. Traditional systems of management have subsisted in the Arctic for generations, whereas Antarctic exploitation can be

²³ The parties to the Arctic Environmental Protection Strategy are the United States, Canada, Denmark (on behalf of Greenland), Iceland, Norway, Sweden, Finland, and Russia.

²⁴ This greater degree of cooperation is evidenced by the establishment of the Arctic Council in Ottawa in September 1996: see *Declaration on the Establishment of the Arctic Council*, done at Ottawa 19 September 1996: reprinted in (1996) 4 *Arctic Bulletin* p.4

²⁵ At the present time there are no plans to adapt the Arctic Council to explore fisheries issues in the short or medium terms: telephone discussions with Patricia Low-Bedard, Canadian Department of Foreign Affairs and International Trade, June 1995.

²⁶ Things may even beginning to change. Note the continuing negotiations between Norway, Russia and Iceland over the Barents Sea "loophole" in Oslo in April 1995: Discussions with L. Skalova, Russian Committee on Fisheries, 4 May, 1995. On the "loophole" see generally E. Meltzer, "Global Overview of Straddling and Highly Migratory Fish Stocks: The Non-Sustainable Nature of High Seas Fisheries" (1994) 25 *Ocean Development and International Law* p.255 at pp.279-281.

charted closely from its inception to the present day. However, the level and volume of indigenous exploitation of most species does not approach the level of the commercial harvest.²⁷ Where indigenous people target endangered species they have traditionally hunted, the ultimate reason for the species' precarious state may be due to commercial harvesting at an earlier time. Effective management of fisheries is needed to control and limit commercial fishing, and this is true in both regions.²⁸ As such, comparing different approaches to effective management, and evaluating the results of such management is useful.

Finally, there is certainly a limited volume of literature considering the ramifications of two different conceptual approaches to marine living resource management, and virtually none that attempts to place the two systems within a framework of a comparative analysis, to attempt to determine the relative merits of the two approaches, and to indicate where deficiencies exist within either or both.

²⁷ This issue is discussed in N.C. Doubleday, "Aboriginal Subsistence Whaling: The Right of Inuit to Hunt Whales and the Implications for International Environmental Law" (1989) 17 *Denver Journal of International Law and Policy* 373; M. Chiropolos, "Inupiat Subsistence and the Bowhead Whale: Can Indigenous Hunting Cultures Coexist with Endangered Animal Species?" (1994) 5 *Colorado Journal of International Environmental Law and Policy* p.213.

²⁸ This is still the case even with indigenous harvesting in the Arctic. Note the disturbing scientific data on Narwhal and Beluga incorporated in an international commission report: *Report of the Fourth Meeting of the Canada/Greenland Joint Commission on the Conservation and Management of Narwhal and Beluga*, Pond Inlet, N.W.T., Canada, 25-27 August 1994, pp.2-8.

Bases of Comparison

While the polar regions are used as the context in which the comparison of fisheries management regimes is to take place, the exact substance of that comparison also needs to be spelled out. The management of the marine living resources of a region can be considered at different levels and in different ways. At the core of this study, principles in international law providing for the management of living marine resources, deriving from both the Law of the Sea Convention and from international environmental law, will form the basis of comparison, and so the study will use the underlying approach of the management systems to create a simple taxonomy of regulatory regimes. However, while international law provides the means of classification, it will be necessary to approach the comparison of marine living resource regimes from other perspectives.

Ultimately the reason to undertake any comparative assessment of the operation of marine living resource management regimes is to draw conclusions about their relative effectiveness. Assessments of effectiveness will depend on the perspective of the observer. Different individuals or organizations may have distinct and separate objectives they hope to see achieved from the operation of a management regime. In this context, this study will not merely seek to classify marine living resource management regimes into an international law based taxonomy, but will attempt to evaluate the operation of such regimes from the standpoint of the three principal stakeholders with a tangible interest in the successful employment of such

regimes: States; marine living resource exploiters; and environmental interests.

State Satisfaction - International Relations

Within this work, as an exercise in legal analysis, international law will provide the fundamental basis of comparison. If principles of international law that underpin environmental management operate on a global level, and if they can be identified, levels of compliance with such principles can be a legitimate basis of comparison. The validity of such a comparison is further enhanced in a situation where the resource regimes in issue are operating in analagous physical environments. In such a situation, the relative effectiveness of the different approaches, as well as deficiencies common to both can be easily identified.

However using international law as the sole basis of comparison is necessarily problematic. The nature of international law is more fluid and difficult to identify than domestic legal principles. As it is derived from the interaction of States rather than the statements of an identifiable sovereign body, its precise content may be in dispute. While such dispute will more usually directed at the scope of rights and obligations of individual States, it can occur in the identification of the underlying principles upon which State rights and obligations are based. The problems will usually arise out of ongoing development of international law in particular fields. As new norms emerge, they initially may lack the necessary widespread acceptance

required to formally incorporate them into international custom.²⁹ Nevertheless, while the identification of the content of international law may present problems, the task is by no means impossible in the context of environmental protection and marine living resource management. The problem in that context is not merely a lack of detail as to the content of the law, but determining the content itself. That is, whether the alternative principles of management advanced in recent years have yet reached the status of binding norms, or whether older principles have yet to be supplanted.³⁰

Although international law occupies a central position in the analysis, it would be erroneous to proceed on the basis it was the only appropriate avenue upon which to base a comparative study. International law operates in an environment where the participants in it are States, and its functions and content are directly reflective of their status. This is most graphically illustrated by the sources of international law, which are most succinctly spelled out in Article 38 of the Statute of the

²⁹ The most accepted definition of customary international law, consisting of widespread State practice and accompanying *opinio juris*, is derived from the majority judgment of the International Court of Justice in the *North Sea Continental Shelf Cases* ICJ Reports 1969 p.3 at pp.41-44. See also I. Baxter, "Treaties and Custom" (1970) 129 *Recueil des Cours* p.25 and *infra* note 34.

³⁰ A good example of this process can be seen in the attitude of the ICJ and other international tribunals to the Law of the Sea Convention. Exactly what point in time parts of the Law of the Sea Convention came to represent custom can be estimated, but not with complete precision: see the discussion in Chapter 2 at p.126

International Court of Justice:³¹

- (a) international conventions, whether general or particular, establishing rules expressly recognized by the contesting states;
- (b) international custom, as evidence of a general practice accepted as law;
- (c) the general principles of law recognized by civilised nations;
- (d) ...judicial decisions and the teachings of the most highly qualified publicists of the various nations...³²

Of these sources open to the ICJ, two are directly dependant on State behaviour and interaction. International conventions and treaties are international relations manifest in written form, being agreements between States as to how they will behave in certain circumstances.³³ International custom is even more directly dependent upon State behaviour. Of the two elements required to establish the existence of a norm of customary international law³⁴, the first, uniform State

³¹ A number of publicists have noted that Article 38 may function as a mere approximation of the sources of international law, and that the Article was intended to no more than provide a legal construct in which the ICJ was to operate: M. Dixon, *Textbook on International Law* (London: Blackstone Press, 1993) p.19. Whether or not such views should be accepted or otherwise does not alter the basic position that State action is critical in the formation of international law.

³² This last category is a subsidiary source.

³³ The study of the formation and maintenance of substantial international conventions is largely the objective of the proponents of regime theory within international relations scholarship. More detailed consideration of regime theory is considered below at p.25.

³⁴ These were definitively identified by the International Court of Justice in the *North Sea Continental Shelf Cases* ICJ Reports 1969 p.3 at pp.41-44. The passing of a certain period of time may also be a relevant factor, but that this may be effectively incorporated in to the State practice requirement: see R. Piotrowicz, "The Time Factor in the Creation of Rules of Customary International Law" (1994) 21 *Polish Yearbook of International Law* p.69

practice, focuses directly upon State behaviour. States must behave in an almost universally consistent fashion, or at least in such a fashion at a regional level.³⁵ The second element, *opinio juris*, requires a belief by the State its compliance with State practice is demanded by international law.³⁶ As such, both elements are central to the work of international relations scholars: the behaviour of States and the reasons motivating that behaviour.³⁷

International law theorists have also long maintained the necessity of a link between international law and political science, even when political scientists were seeking to deny the very validity of international law of an independent subject of study.³⁸ In the years following the Second World War, political realist scholars such as Morgenthau³⁹ and Kennan⁴⁰ advanced notions that States operated in an

³⁵ See *Asylum Case* ICJ Reports 1950 p.266; see also *Rights of Passage Case* ICJ Reports 1960 p.6

³⁶ *Opinio juris* has been criticised by Lauterpacht as a rather circular requirement, in that States are only bound by custom if they believe themselves to be bound: see H. Lauterpacht, "Sovereignty over Submarine Areas" (1950) 27 *British Yearbook of International Law* p.376 at p.395

³⁷ A similar link is noted by Dzidzornu in the context of customary international law and regime theory: D. Dzidzornu, *Marine Environment Protection in West and East Africa: An Analysis of Two Fledgling Regimes*, JSD Thesis in preparation, Dalhousie University, Chapter 1, p.8

³⁸ That international lawyers have maintained such an interest is disputed by some. See F. Boyle, *World Politics and International Law* (Durham: Duke University Press, 1985) pp.58-60

³⁹ H.J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace* (New York: Knopf, 1985); H.J. Morgenthau, "Positivism, Functionalism and International Law" (1940) 34 *American Journal of*

environment where there was no law. Law was something imposed by an authoritative body, fulfilling the role of government and police in a domestic context. Such a body was absent in international relations, so State action could be best explained by rampant self-interest, tempered by imbalances of and limitations on power that compelled either cooperation or conflict. International law was reduced to little more than a mode of description. The response to this was led by McDougal and Lasswell of Yale Law School, and reinforced through the work of individuals such as Richard Falk. They argued that while a technical approach to international law was inappropriate as not reflecting reality, it was equally flawed to ignore normative impact of international law on State behaviour.⁴¹ Rather than being about rules to be enforced, a better construction of international law was to say it reflected international values and States used it in assisting the attainment of

International Law p.260

⁴⁰ G. Kennan, *American Diplomacy 1900-1950* (Chicago: University of Chicago Press, 1951)

⁴¹ For example see M.S. McDougal and F.P. Feliciano, *Law and Minimum World Public Order: The Legal Regulation of International Coercion* (New Haven: Yale University Press, 1961) pp.1-6; M.S. McDougal, "International Law, Power and Policy: A Contemporary Conception" (1953) 82 *Recueil des Cours* p.137. The seminal article for the Lasswell-McDougal approach is found at: H. Lasswell and M.S. McDougal, "Legal Education and Public Policy: Professional Training in the Public Interest" (1943) 52 *Yale Law Journal* 203; see also A-M. Slaughter Burley, "International Law and International Relations Theory: A Dual Agenda" (1993) 87 *American Journal of International Law* p.205 at p.210

policy objectives.⁴²

In the 1970s and 1980s, the political realists faced challenges from within their own ranks, as regime theorists⁴³ began to examine the nature of international cooperation. While scholars in this area are not entirely accepting of international law, there are recent trends to suggest that collaboration between the two fields is likely to grow.⁴⁴ While there may still be dispute between the disciplines as to whether international law is a normative influence in international relations, and if so to what degree it shapes State behaviour, there is express recognition that a complete picture of international affairs requires consideration of international law and political science.

If it is accepted that international law and international relations are intertwined, and the effective discussion of one requires at least the consideration of the other,

⁴² Falk does not go as far as McDougal in terms of the impact of political factors on international behaviour. Falk takes the view that McDougal "exaggerates the openness of the legal system" and thereby underestimates the normative impact of international law: R.A. Falk, *The Status of Law in International Society* (Princeton: Princeton University Press, 1970) pp.43-45; see also Slaughter Burley, *supra* note 41, p.211

⁴³ See the discussion below at p.25.

⁴⁴ For example see R.O. Keohane, "Compliance with International Commitments: Politics within a Framework of Law" (1992) 86 *Proceedings of the Eighty-Sixth Annual Meeting of the American Society of International Law* p.176 at pp.176-180; and the comments by Oran Young: (1992) 86 *Proceedings of the Eighty-Sixth Annual Meeting of the American Society of International Law* p.172 at pp.172-175

the next logical question is what approaches to international relations theory might profitably be examined. A variety of theoretical approaches to international relations exist, but selection of the most useful and relevant to this study must have due regard to the nature of the task being attempted.

Many recent theories of international relations focus on State power, and the anarchical nature of international society.⁴⁵ States are influenced by self-interest, and react according to how they best feel that self-interest will be served. The system is based on notional equality between State actors, but power inequalities mean that stronger States can exert a disproportionate influence over weaker States.⁴⁶ However, there is no overarching source of authority or legitimacy, and power is decentralised among the States, hence the term "anarchical".⁴⁷ Such constructions may seek to identify a hegemon, and explain international conventions as either assertions of power by the hegemon, or compromises borne out in

⁴⁵ The term "anarchical" was popularised by Hedley Bull's influential study: H. Bull, *The Anarchical Society: A Study of Order in World Politics* (New York: Columbia University Press, 1977).

⁴⁶ A neat consideration of such "realist" perceptions of international relations is given by Krasner: S.D. Krasner, "Regimes and the Limits of Realism: Regimes as Autonomous Variables" in S.D. Krasner (ed.), *International Regimes* (Ithaca: Cornell University Press, 1983) p.355 at p.356; see also K. Waltz, *Theory of International Politics* (Reading: Addison-Wesley, 1979) p.79; K.W. Abbott, "Modern International Relations Theory: A Prospectus for International Lawyers" (1989) 14 *Yale Journal of International Law* p.335 at pp.343-344

⁴⁷ A useful summary of the current international relations model that supports these principles is given by Abbott: Abbott, *supra* note 46, pp.346-348

situations where a clear hegemonic State is absent.⁴⁸

Without passing judgment on these theoretical approaches, they are of little utility in the present situation.⁴⁹ In the context of marine living resource management, there is strong evidence to suggest an absence of an identifiable hegemon at all.⁵⁰ Further, different resource management arrangements often have different participants, which would preclude the identification of a consistent hegemon even if one could be said to exist. What is needed are aids to bring about a meaningful comparison of the principles and procedural content of marine living resource regimes. Two theoretical constructs meet this criterion, regime theory and the influence of epistemic communities.

⁴⁸ The "theory of hegemonic stability" encompasses the view that the involvement of a single dominant State will tend to produce strong regimes: see the discussions in R.O. Keohane, "The Demand for International Regimes" in S.D. Krasner (ed.), *International Regimes* (Ithaca: Cornell University Press, 1983) p.141 at p.142; R.O. Keohane, "The Theory of Hegemonic Stability and Changes in International Economic Regimes, 1967-1977" in O.R. Holsti, R. Siverson and A. George (eds), *Changes in the International System* (Boulder: Westview, 1980)

⁴⁹ Hegemonic stability theory has major flaws in explaining the persistence of regimes in the absence or decline of a hegemon, or the relative absence of regime formation during the 19th Century when Great Britain occupied a hegemonic position in world affairs: Keohane, *supra* note 48, p.142

⁵⁰ This is borne out by the result of the Pacific "tuna war" in the 1980's between the United States and the Pacific island "micro-States". In spite of the most dramatic power imbalance imaginable, the micro-States were able to negotiate a favourable fisheries convention: see B.M. Tsamenyi, "The Treaty on Fisheries between the Governments of Certain Pacific Island States and the Government of the United States of America: The Final Chapter in United States Tuna Policy" (1989) 15 *Brooklyn Journal of International Law* p.183

Regime Theory

Although the concept of "cooperative regimes" being formed into international law to resolve specific issue areas between States is not original to the 1980's⁵¹, most of the development of regime theory has occurred in the last 15 years through the work of individuals such as Stephen Krasner, Ernst Haas, Robert Keohane and Oran Young.⁵² The underlying principle of regime theory is that States operate in an environment of international problems. Each State, in attempting to solve these problems, must evaluate the merits of a variety of different solutions. Regardless of their content, different solutions will either be attempted by the State unilaterally, or addressed cooperatively with other States. Regime theorists argue that States will undertake what amounts to a cost-benefit analysis to determine which mode of solution produces the Pareto-optimal result. With problems that arise in areas beyond national jurisdiction, or are intrinsically transnational in character,

⁵¹ For example see R.A. Falk, *The Status of Law in International Society* (Princeton: Princeton University Press, 1970) p.56

⁵² For example see O.R. Young, "Regime Dynamics: The Rise and Fall of International Regimes" in S.D. Krasner (ed.), *International Regimes* (Ithaca: Cornell University Press, 1983) p.93; S.D. Krasner, "Structural Causes and Regime Consequences: Regimes as Intervening Variables" (1982) 36 *International Organization* p.185; O.R. Young, *International Cooperation: Building Regimes for Natural Resources and the Environment* (Ithaca: Cornell University Press, 1989); O.R. Young and G. Osherenko, "International Regime Formation: Findings, Research Priorities and Applications" in O.R. Young & G. Osherenko, *Polar Politics: Creating International Environmental Regimes* (Ithaca: Cornell University Press, 1993) p.223; E.B. Haas, "Words Can Hurt You; or, Who Said What to Whom about Regimes" in S.D. Krasner (ed.), *International Regimes* (Ithaca: Cornell University Press, 1983) p.23

cooperation will usually produce the most cost-effective result - hence the formation of international regimes. Unilateral action, whether by the assertion of jurisdiction over an international problem, military action or by some other means, will generally be costlier in terms of monetary or diplomatic capital, and hence encourage States to seek a cooperative, and usually cheaper, solution.⁵³ For devotees of regime theory, regimes are simply the need for State cooperation on an issue or problem manifested in agreement.⁵⁴

An excellent contemporary example can be seen in Canadian policy towards the Grand Banks fisheries east of Newfoundland. When faced with the problem of Spanish vessels fishing for turbot on the Grand Banks just beyond the Canadian EEZ, Canada initially sought a cooperative solution by seeking agreement on turbot quotas through a regional fishing organisation. Only when it was apparent this solution was failing did Canada abandon this policy and seek to unilaterally assert

⁵³ See Krasner, *supra* note 52, pp.5-20

⁵⁴ As noted above, two of the sources of international law are directly dependent upon State behaviour. Puchala and Hopkins take the view that regimes and behaviour are inextricably linked: "Behaviour follows from adherence to principles, norms, and rules, which legal codes sometimes reflect" while regimes are the participants' subjective understanding and expectations of what these rules, principles and norms are: D.J. Puchala & R.F. Hopkins, "International Regimes: Lessons from Inductive Analysis" in S.D. Krasner (ed.), *International Regimes* (Ithaca: Cornell University Press, 1983) p.61 at p.62. It follows that where State behaviour is reflected in written legal codes, the parties' expectations of the content of the regime will be found in those written legal instruments - hence a concrete relationship between regimes and the content of international law.

its jurisdiction and arrest a Spanish vessel.⁵⁵ However, rather than continue to maintain the attendant difficulties of monitoring and policing the fishery in this fashion, in the face of international protest from long-standing allies, Canada has been active in urging a cooperative solution, chiefly through the negotiations and subsequent agreement upon the United Nations Straddling Stocks Convention.⁵⁶ To a regime theorist, the Canadian support for a cooperative solution to the problem would be predictable - even though the unilateral action taken was domestically extremely popular and not devoid of support in international law.⁵⁷

One intrinsic difficulty with regime theory is that there is no strict consensus in the definition of the term "regime".⁵⁸ A range of different definitions of the term

⁵⁵ There are numerous accounts of the incident and the subsequent accommodation reached with the European Union: for example see P.G.G. Davies & C. Redgwell, "The International Regulation of Straddling Fish Stocks" (1996) 67 *British Yearbook of International Law* p.199

⁵⁶ The dispute is discussed in C.C. Joyner & A.A. von Gustedt, "The Turbot War of 1995: Lessons from the Law of the Sea" (1996) 11 *International Journal of Marine and Coastal Law* p.425

⁵⁷ Spain responded to Canada's action by commencing an action in the International Court of Justice. The Court ultimately ruled it did not have jurisdiction to hear the matter: *Fisheries Jurisdiction (Spain v Canada)* ICJ Reports 1998, (unreported, 4 December 1998): reprinted at <[http://www.icj-cij.org/icjwww/idocket/iec/iecjudgment\(s\)/iec_judgment_981204_frame.htm](http://www.icj-cij.org/icjwww/idocket/iec/iecjudgment(s)/iec_judgment_981204_frame.htm)>

⁵⁸ This has been labelled as a criticism of the value of the concept itself by Strange: S. Strange, "Cave! hic dragones: A Critique of Regime Analysis" in S. Krasner (ed.), *International Regimes* (Ithaca: Cornell University Press, 1983) p.337 at pp.342-344; a useful summary of the basic definitional positions is given by Haggard and Simmons: S. Haggard and B.A. Simmons, "Theories of International Regimes" (1987) 41 *International Organization* p.491 at pp.493-496

have been advanced by a number of publicists to indicate the extent of the concept. The definition most often referred to is that of Krasner. He defines regimes as "sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations".⁵⁹ This definition therefore encompasses both formal international agreements as evidence of the formation of regimes, as well as more informal understandings, that could be included within the context of "implicit principles" giving rise to "expectations". Krasner gives no examples of informal principles giving rise to regimes, but does indicate that short-term calculations of interest do not qualify as a regime, even where such evaluations have to take place repeatedly.⁶⁰

If Krasner's definition lies in the "middle ground" of definitions of regimes in terms of its width of coverage⁶¹, other definitions are far wider in their scope. Puchala and Hopkins state that "a regime exists in every substantive issue-area in international relations where there is discernibly patterned behaviour".⁶² This definition is necessarily very wide and clear encompasses situations where

⁵⁹ Krasner, *supra* note 52, p.2

⁶⁰ For example, reassessments of relative position by States in a balance-of-power situation would not amount to a regime: Krasner, *supra* note 52, p.3

⁶¹ This observation is made by Haggard and Simmons: Haggard & Simmons, *supra* note 58, p.493

⁶² Puchala & Hopkins, *supra* note 54, 54, p.63

international conventions exist, as well as customary international law and even negotiations if an agenda for negotiation exists. Such width has been the subject of quite forceful criticism. While a regime will certainly give rise to patterned behaviour on the part of States, as a regime represents a cooperative solution entered into between States, it does not follow that *all* instances of patterned behaviour disclose regimes. Further, there are questions as to the utility of a definition that is so wide that it encompasses all international interaction except manifestly chaotic situations. If regime theory covers every situation, there are questions as to whether it can be used as a predictive or inductive tool in the context of institutionalised State cooperation, which is chiefly manifested in international agreements.⁶³

Oran Young defines regimes as "social institutions governing the actions of those interested in specifiable activities (or accepted sets of activities)" and international regimes were "those pertaining to activities of interest to members of the international system".⁶⁴ Young notes that regimes function as authoritative social conventions, and can acquire a "life of their own". That is to say, they need not completely reflect the existing viewpoint of a State party on an issue addressed by the regime. He believes regimes have a normative character, but like all social

⁶³ Rittberger, *supra* note 70, pp.8-9; see also note 58.

⁶⁴ Young, *supra* note 52, p.93

institutions there will be a certain degree of deviance by the participants.⁶⁵ While the coercion of powerful States may have a role in the formation of regimes, Young also notes that over time, the normative impact of various regimes in the international community grows. The need for coercion is gradually replaced by the normative effect of other regimes, which encourage compliance with existing and the formation of new cooperative arrangements.⁶⁶

Among the more useful approaches is that of Keohane, who places a purpose-oriented spin to defining regime theory. He indicates that regimes are "a way to understand international co-operation, defined as co-ordinated mutual adjustment of states' policies yielding benefits to participants".⁶⁷ He also counsels against wrestling with "implicit" regimes, that is to say those deduced entirely from State behaviour but not evidenced by any formal or recognisable agreement.⁶⁸ Such an approach easily encompasses international agreements and accords with the idea in international law that while a convention or treaty is a source of international law, it operates within the general framework of the international legal system. It also mirrors the strong preference in international law for international treaties and

⁶⁵ Young, *supra* note 52, pp.94-95

⁶⁶ Young, *supra* note 52, pp.102-103

⁶⁷ R.O. Keohane, "The Analysis of International Regimes: Towards a European-American Research Programme" in V. Rittberger (ed.), *Regime Theory and International Relations* (Oxford: Clarendon Press, 1993) p.23

⁶⁸ Keohane, *supra* note 67, pp.26-28

conventions as evidence of its content - a preference easily attested to by those attempting to establish the existence of an international norm based entirely on custom.⁶⁹

In this context, a useable and clear definition of the term "regime" is essential. Logically, the most profitable definition to be used ought to exhibit two characteristics. Firstly, that it has reasonable widespread acceptance by international relations scholars, to ensure that any analysis undertaken based upon regime theory at least commences from a starting point that most theorists would consider reasonable. Secondly, that it is of utility to an international lawyer, to permit the analysis as a whole to have cohesion, rather than being two entirely separate views of comparison that bear no relation to each other. Robert Keohane's definition is perhaps the most practical, from the perspective of complementing an essentially legal analysis, and is buttressed by the fact that it is built upon the earlier definition of Krasner, while eliminating the indeterminism that Krasner's definition did not seriously address. Accordingly, it is the most appropriate to the task at hand.

None of the above discussion should permit the conclusion that regime theory, in its

⁶⁹ A similar point is made by Hurrell who notes "[t]he apparently growing stress on explicit, persistent, and connected sets of rules brings regime theory and international law much closer together": A. Hurrell, "International Society and the Study of Regimes: A Reflective Approach" in V. Rittberger (ed.), *Regime Theory and International Relations* (Oxford: Clarendon Press, 1993) p.49 at p.54

various manifestations, has universal acceptance among political scientists. For example, Strange has advanced a number of quite trenchant criticisms of the principles underpinning regime theory. These have included notions that regime theory is an essentially North American construct that has arisen as a reaction to the decline of American power⁷⁰, that the levels of imprecision in the definition of basic concepts within regime theory are at the very least limiting to its usefulness as a tool of international relations⁷¹, and that regime theory provides a State-centred and static view of world.⁷² The concentration on States tends to ignore the influence on non-State actors, such as NGOs, transnational corporations or international organizations, or to take into account the differences between States in terms of their own internal structures.⁷³ These criticisms are not without merit, especially given the multiplicity definitional positions around which regime theory is built. However, international law is both imprecise and State-centred, but such

⁷⁰ Strange questioned in 1982 whether regime theory was in fact a "passing fad": Strange, *supra* note 58, pp.338-342. This phrase would appear inappropriate given the continued use of the terminology over a decade and a half later in American and European literature: For example see V. Rittberger, "Research on International Regimes in Germany: The Adaptive Internationalization of an American Social Science Concept" in V. Rittberger (ed.), *Regime Theory and International Relations* (Oxford: Clarendon Press, 1993) p.3

⁷¹ See the discussion at note 58.

⁷² Strange, *supra* note 58, pp.346-351.

⁷³ Anne-Marie Slaughter Burley has noted that a focus on regimes fails to take account of the internal difference between States that may circumscribe State responses, and cites the example of the lack of armed conflict between democratic States in the modern era as illustrating this deficiency: Slaughter Burley, *supra* note 41, pp.225-226

difficulties do not preclude discussion and analysis of a broad range of issues within the discipline. Limitations necessarily exist in any model of human (or State) behaviour, and as considered above, international law and international relations are essentially based around explanations of and rules constraining such behaviour. What is important is not to be constrained by the limitations inherent within the use of a tool of international relations, but rather to take what is useful and employ it where appropriate.⁷⁴

The usefulness of regime theory to the present task is relatively obvious. In each of the situations under consideration, the problem of management of marine living resources in a harsh and extremely fragile environment is faced by a number of State actors. Their responses to this problem form the subject matter of the comparison being undertaken. Accordingly, any tool which assists in explaining how that response was formulated, and what factors were relevant in its formulation must be of assistance in understanding the scope and nature of that response. Regime theory may therefore be useful in explaining differences in the procedures and principles underlying marine living resource managements systems, when those systems were designed to deal with similar problems in managing polar resources.

⁷⁴ To adopt some regime theory models would be necessarily fatal to the work of an international lawyer, given that some regime theorists reject the notion that international law has any role in the prediction of State behaviour: for example see A.A. Stein, "Coordination and Collaboration: Regimes in an Anarchic World" in S.D. Krasner (ed.), *International Regimes* (Ithaca: Cornell University Press, 1983) p.115 at pp.115-120

Epistemic Communities

A more recent phenomenon in political science discourse has been the development of the notion of "epistemic communities" as an influence on State behaviour. Peter Haas, who has been influential in the development of the concept defines an epistemic community as "a network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy relevant knowledge within that domain or issue area".⁷⁵ Together with this notion of commonality of their professional training, epistemic communities have other defining characteristics. They exhibit commonality of belief as to how their expertise ought to be used in the tackling of policy problems. That is to say, they have consistent approaches to the addressing of problems and a belief their discipline can provide a valuable contribution to the identification and resolution of problems.⁷⁶

The importance of epistemic communities to international relations is based upon their influence on policymakers within States. The notion is that many international problems require not merely cooperative international solutions between States, but

⁷⁵ P.M. Haas, "Introduction: Epistemic Communities and International Policy Coordination" (1992) 46 *International Organization* p.1 at p.3

⁷⁶ Haas further breaks this into four more specific characteristics: (1) shared normative beliefs which provide a basis for actions by community members; (2) shared causal beliefs; (3) shared notions of the validity of methods used in the evaluation of their knowledge; and (4) a common policy enterprise: Haas, *supra* note 75, p.3

a level of technical support to provide a solution. Policymakers often know what objectives that they would like to achieve within an international regime, but lack the requisite knowledge to give effect to the desired objective. Decisionmakers would then be obliged to seek assistance from those professionals with the experience and knowledge to provide workable solutions. Naturally from this, it follows that scientific and other technical advisors are in a position to command great influence in manner in which State policies are pursued.⁷⁷ Further, by virtue of their knowledge, such advisors may be able to alert policymakers to previously unforeseen problems that also require solutions. When advisors function together, in an epistemic community, it is theorised that their potential influence on the decision-making process is greatest.⁷⁸ Adler and Haas put the basic premise simply as:

...the greater the extent to which epistemic communities are mobilized and are able to gain influence in their respective nation-states, the greater is the likelihood that these nation-states will in turn exert power on behalf of the values and practices promoted by the epistemic community and this will help in their international institutionalization.⁷⁹

⁷⁷ Barnes and Edge state that "in modern societies, science is near to being *the* source of cognitive authority: anyone who would be widely believed and trusted as an interpreter of nature needs a licence from the scientific community." See B. Barnes & D. Edge, "General Introduction" in B. Barnes & D. Edge (eds), *Science in Context: Readings in the Sociology of Science* (Milton Keynes: Open University Press, 1982) p.1 at p.2

⁷⁸ Haas, *supra* note 75, pp.12-16

⁷⁹ E. Adler & P.M. Haas, "Conclusion: Epistemic Communities, World Order, and the Creation of a Reflective Research Program" 46 *International Organization* p.367 at pp.371-372

An epistemic community can be distinguished from a mere professional association, or interest group in a number of ways. Firstly, an epistemic community must have a shared pool of knowledge. The members must be trained in the same field, although there is no restriction as to what that field may be.⁸⁰ While there may be a tendency to assume that all epistemic communities that have been the subject of study have been based on scientific knowledge in highly specialised areas, the physical sciences need not be the only disciplines in which an epistemic community might form.⁸¹ There is no impediment on the creation of an epistemic community in the social sciences.⁸²

This common pool of knowledge distinguishes an epistemic community from an interest or lobby group. Such interest groups have commonality of views on policy objectives but not on the knowledge upon which such views are based. While an interest group may be able to exert pressure on decisionmakers to adopt, their ability to influence change differs in its nature from that of an epistemic community. An epistemic community, by virtue of its expertise can not merely

⁸⁰ Haas, *supra* note 75, pp.17-18. Collins explores the notion that professionals active in particular fields do tend to coalesce into epistemic communities (or in the article in question, "Invisible Colleges") in H.M. Collins, "Tacit Knowledge and Scientific Networks" in B. Barnes & D. Edge (eds), *Science in Context: Readings in the Sociology of Science* (Milton Keynes: Open University Press, 1982) p.44 at pp.44-61

⁸¹ This is borne out by the cross-section of disciplines that have been identified as involving epistemic communities: *infra* page 38.

⁸² See Haas, *supra* note 75, pp.16-17

influence policymakers to change position, but can also influence the manner in which the changes will be achieved. An interest group will not normally be able to do this, nor necessarily wish to. The difference stems from the fact the influence of an epistemic community is founded on its technical skill and understanding of the issues, whereas an interest group may use political or electoral pressure and lacks the legitimacy to advise on the content of regimes.⁸³

Secondly, epistemic communities can be distinguished from professional associations. Professional associations certainly have a common pool of knowledge and training, but differ from epistemic communities in that they do not necessarily share the same values underlying the application of that knowledge. Professional associations can harbour great differences in the manner in which their expertise ought to be used.⁸⁴ Such internal differences within a professional association can severely limit the amount of influence that association can wield. If consulted for advice, the responses received may be vastly different or even contradictory, therefore the association can have at best a marginal role in policy creation and

⁸³ See Haas, *supra* note 75, p.18. In the context of whaling, Peterson notes that whale environmentalists could not be regarded as an epistemic community due to their lack of common causal beliefs and the range of backgrounds from which they come: M.J. Peterson, "Whalers, Cetologists, Environmentalists and the International Management of Whaling" (1992) 46 *International Organization* p.147 at pp.154-155

⁸⁴ Sebenius refers to this as a "transnational group of 'believers'": J.K. Sebenius, "Challenging Conventional Explanations of International Cooperation: Negotiation Analysis and the Case of Epistemic Communities" (1992) 46 *International Organization* p.323 at p.325

application. An epistemic community has commonality of view on principles for the resolution of problems.⁸⁵ If consulted to advise on an issue, the responses of members of an epistemic community will be consistent and based upon similar basic assumptions, regardless of who within the community is approached.

Commonality of principled beliefs can be difficult to achieve, especially in emerging technical fields. Epistemic communities are therefore often sub-groups within larger professional associations. For example, there may be no epistemic community of biologists or economists, there may well be epistemic communities of fisheries biologists or post-Keynesian economists.⁸⁶ There also seems to be no evident limit to the potential subject areas of expertise providing a core around which an epistemic community might grow. A cross-section of recent investigations of epistemic communities could include subjects as diverse as banking-regulation⁸⁷, nuclear arms control⁸⁸, provision of international food aid⁸⁹, regional environmental protection⁹⁰ and whaling.⁹¹

⁸⁵ Haas, *supra* note 75, p.19

⁸⁶ Haas, *supra* note 75, p.19

⁸⁷ E.B. Kapstein, "Between Power and Purpose: Central Bankers and the Politics of Regulatory Convergence" (1992) 46 *International Organization* p.265

⁸⁸ W.J. Drake and K. Nicolaïdis, "Ideas, Interests and Institutionalisation: 'Trade in Services' and the Uruguay Round" (1992) 46 *International Organization* p.37

⁸⁹ R.F. Hopkins, "Reform in the International Food Aid Regime: The Role of Consensual Knowledge" (1992) 46 *International Organization* p.225

Epistemic communities need not be restricted by national boundaries or affiliations. This is particularly so in relatively small and discrete scientific fields, where experts from States around the world interact at international conferences and through familiarity with and participation in published scholarship in the field.⁹² Rather than diminishing the influence of an epistemic community, a transnational character will strengthen its ability to manipulate policy. State advisors can point to similar advice and action upon that advice in other States to bolster the legitimacy of their own advice. In the formation of international regimes, this is particularly important, since if States receive consistent and similar advice, there is a greater likelihood of agreement between States, and based upon the principles advocated by the community's State advisors.⁹³

Theories of epistemic communities can dovetail neatly with regime-based explanations of international behaviour. Regime theory posits the formation of

⁹⁰ P.M. Haas, "Do Regimes Matter? Epistemic Communities and Mediterranean Pollution Control" (1989) 43 *International Organization* p.377

⁹¹ Peterson, *supra* note 83, p.147

⁹² For example, Haas identified an epistemic community of United Nations Environment Programme (UNEP), Food and Agriculture Organization (FAO), World Health Organization (WHO) officials who, together with State government officials, lobbied for greater environmental protection of the Mediterranean: Haas, *supra* note 90, p.384

⁹³ Such an argument is put by Sebenius in terms of negotiation analysis. He takes the view that epistemic communities greatly assist in the definition of State interests and the coordination of objectives increasing the "zone of possible agreement" between negotiating parties: Sebenius, *supra* note 84, p.325 & p.354

regimes out of mutual convenience, yet cannot explain the persistence of a regime even when the value of maintaining the regime to the State has diminished over time. Haas argues that knowledge-based factors, that is to say the work of an epistemic community, may also be important in regime formation and regime maintenance.⁹⁴ As such, a State may be advised to continue to support a regime on the basis of advice from community members, even though the regime no longer represents the economic or political position of interest for the State.⁹⁵

All of this is not to say that notions of epistemic communities have avoided all criticism. It has been argued that congruency of view, particularly in terms of scientific or economic analysis of data and effective responses to such data, is not easy always to obtain.⁹⁶ This suggests that where epistemic communities do exist

⁹⁴ P.M. Haas, "Epistemic Communities and the Dynamics of International Environmental Co-Operation" in V. Rittberger (ed.), *Regime Theory and International Relations* (Oxford: Clarendon Press, 1993) p.168 at p.169. Regime theorists have tried to address this difficulty through consideration of the impact of inertia against change: Hurrell, *supra* note 69, p.55. While useful in certain situations, it is difficult to see how inertia could explain all situations where regimes persist beyond their originating conditions.

⁹⁵ Although Haas has concentrated on the history of the Mediterranean Action Plan as his demonstration example of a regime influenced by an epistemic community, it is by no means the only one: Haas, *supra* note 94, pp.168-169 and pp.191-199; see also P.M. Haas, "Do Regimes Matter? Epistemic Communities and Mediterranean Pollution Control" (1989) 43 *International Organization* p.377. Another might be the continuing active participation of Belgium in the Antarctic Treaty System, when Belgium has not been physically active in the region for over 30 years.

⁹⁶ A.S. Yee, "The Causal Effects of Ideas on Policies" (1996) 50 *International Organization* p.69 at pp.86-88

they have great influence, but they are rare creatures indeed. Further, Yee has noted that policymakers need not be completely reliant upon the advice of the epistemic community, and may have access to the same ideas and beliefs directly - at least where the concepts can be expressed in a manner that does not require specialist knowledge.⁹⁷ Essentially, a "good idea" that has been recognised as such by an epistemic community, has objective merit that can be recognised even by policymakers.⁹⁸

In response to these criticisms, direct access to ideas does not dilute the influence of an epistemic community, but rather reinforces it. A policymaker who is impressed by the objective value of a particular idea is likely to act the implementation of that idea where it has the support of experts in the field. The epistemic community can confirm the policymaker's analysis, and legitimise it with the authority of their expertise. In answer to the criticism that epistemic communities are rare, that of itself does not mean that where they do exist they are not influential, nor that they may not be found in those having expertise in Arctic or Antarctic matters.

Within this work, the role and apparent impact of epistemic communities will be considered. The effective management of marine living resources requires complex

⁹⁷ Yee treats epistemic communities as a subset of approaches to what he describes as "institutional ideation": Yee, *supra* note 96, p.87

⁹⁸ J. Goldstein, *Ideas, Interests and American Trade Policy* (Ithaca: Cornell University Press, 1993) p.283; Yee, *supra* note 96, p.87

and detailed scientific advice. This creates a potentially influential role for those scientists charged with the provision of stock management data, and if they form part of a cohesive epistemic community, then their impact upon regime formation and maintenance could be very significant indeed.⁹⁹ Certainly, the presence of an epistemic community could be a relevant factor in the selection of an appropriate mode of marine living resource management, and identification and influence of possible epistemic communities is significant.

Stakeholder Satisfaction - Exploitation

While State satisfaction based around regime formation is relatively complex, assessing the satisfaction of those interests wishing to exploit marine living resources is relatively simple. At the most basic level, it is the continued long-term availability of harvested stocks. If a harvested stock disappears or its average annual biomass drops to a point where the harvest must be reduced to allow a stock to recover during the currency of a management system, exploiters would be loathe to regard the regime as successful. A satisfactory management system would ensure that reliable economically viable quantities of the targeted stock be available on a regular basis.

However, the needs of exploiters may be more complex. For example, the needs of

⁹⁹ Peterson has already undertaken a study of whether epistemic communities influence decision-making under the Convention for the Regulation of Whaling: Peterson, *supra* note 83, p.147

a multinational corporation maintaining a large commercial fishing fleet may differ from those of a single vessel owner-operator, or from fish processors, or from small fishing communities, be they subsistence fishing communities or commercially-oriented. Similarly, while all these groups in theory would be satisfied with the existence in abundance of an exploited species, there may still be dissatisfaction with levels or means of participation provided under the regulatory management system. Commercial operators do not just want to catch fish, they want to make a profit from catching fish. If the regulatory regime permits too many vessels to exploit a limited stock, the participants will either overfish and deplete the stock or fail to make a profit.¹⁰⁰ Small fishing communities may wish to have a viable "social fishery" which can allow the maintenance of their lifestyle as opposed to an "economic fishery" which produce the most efficient yield but might preclude the participation in the fishery of single vessel operators.¹⁰¹ Indigenous communities may wish to take particular species not because of dietary or economic reasons, but rather because of the cultural significance of the catch itself.¹⁰²

¹⁰⁰ In a general discussion on the use of common property resources, this was the core assertion of Garrett Hardin in his seminal work *The Tragedy of the Commons*: G. Hardin, "The Tragedy of the Commons" (1968) 162 *Science* p.1243

¹⁰¹ Matthews makes the comparison between social and economic fisheries in assessing Canadian east coast fisheries management from a "values perspective": D.R. Matthews: "'Constructing' Fisheries Management: A Values Perspective" (1995) 18 *Dalhousie Law Review* p.44 at pp.49-53

¹⁰² This can be seen in the efforts in the Western Canadian Arctic to reinstate the Bowhead Whale hunts, which are of profound cultural significance to the Inuvialuit: see generally M.M.R. Freeman, E.E. Wein & D.E. Keith, *Recovering Rights: Bowhead Whales and Inuvialuit Subsistence in the*

Consequently, measures of success from an exploitative perspective will be directed towards the relative needs of the particular stakeholders affected. This will require not merely statistical data on the size of the biomass of particular species within the area under management, but statements of support or otherwise for the regime by stakeholders. While this will limit the breadth of comparison, it will not preclude considerations of the relative effectiveness of the regimes in issue.

Stakeholder Satisfaction - Environmental Protection

The final category for the measurement of success is drawn from those who have an environmental rather than exploitative interest in the management area. In the past three decades, an increasing number of individuals and NGOs have sought to take an active interest in the state of the world's environment. Such concern has been reflected at an international level as far back as 1972, with the Stockholm Declaration on the Human Environment¹⁰³, and subsequently in a range of other international instruments.¹⁰⁴ The number of environmental NGOs has risen

Western Canadian Arctic (Edmonton: Canadian Circumpolar Institute, 1992)

¹⁰³ *Declaration on the Human Environment*, adopted at Stockholm 16 June 1972: reprinted in 11 ILM 1416 (1972)

¹⁰⁴ For example there are some 143 international agreements on the *UNEP Register of International Treaties and other Agreements in the Field of the Environment* including the Convention on Biological Diversity, the London Convention on the Prevention of Marine Pollution by the Dumping of Wastes and other Matter, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and the Vienna Convention on the Protection of the Ozone Layer with its Montreal Protocol. All of the instruments on the *Register* are directed, at least in part, at substantial protection of the natural environment: <<http://sedac.ciesin.org>

markedly since 1972, and their membership is large and spread through a wide spectrum of communities and interests.

This outgrowth of interest in the environment has not necessarily been motivated out of a concern to derive economic benefit from particular natural resources. Most environmental NGOs, while generally supporting sustainable agricultural or economic practices, have no economic interest in the preservation or protection of the environment. Similarly, some environmental obligations incurred by States, such as those under the Biodiversity Convention¹⁰⁵, do not pertain to direct economic interests. Biodiversity protection goes to protecting the range of flora and fauna, not merely those aspects of the natural environment which are harvested or upon which a monetary or even aesthetic value can be placed.

The concern manifested by these bodies, or by States meeting their international obligations means that these bodies would have an interest in the success or failure of a living resource management regime. The interest would not be derived from direct participation in the exploitation of resources, or even in the management process, yet it would be an interest still worthy of some consideration in this context.

[/pidb/register/register.html](#)>

¹⁰⁵ *Convention on Biological Diversity*, done at Rio de Janeiro on 5 June 1992, entered into force 29 December 1993: reprinted at 31 ILM 818 (1992)

The measure of success for this lobby bears some similarity with success for an economic participant. If a resource is depleted and placed under threat, then environmental damage at a general level has occurred, and the regime could not be said to have succeeded - in the same way as those interested in the economic exploitation of the depleted resource would attest to a lack of success. However, environmental damage to any part of the ecosystem, regardless of its economic value, would not denote success for environmental interests, whereas if the key exploited stock were unaffected, exploiters would be reluctant to say the regime had proved inadequate.

PART TWO

INTERNATIONAL LAW AND MODES OF MARINE LIVING RESOURCE MANAGEMENT

Introduction

Much of the discussion of the international law of fisheries, and the exploitation of marine living resources generally has tended to focus upon questions of maritime jurisdiction as opposed to issues relating to principles underlying the management of those resources. The existence of this emphasis should not be surprising as it is reinforced by historical and jurisprudential factors that mitigate against any alternative approach.¹ This is not to suggest that questions of jurisdiction are not relevant to duties in respect of management, but rather discussions of the former have largely subsumed the latter.

In the present situation, jurisdiction issues are very much subsidiary as what is being examined are existing management arrangements, rather than those which may prove to be possible if jurisdictional concerns could be effectively addressed.

¹ In essence, historically fishing was too inefficient and on too small a scale to require management, and in terms of the law, jurisdictional issues have provided the legitimation of individual or cooperative State action in the management of fisheries. Both of these factors will be explored below.

In an existing regime, jurisdictional issues have already been considered and dealt with. Management of stocks cannot take place without, at the very least, a decision-making structure determining (or at the very least recommending) what will be permissible activities. This assumes that fundamental questions of who is authorised to undertake exploitation activities and possibly who may enforce conservation measures have been settled. Without the resolution of jurisdictional problems, it is unlikely that participating States would accept the legitimacy of a decision-making body, simply because they would have differing views on what representation such a body ought to have, and the scope of its mandate to enforce conservation measures.

However, that is not to suggest jurisdictional issues are irrelevant to a functioning living resource management system. The extent of State jurisdiction will usually circumscribe the role of participants within the system. International law gives States responsibility to assert their jurisdiction over particular areas of maritime space, or vessels flying their flag², and international management regimes will reflect these principles in the allocation of responsibility in the enforcement of

² This can be traced back to the Grotian distinction between *dominium* (asserting jurisdiction over an area) and *imperium* (asserting jurisdiction over individuals). Accordingly, fisheries could be taxed if taxes were levelled by rulers on their subjects who fished, not on the fisheries themselves: H. Grotius (tr. R. van D. Magoffin), *The Freedom of the Seas* (New York: Oxford University Press, 1916) p.36; see also D.P. O'Connell (with I.A. Shearer (ed.)), *The International Law of the Sea* (Oxford: Clarendon Press, 1982) Vol.1, pp.14-18

management decisions. For example, the Convention for the Conservation of Antarctic Marine Living Resources provides for flag State enforcement of conservation measures³, rather than some other enforcement arrangement. This can be explained by noting that flag State enforcement is consistent with international law⁴, and while individual States could agree to widen the reach of the enforcement arrangements, it is most simple to utilise existing and widely accepted jurisdictional arrangements. Accordingly, jurisdictional questions are often relevant in the delimitation of the structure of a management regime.⁵

³ Article XXI, *Convention for the Conservation of Antarctic Marine Living Resources*, done at Canberra 20 May 1980: reprinted 34 ILM 67 (1980) (hereafter referred to as CCAMLR). This arrangement is by no means atypical, and in fact represents the norm in international fisheries and marine living resource conventions. For example see Article XVIII, *Convention on Future Cooperation in the Northwest Atlantic Fisheries*, done at Ottawa 24 October 1978: reprinted in Cmnd. 7569; Article IX, *International Convention for the Regulation of Whaling*, done at Washington 2 December 1946: 161 UNTS 72; however compare the rather limited cooperative enforcement procedures used in more recent arrangements: Article VI, *Nuie Treaty on Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific Region*, done at Honiara 9 July 1992, entered into force 20 May 1993: reprinted in AustTS 1993 No.31; Article XI, *Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, done at Washington DC, 16 June 1994: reprinted in 34 ILM 67 (1995).

⁴ See C.J. Colombos, *The International Law of the Sea* (London: Longmans, 1967) pp.296-297

⁵ The 1982 Law of the Sea Convention actually raises management issues in the context of expounding on the limits and nature of jurisdictional control over the exclusive economic zone (EEZ): see Part V, *United Nations Convention on the Law of the Sea*, done at Montego Bay 10 December 1982: reprinted in 21 ILM 1261 (1982).

The development of management principles in international law cannot therefore be easily separated from the development of jurisdictional principles in the law of the sea, and consideration of the former necessitates at the minimum an awareness of the latter to provide complete understanding. What follows is therefore a brief examination of the development of the international legal underpinnings of marine living resource management, with an eye to contemporaneous developments in the development of the principles of State sovereignty and jurisdiction within the law of the sea.

That said, before any useful comparison of marine living resource regimes can take place, it is essential to first classify and identify the content of the different types of regimes that exist. This can be most effectively achieved by charting the development in international law of the various management principles. Such an approach has the advantage of not merely demonstrating the contemporary contrasts between the various modes identified, but can highlight the different antecedents of the management systems further exhibiting the reasons for their selection. According the historical development and contemporary content of the three approaches to management follow below.

CHAPTER TWO

LIVING RESOURCE MANAGEMENT: THE MAXIMUM YIELD MODEL

International Law and Fisheries Management to UNCLOS III

Background: Fisheries Management Theory prior to 1945

Prior to the 20th Century, legal scholars gave little consideration to the question of the fisheries management within the law of the sea. Such an omission is not surprising, and can be explained when one considers the nature of marine exploitation in historic times, and the legal concepts which were being wrestled with in these times. Roman jurists were divided as to the legal nature of the sea and its produce as being either *res communis* or *res nullius*, with more tending to the latter view than the former.¹ In terms of rights to fish, both results are essentially the same, in that if the sea is owned by no one its resources can be exploited by individuals with the same confidence if it was common property

¹ For example Ulpian and Marcianus took the view that the sea was free and open to all, while Justinian relied on Celsus to assert that the seas were common to all: for example see H. Grotius (tr. R. van D. Magoffin), *The Freedom of the Seas* (New York: Oxford University Press, 1916) pp.31-32; C.J. Colombos, *The International Law of the Sea* (London: Longmans, 1967) p.62; D.M. Johnston, *The International Law of Fisheries: A Framework for Policy Oriented Inquiries* (New Haven: New Haven Press, 1987) pp.303-305; P.T. Fenn, "Justinian and the Freedom of the Sea" (1925) 19 *American Journal of International Law* p.716

owned by all. Hugo Grotius in his work *Mare Liberum* asserted that the seas were free², and that it was improper for one State to prevent the nationals of another State fishing upon it.³ This engendered the great debate between British jurists, such as Selden and Welwood⁴, who rejected notions of freedom of the seas, and Grotius and his supporters. The notion of *mare liberum* eventually triumphed over *mare clausum*, although was modified to permit a State to assert its jurisdiction over the waters immediately adjacent to its coast.⁵

The triumph of Grotian perspective of the freedom of the seas is well known and

² Grotius' work was written in response to the assertion of Spanish and particularly Portuguese claims to exclusive use of the Indian and Pacific Oceans arising out of the Papal Bull of 1493. He also took the opportunity to criticise Venetian and Genoese practice with respect to claims over seas proximate to these States: Grotius, *supra* note 1, *passim*; see also D.P. O'Connell (with I.A. Shearer (ed.)), *The International Law of the Sea* (Oxford: Clarendon Press, 1982) Vol.1, p.9

³ Grotius, *supra* note 1, p.32; see also Johnston, *supra* note 1, p.306

⁴ Selden wrote *Mare Clausum* published in 1635, and Welwood wrote *An Abridgment of all the Sea-Lawes* published in 1613. They were by no means the only British jurists who advanced this position in the first half of the 17th Century: see O'Connell, *supra* note 2, Vol.1, pp.4-5; see also Johnston, *supra* note 1, pp.166-171

⁵ Bynkershoek in 1703 expounded the view that a State ought to have jurisdiction over those seas which were within the range of a cannon shot of shore, as a State could effectively assert its will over these seas: T.W. Fulton, *The Sovereignty of the Sea* (Edinburgh: William Blackwood & Sons, 1911) pp.555-556. It might be said that this was a logical development of the synthesis of the earlier doctrine of *mare adiacens* and *mare liberum*: Johnston, *supra* note 1, pp.160-166

need not be echoed here.⁶ However it is significant to note that an absolute freedom of the seas necessarily permits an absolute freedom in the way the sea is utilised. The freedom to fish anywhere upon the ocean necessarily removes the potential for the regulation of how and upon what basis fishing should take place. This absence of management was based upon the traditional assumption that the nature of the sea itself prevented any need for its management. Scholars viewed the sea as inexhaustible.⁷ Unlike rivers, streams and lakes which could become polluted or have their fisheries depleted⁸, the sea was believed to be too vast for overuse⁹, and indeed this was an argument for urging that the sea be free for the

⁶ There is a tremendous amount of literature on the *mare liberum* versus *mare clausum* debate. The following references are intended to be no more than a brief though necessarily representative sample of it: R.P. Anand, *Origin and Development of the Law of the Sea* (The Hague: Martinus Nijhoff, 1982) pp.77-103; O'Connell, *supra* note 2, Vol.1, pp.9-18; G.W. Paulsen, "An Historical Overview of the Development of the Uniformity of International Maritime Law" (1983) 57 *Tulane Law Review* p.1065 at pp.1069

⁷ For example Pufendorf, Vattel, and Grotius all subscribed to the notion that the seas were inexhaustible: see E. de Vattel, *The Law of Nations or the Principles of International Law*, (New York: Oceana, 1964) tr. C.G. Fenwick from 1758 edn., pp.106-107; see also Johnston, *supra* note 1, pp.166-172; P.G.G. Davies & C. Redgwell, "The International Legal Regulation of Straddling Fish Stocks" (1996) 67 *British Yearbook of International Law* p.199 at p.218

⁸ Grotius distinguished ponds, rivers and lakes, all of which were capable of being possessed from the sea, which was not capable of possession: Grotius, *supra* note 1, p.33

⁹ Not all scholars prior to the 19th Century subscribed to this view. Welwood was concerned at the overharvesting of East Anglian fisheries, and during the reign of Edward III a Royal Commission was conducted into the damage caused by trawling: A.P. Daggett, "The Regulation of Maritime Fisheries by Treaty" (1934) 28 *American Journal of International Law* p.693 at p.703

use of all.

The premise that the seas contained an inexhaustible volume of fish that could be plundered by fishermen without restriction was not seriously challenged until the 19th Century. Fishing techniques, the limitations of sailing vessels in terms of their range and operations, the lack of refrigeration facilities all mitigated against the type of concentrated exploitation which could significantly impact upon stock numbers, and allowed the fiction of inexhaustibility to continue.¹⁰

Through the course of the 19th Century, it was becoming increasingly apparent that overharvesting of fisheries and other marine creatures could detrimentally impact upon stocks. The depredation of sealing grounds was observed from the beginnings of the century¹¹, and it was in the context of seals that some the first steps toward positive management of marine living resources occurred. For example, in 1876 there was agreement between Britain, Germany, Norway, the Netherlands and Sweden to designate closed seasons for seals in the vicinity of Eastern Greenland

¹⁰ Carroz notes that this misconception that the most of the seas were inexhaustible given the level of exploitation that was possible still existed as late as 1955: J.E. Carroz, "Les Problèmes de la Pêche a la Conférence de Droit de la Mer et dans la Pratique des États" (1980) 84 *Revue Générale de Droit International Public* p.705 at p.706

¹¹ See G.E. Fogg, *The History of Antarctic Science* (Cambridge: Cambridge University Press, 1992) pp.38-42

and Jan Mayen.¹² Through the century, a number of small scale, most bilateral fisheries conventions were entered into, most of which were concerned with formalising historic arrangements for mutual fishing rights between people in border areas.¹³ More significantly however, in 1881 conservation concerns and increasing levels of fishing activity led to a major conference on the fisheries of the North Sea. This was attended by all the North Sea powers, and from the Conference a Convention¹⁴ emerged in which States agreed to a range of simple policing and enforcement measures within waters within 3 miles of the coast.¹⁵ The delegates were principally concerned with enforcement issues, but these had been raised by perceived overfishing close to coasts. Indeed some delegates proposed what would have amounted to conservation measures in modern terms, but these were not adopted. The German delegate suggested that certain areas should be set aside to provide shelter for the development of juvenile fish, and that there be regulation of the size and construction of trawl nets. These proposals were not acted upon, but

¹² A translated text of the Norway/Sweden regulations giving effect to the agreement is reprinted in: 70 SP p.368 and p.513 & 73 SP p.282 and p.708; the concurrent British legislation is found at 38 Vict. c.18; see Fulton, *supra* note 5, p.695

¹³ A detail summary of these arrangements is given by Daggett: Daggett, *supra* note 9, pp.693-717

¹⁴ North Sea Fisheries Convention (Belgium-Denmark-France-Germany-Great Britain-The Netherlands), done at The Hague 6 May 1882: reprinted in 73 SP p.39. The Convention was added to by the same States (except France) on 18 November 1887: reprinted in 79 SP p.894; see Fulton, *supra* note 5, pp.631-649

¹⁵ Fulton, *supra* note 5, pp.632-649; Johnston, *supra* note 1, p.178; Colombos, *supra* note 1, pp.408-409

neither was a French proposal that it should be expressly stated that beyond 3 nautical miles fishing could take place in any season and by any means.¹⁶

The concern exemplified by the German delegate at the 1881 Conference on the North Sea was not so easily dismissed. The perception that the resources of the sea could become threatened began to attract more adherents, and in time this led European States to act to investigate whether this were really so.¹⁷ In 1902, following a meetings in Stockholm and Christiania¹⁸ the previous year, a coalition of European States established the International Council for the Exploration of the Sea (ICES). This body was charged to, *inter alia*: "promote and encourage research and investigations for the study of the sea particular those relating to the living resources thereof."¹⁹ Although set up on a largely informal basis initially, ICES

¹⁶ Fulton, *supra* note 5, pp.636-637

¹⁷ A conference to this effect was held under the auspices of the British National Sea Fisheries Protection Association in 1890, and attended by representatives from Belgium, France, the Netherlands, Germany, Denmark and Spain: Fulton, *supra* note 5, pp.706-707

¹⁸ Christiania was renamed Oslo in 1924.

¹⁹ Article I, *Convention for the International Council for the Exploration of the Sea* done at Copenhagen 12 September 1964: reprinted in 7 ILM 302 (1968). The 1964 ICES Convention formalises the "Gentleman's Agreement" under which the organization had been operating since its establishment in 1902: see P. Birnie, *The International Regulation of Whaling: From Conservation of Whaling to the Conservation of Whales and Regulation of Whale-Watching* (New York: Oceana, 1985) Vol.1 pp.106-107 and pp.288-289; see also Johnston, *supra* note 1, p.92; Note also the comments of the British delegation to the first meeting of ICES: reproduced in Fulton, *supra* note 5, p.736

began to provide technical advice under a number of fisheries conventions, and proved a model for similar scientific organizations targeting the Mediterranean Sea²⁰ and the Western Atlantic²¹, its own focus limited largely to the Baltic and North Seas.²² In the years prior to and following the First World War, ICES and other scientific councils were given an express role in advising States in their deliberations as to how fisheries ought to be exploited in areas beyond the territorial sea.²³

The use of scientific councils as an aid to the framing of management measures was an important development in the international law of marine living resource management. It was seen as the most effective means of obtaining State agreement on fishing practice on the high seas, as jurisdiction-based management was useless beyond three nautical miles, and flag-State enforcement of management provisions had proved problematic in the view of conventions where it had been employed at

²⁰ For example, the International Commission for the Exploration of the Mediterranean Sea, established in 1914.

²¹ For example, the North American Council on Fishery Investigations, established in 1920.

²² See Johnston, *supra* note 1, pp.92-93

²³ See M.S. McDougal and W.T. Burke, *The Public Order of the Oceans: A Contemporary International Law of the Sea* (New Haven: New Haven Press, 1987) p.39; see also A.W. Koers, *International Regulation of Fisheries: A Study of Regional Fisheries Organizations* (Margate: Eyre & Spottiswoode, 1973) pp.77-79; P.W. Birnie & A.E. Boyle, *International Law and the Environment* (Oxford: Clarendon Press, 1992) pp.496-497

all.²⁴ Early efforts were directed at valuable commercially exploitable species that were already threatened, such as the North Pacific Fur Seal Convention²⁵, and the International Pacific Halibut Commission.²⁶ These conventions provided little direction in terms of the management principles upon which they were to be based beyond authorising States to institute measures to "preserve and protect" stocks or to do what was desirable for the "preservation and development" of stocks.²⁷ Rather the representation that each participant State was entitled to have, mechanisms for cooperation on enforcement, and in the case of the Fur Seal

²⁴ Daggett notes that the elaborate fishing regulations prescribed in the 1843 agreement between Britain and France on English Channel fisheries were "unscientific", "clumsy" and more honoured in the breach: Daggett, *supra* note 9, pp.713-714

²⁵ *Convention between Great Britain, the United States, Japan, and Russia, respecting Measures for the Preservation and Protection of Fur Seals in the North Pacific Ocean*, done at Washington on 7 July 1911, entered into force 15 December 1911: 104 SP p.175 [hereafter cited as the Fur Sea Convention]. For a discussion of the Fur Seal Convention see Birnie & Boyle, *supra* note 23, pp.493-496; see also Koers, *supra* note 23, pp.85-87; J.L. Kask, "Present Arrangements for Fishery Exploitation" in L.M. Alexander (ed.), *The Future of the Sea's Resources* (Kingston: University of Rhode Island, 1968) p.56 at pp.58-59

²⁶ *Convention between the United States and Canada for the Preservation of the Halibut Fisheries of the Northern Pacific Ocean*, done at Washington 2 March 1923, entered into force 23 October 1924: 32 LNTS 93 [hereafter cited as Pacific Halibut Convention]; W. McL. Chapman, "The Theory and Practice of International Fishery-Development-Management" (1970) 7 *San Diego Law Review* p.408 at pp.423-427; Birnie & Boyle, *supra* note 23, p.497; see also Koers, *supra* note 23, pp.80-82

²⁷ See Article X, Fur Seal Convention; Article 3, Pacific Halibut Convention; see L.L. Leonard, *International Regulation of Fisheries*, (Washington: Carnegie Endowment, 1971) p.35

Convention, minimum stock sizes on certain species, were the concerns.²⁸ These conventions were quite progressive for their time, specifying States could implement conservation measures such as closed seasons, declaration of fishery sectors, licensing, departure dates, data collection, gear restrictions and so on, but the underlying objective of these measures²⁹, other than seeking the "preservation" of the stocks³⁰ were not specified. The State parties had the ultimate decision in what they believed would be in the best interest of conservation.

It is difficult to be objectively critical of these efforts to consider principles of management in international conventions prior to the Second World War because marine living resource management was very much an emerging field of academic study. Early efforts saw it become a sub-discipline of marine biology in the 1880's. Marine biologists directed their efforts at examining fish biology and reproduction, and then seeking to draw conclusions on the level of appropriate fishery activity. This was the mind-set behind the establishment of ICES in 1902, and was typical of the approach to such matters until the 1940s.³¹

²⁸ These measures appear to have had more to do with determining when certain indemnities were payable between States rather than directed solely at conservation: Articles XI, XII and XIII, Fur Seal Convention

²⁹ Birnie & Boyle, *supra* note 23, p.497

³⁰ Preamble, Pacific Halibut Convention

³¹ See Birnie & Boyle, *supra* note 23, p.494

Maximum Sustainable Yield & Maximum Economic Yield

As previously noted, concerted efforts at scientific study of fisheries had been made since the end of the 19th Century. By the 1930's and 1940's, these efforts were translating into the development of theories of fishery biology that could be used to predict fish populations for given stocks. These theoretical models were extremely simplistic, but represented a substantial advance nevertheless.³²

The basic notion was that an unexploited fish stock in nature was in equilibrium. That is to say, that the annual increase in population, referred to as recruitment, approximates the annual population loss by way of natural deaths.³³ It was found that when a stock was harvested, the proportion of the stock lost to natural deaths falls, while the food resources available to the stock remains constant. As a result, the system seeks equilibrium by an increase in recruitment. As such, the more fish are harvested, the greater the annual recruitment will be.³⁴ Naturally, this can only

³² For example, Chapman notes that the Russian Baranov produced the first mathematical model of the relationship between fish life processes and yield in 1918: Chapman, *supra* note 26, p.409; see also W.F. Royce, "Use of Yield Models in Fishery Management" in P.M. Roedel (ed.), *Optimum Sustainable Yield as a Concept in Fisheries Management* (Washington DC: American Fisheries Society, 1975) p.9

³³ Nikolskii expresses this by noting that fecundity is directly related to morality, and that very few fish die of old age: G.V. Nikolskii (tr. J.E.S. Bradley), *Theory of Fish Population Dynamics as the Biological Background for Rational Exploitation and Management of Fishery Resources* (Edinburgh: Oliver & Boyd, 1969) p.139

³⁴ The rate of increase will vary between species, based upon their fecundity. In general, the more fecund a species, the greater its ability to regenerate itself, and be resilient to the effects of fishing: Royce, *supra* note 32, pp.10-

continue to a certain level, as once the population reduces to too low a level, there will be insufficient numbers to regenerate the stock.

The relationship can be demonstrated by a simple effort/yield diagram. The greater the effort in fishing, the more substantial the yield initially. Once the stock falls below a population level where it is capable of regenerating itself, greater effort will lead to a lower yield. The point which provides the greatest return for effort is known as the maximum sustainable yield. This is the largest number of fish that can be harvested, while permitting the fish to regenerate through natural increase to the original biomass. As much as half of the total biomass of a previously unexploited stock could be taken in a year, with the expectation that the remaining biomass would be able to replace the harvest within 12 months, although the figure will vary between fisheries.³⁵

While fishing can continue up to the maximum sustainable yield without long term consequences, there are significant consequences if this level is exceeded. On the diagram, it is evident that a smaller return is produced for effort, but the impact is more substantial. Exceeding the maximum sustainable yield means that the biomass

³⁵ C. de Klemm, "Living Resources of the Ocean" in D.M. Johnston (ed.), *The Environmental Law of the Sea* (Gland: International Union for the Conservation of Nature and Natural Resources, 1981) p.71 at p.80; E.S. Iversen, *Living Marine Resources: Their Utilization and Management* (New York: Chapman & Hall, 1996) pp.244-245

of the stock cannot regenerate itself to its original level. Consequently the next year will see the stock start from a lower population base, which in turn will lower the maximum sustainable yield. If the same rate of fishing is maintained, then the biomass will be reduced still further, compounding the problem. If the levels are exceeded by a large margin, then the impact on the stock can be dramatic, causing a collapse in the population.³⁶

As most fish species produce many thousands of eggs each year, to combat high levels of depredation, the level of harvest that represents the maximum sustainable yield can be quite high, and it is possible for a collapsed stock to recover relatively quickly. Other creatures, such as whales, which reproduce by producing single calves on an annual or biannual basis can only support a low maximum sustainable yield, and may take decades to regenerate.³⁷ However, there is no guarantee that a collapsed stock can regenerate to pre-harvest levels, because unlike the effort/yield model that permits the calculation of the maximum sustainable yield, reality is prey to variety of other factors.³⁸ Interestingly, as late as 1955, marine scientists were prepared to dismiss the relevance of these other factors, as it was believed that fishing effort could never reach the maximum sustainable yield threshold, as it was

³⁶ For example see M.B. Schaefer, "The Scientific Basis of a Conservation Programme" *Papers for the Rome Technical Conference 1955*, pp.15-16; E.S. Iversen, *Living Marine Resources: Their Utilization and Management* (New York: Chapman & Hall, 1996) pp.247-248

³⁷ Royce, *supra* note 32, pp.10-11

³⁸ For example see Iversen, *supra* note 36, p.242

economically impossible to do so.³⁹

The calculation of the maximum sustainable yield requires data concerning a number of specific factors. These include:

- (a) the biomass of the stock;
- (b) the rate of recruitment and its relation to the parental stock;
- (c) the rate of growth; and
- (d) the rate of mortality.⁴⁰

While the calculation of the biomass is difficult enough in itself, being dependant upon the taking of samples, and extrapolating these to calculate a total population, it is far simpler than calculating rates of recruitment and growth. This is because no species is operating in isolation within the ecosystem, and therefore rates of recruitment or growth may be affected by factors as diverse as water temperature, currents or competition for available food with other species. Given the difficulties in obtaining all this data, it makes the calculation of the maximum sustainable yield for a stock an exercise in estimation that can never be completely determined.⁴¹

While fisheries biologists were making progress in the development of mathematical

³⁹ Schaefer, *supra* note 36, p.15. Schaefer also expressed the view that he knew of no instance of purely marine fishery ever having been fished at the maximum sustainable level. Such an opinion could not be supported today.

⁴⁰ Koers, *supra* note 23, p.47

⁴¹ Iversen, *supra* note 36, p.250

models designed to determine acceptable levels of harvest, a different approach was being undertaken by agricultural economists, such as W. Scott Gordon⁴² and Anthony Scott⁴³. As commercial fishing is an economic activity, they separately considered economic models of fisheries, to determine whether participation in a fishery was commercially viable and how such participation could be carried out for the greatest economic benefit.⁴⁴ A fishery exploited to the biological limit of sustainable harvesting was not necessarily the most economically efficient fishery.⁴⁵ Rather, a fishery which made the most efficient use of vessels over a given area could produce a greater return on the capital and labour for a finite quantity of fish. A fishery exploited to its biological maximum capacity might produce more fish, but the cost of exploitation in unit terms would be greater.⁴⁶

⁴² W.S. Gordon, "The Economic Theory of a Common Property Resource" (1954) 62 *Journal of Political Economy* p.124

⁴³ A. Scott, *Natural Resources: The Economics of Conservation* (Toronto: McClelland & Stewart Ltd, 1973) [first published 1955; hereafter cited as Scott (1973)]; A. Scott, "The Objectives of Sole Ownership" (1955) 63 *Journal of Political Economy* p.124

⁴⁴ D.M. Johnston, "Stresses and Mind-sets in Fisheries Management" (1995) 18 *Dalhousie Law Journal* p.154 at p.155

⁴⁵ Crutchfield goes further suggesting that the use of the term "maximum sustainable yield" was damaging to management models, which direct themselves at a clearer exposition of economic factors: J.A. Crutchfield, "An Economic View of Optimum Sustainable Yield" in P.M. Roedel (ed.), *Optimum Sustainable Yield as a Concept in Fisheries Management* (Washington DC: American Fisheries Society, 1975) p.13 at p.14

⁴⁶ For example Beverton and Holt, writing in the 1950's, sought to combine social, economic and political criteria rather than biological factors in determining appropriate limits for fishing: R.J.H. Beverton & S.J. Holt, *On the Dynamics of Exploited Fish Populations* (London: Chapman & Hall,

The models developed are founded upon a number of assumptions. Firstly, the cost of fishing operations is assumed to be directly dependent upon the amount of effort expended, consequently the longer at sea a vessel spends fishing, the greater the cost involved. Secondly, it is assumed that the value of fish is proportional to the weight of the catch. Neither of these assumptions is necessarily always valid, but they do encompass the majority of usual situations.⁴⁷

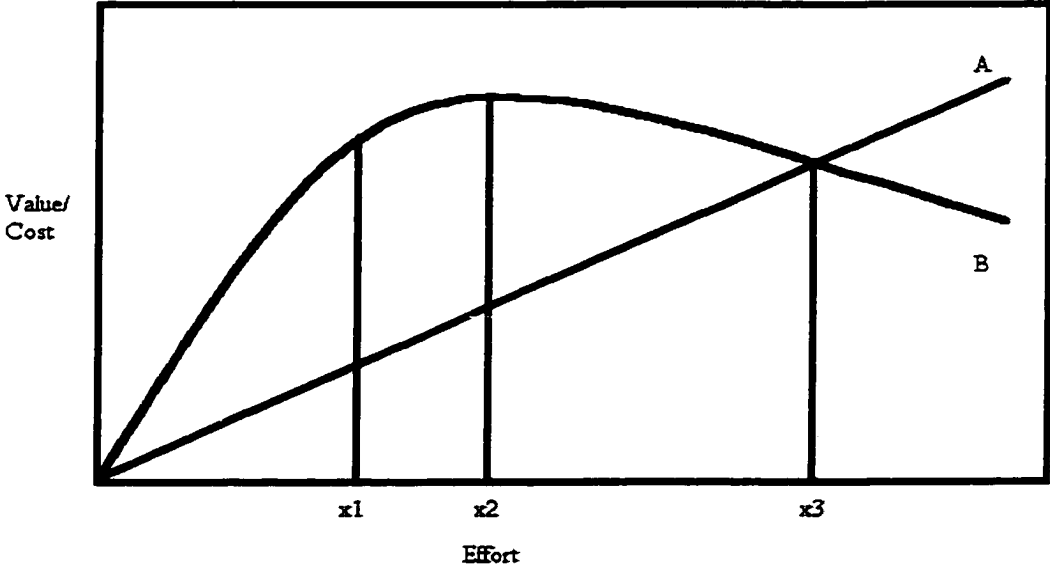
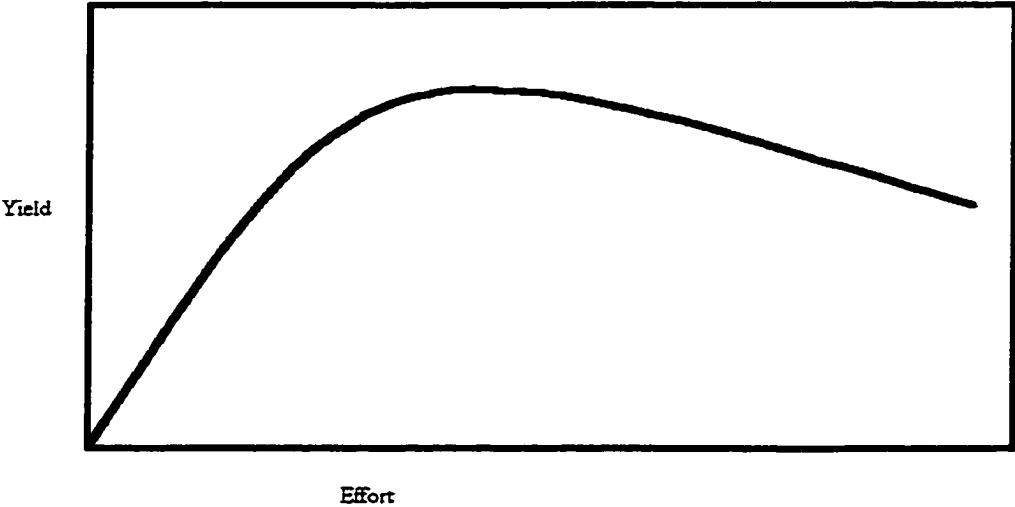
The assumptions permit a relationship to be demonstrated between effort, value and cost that can be displayed on a variation of the previous diagram. The relationship between effort and yield remains the same, but yield can be replaced by value, as the weight of the catch can be assigned a value by virtue of the second assumption. Since the first assumption relates cost to effort, it can also be graphed, and placed on the same axes. The resulting diagram is of interest.⁴⁸

1993); see also McDougal and Burke, *supra* note 23, pp.473-475

⁴⁷ That said, the actual calculation of relevant economic factors is extremely complicated. Mueller and Wang have identified 33 separate economic factors that would be relevant in determining the maximum economic yield: J.J. Mueller & D.H. Wang, "Economic Analysis in Fishery Management Plans: An Overview" in L.G. Anderson (ed.), *Economic Analysis for Fisheries Management Plans* (Ann Arbor: Ann Arbor Science: 1981) p.1 at pp.12-16

⁴⁸ The relevant diagram has been much used in a number of publications. One of the more visually comprehensible is provided by Coull: J.R. Coull, "The Economics of Fishing" in R. Churchill, K.R. Simmonds & J. Welch (eds), *New Directions in the Law of the Sea* (Dobbs Ferry: Oceana, 1973) Vol.3, p.52 at p.54

Fishery/Yield Diagrams



Maximum economic yield does not relate so much to a fishery itself but rather those engaged in fishing. The maximum economic yield is the optimum quantity of fish that individuals can harvest at the lowest per unit cost. The maximum economic yield can be seen on the diagram as being at point x1 - that is, where the difference between cost and value is greatest. It approaches the maximum sustainable yield, in the diagram at point x2, but since it is not a biological concept, there is no reason why the two quantities are necessarily the same. In most cases, the maximum economic yield will be significantly less than the maximum sustainable yield. This is because as exploitation approaches maximum sustainable yield, vessels have to travel further afield and spend longer at sea, incurring greater costs for a lesser return. That said, logically the maximum economic yield can never exceed the maximum sustainable yield. Were it to do so, the stock would progressively decline over time, and the economic benefit derived from it would also decline and therefore not be optimal.⁴⁹

The diagram is also illuminating in that it provides a key to understanding why there is a tendency for unregulated fisheries to be overexploited and unprofitable. When an unregulated fishery is new, in theory a single vessel could commence operations, and its catch would attempt to approximate the maximum economic yield. Observing that this first vessel was making a substantial profit, other fishing

⁴⁹ For example see M.S. McDougal and W.T. Burke, *The Public Order of the Oceans: A Contemporary International Law of the Sea* (New Haven: New Haven Press, 1962) pp.974-975; Iversen, *supra* note 36, pp.253-255

vessels will be tempted into the fishery. This can continue until the cost of fishing equates to the value of the stock caught. This occurs at point x3. In this diagram, point x3 is beyond the maximum sustainable yield, so if this level of fishing is maintained, the stock will diminish and may collapse. If the fishery is unregulated, all participants will seek to maximise their profits, by maximising their catches, hence ultimately driving exploitation to unsustainable levels.⁵⁰ Small fishing companies will build larger and more efficient vessels to attempt to maximise their catches, and therefore returns, which can lead to over capitalisation. Vessels of greater fishing efficiency are more expensive, and so must catch more fish to provide an adequate return, thus increasing the pressure on a stock still further. This cycle will see greater effort leading to ever decreasing profits, until reaching point x3. Effort will only diminish once losses are being made, thus unregulated fisheries tend towards point x3, and therefore can only end in overexploitation, and, in the long term, collapse.⁵¹ This is the basic thesis of Hardin's "tragedy of the commons"⁵², which demonstrates that unregulated common property tends towards

⁵⁰ This point was made by Scott in his economic analysis of non-specific resource exploitation models, including fisheries: Scott (1973), *supra* note 43, p.63; and by Scott Gordon: Scott Gordon, *supra* note 42, *passim*; see also Iversen, *supra* note 36, p.254

⁵¹ Koers, *supra* note 23, pp.54-57

⁵² G. Hardin, "The Tragedy of the Commons" in G. Hardin & J. Baden (eds), *Managing the Commons* (San Francisco: W.H. Freeman & Co., 1977) p.16

overuse and destruction.⁵³ Ostrom has identified a number of factors that will give rise to the overexploitation referred to by Hardin. It will exist where: (1) ownership of a resource is held in common; (2) a large number of users have independent rights to the use of the resource; (3) no one user can control the activities of others, in the absence of universal voluntary agreement; and (4) total use or demand upon the resource exceeds supply.⁵⁴

By analogy, the problem can be extrapolated to the level of States. While each State can regulate fishing vessels flying its flag in international law, sovereign equality means that in areas beyond national jurisdiction, each State's fishing fleet is essentially independent in its actions *vis a vis* other States' fishing fleets. While a State's interests may often be more convoluted and complex than the simple maximisation of profit, the dangers of regulatory schemes that failed to include significant participants in an industry have been spectacularly demonstrated in a number of instances⁵⁵, and were well understood by the world community even

⁵³ Hardin expressly notes that the contemporary regulation of the oceans was an example of largely unregulated common property, resulting in the extinction of several fish species from particular waters: see Hardin, *supra* note 52, p.21

⁵⁴ E. Ostrom, "Collective Action and the Tragedy of the Commons" in G. Hardin & J. Baden, *Managing the Commons*, (San Francisco: W.H. Freeman & Co., 1977) p.173 at p.174

⁵⁵ Although outside the context of fisheries, the most expensive example of a common scheme failing to include a significant participant is that of the International Tin Council: R. Sadurska & C.M. Chinkin, "The Collapse of the International Tin Council: A Case of State Responsibility?" 30 *Virginia Journal of International Law* p.845

before World War II.⁵⁶

In the 1950s, these economic models made it clear that fish biology should not be the only concern in the making of management decisions. However, to what extent economic factors should be relevant in the making of such discussions was by no means clear. While some economists might favour a system which maximised profits, such a system would not necessarily be the favoured model of government. Political decision-makers might favour a system that increases participation in the fishery, thereby diminishing net profit, but spreading what profit is made through small fishing communities. Other factors that may be included might be the impact of recreational fishing in particular areas, or on particular stocks. Such a result might be described as "optimum sustainable yield", as it should still produce a yield that is sustainable, and maximises profit, while taking into account other relevant considerations.⁵⁷ Naturally, the optimum sustainable yield will vary depending on the range of additional factors, and the relative weight given to them by the

⁵⁶ The failure of the attempts to regulate international whaling in the years prior to the outbreak of World War II is the best example of this: *Convention for the Regulation of Whaling*, done at Geneva on 24 September 1931, entered into force 16 January 1935: 155 LNTS p.351; see also L.L. Leonard, "Recent Negotiations toward the International Regulation of Whaling" (1941) 35 *American Journal of International Law* p.91; Johnston, *supra* note 1, pp.396-401

⁵⁷ D.H. Wallace, "Keynote Address" in P.M. Roedel (ed.), *Optimum Sustainable Yield as a Concept in Fisheries Management* (Washington DC: American Fisheries Society, 1975) p.5 at pp.6-8

fishery's manager.⁵⁸

Accordingly, maximum economic yield might not always be the most desirable result from a decision-maker's point of view. On the other hand, exceeding maximum sustainable yield is never in the interest of a decision-maker, as this diminishes the available stock, and is ultimately counter productive. Further, the factors necessary in the calculation of maximum economic yield, such as the *per diem* cost of fishery operations, and the value of fish caught are extremely difficult to calculate accurately, and may easily change over a short period of time. Estimates can be used, but these increase the likelihood of error, and when combined with estimations of the size of the fishery and other biological data, the level of error may become unacceptable.⁵⁹

International Law and Management Theory

1945 to UNCLOS I

While the debate between fisheries biologists and fisheries economists grew during the 1940's and 1950's, international law began to react to the necessity of

⁵⁸ Some of the logical problems in the identification of appropriate value systems in determining optimum sustainable yield are discussed in D.R. Matthews, "'Constructing' Fisheries Management: A Values Perspective" (1995) 18 *Dalhousie Law Review* p.44; see also A.T. Charles, "Fishery Conflicts: A Unified Framework" (1992) 16 *Marine Policy* p.379 at pp.383-386

⁵⁹ G.L. Kesteven, "MSY Revisited: A Realistic Approach to Fisheries Management and Administration" (1997) 21 *Marine Policy* p.73 at pp.73-76

regulating fisheries. As was noted above, unregulated fisheries tend to become overcapitalised and over-exploited, leading to unfortunate results. An approach to the question of management began to become evident through the 1950s through a series of international conventions, ultimately culminating in the work of the International Law Commission and UNCLOS I.⁶⁰ The development of the law in this area is illuminating, and is worth some further consideration.

In the years following World War II, a string of fisheries conventions, relying on flag State enforcement and applying to large high seas areas, were adopted.⁶¹ Most established fisheries commissions, the purpose which were to ensure that over exploitation of particular marine living resources did not take place.⁶² Logically, for this objective of the commissions to be achieved, some guidance as to what are acceptable harvest levels to avoid over-exploitation would be necessary. Early conventions, if considering the problem at all⁶³, avoided it by extolling commissions to make use of the best available scientific advice, without specifying how such advice should be used or what management principles should underpin

⁶⁰ See below

⁶¹ *Infra* note 64

⁶² See generally *supra* note 23, pp.496-502

⁶³ For example the *Convention for the Regulation of the Meshes of Fishing Nets and the Size Limits of Fish*, done at London on 5 April 1946, entered into force 5 April 1953: 231 UNTS 200 fails to even make reference to scientific data, or any identifiable management goals.

analysis of scientific data.⁶⁴ Typically, a Commission could undertake scientific investigation of a stock, or make recommendations to its members on matters such as permissible net types, mesh dimensions and minimum fish sizes, but no methodology as to the size of a permissible catch or the objectives of exploitation were spelled out.⁶⁵

Exceptions to this pattern can be found. In the 1949 Northwest Atlantic Fisheries Convention which indicated the appropriate objective was the "maximum sustained catch", to be achieved by a variety of measures, derived from the advice of specialist panels and "scientific investigations".⁶⁶ This appears to equate to the

⁶⁴ For example see Article 6 *North-East Atlantic Fisheries Convention*, done at London on 24 January 1959, entered into force on 27 June 1963: 486 UNTS 158; see also *Convention between the United States of America and the Republic of Costa Rica for the Establishment of an Inter-American Tropical Tuna Commission*, done at Washington on 31 May 1949, entered into force 3 March 1950: 80 UNTS 4 [hereafter cited as *Inter-American Tropical Tuna Convention*]; *Convention between the Governments of the People's Republic of Bulgaria, the Romanian People's Republic and the Union of Soviet Socialist Republics concerning Fishing in the Black Sea*, done at Varna on 7 July 1959, entered into force 21 March 1960: 377 UNTS 220; *Agreement between the Governments of the German Democratic Republic, the Polish People's Republic and the Union of Soviet Socialist Republics concerning Co-operation in Marine Fishing*, done at Warsaw on 28 July 1962, entered into force 22 February 1963: 460 UNTS 230.

⁶⁵ For discussions of the operation of some of these conventions see Kask, *supra* note 25, pp.59-61; Koers, *supra* note 23, pp.87-116

⁶⁶ Article VIII(1), *International Convention for the Northwest Atlantic Fisheries*, done at Washington on 8 February 1949, entered into force on 3 July 1950: 157 UNTS 158; see also Koers, *supra* note 23, pp.92-95; E. Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources: The United Nations Law of the Sea Convention Cooperation*

then emerging concept of maximum sustainable yield, and could be seen as something of a step forward as it at least attempted to guide the Commission as to what its goal should be. Similarly, the 1949 US-Mexico Tuna Commission refers in its preamble to "maximum reasonable utilization without depletion from year to year" which appears to be another variant on the term.⁶⁷

However, these arrangements were atypical, and clearly the situation was unsatisfactory. In its preparation of draft texts for the First United Nations Conference on the Law of the Sea (UNCLOS I) in Geneva in 1958, the International Law Commission, in response to General Assembly Resolution 900 (IX), convened a special conference to deal with the question of fisheries management. Entitled the International Technical Conference on the Conservation of the Living Resources of the Sea, the conference was held in Rome in April and May 1955. It was attended by some 45 State representatives and a further 6 State observers.⁶⁸

between States (Dordrecht: Martinus Nijhoff, 1989) p.188; Johnston, *supra* note 1, pp.365-369

⁶⁷ *Convention between the United States of America and Mexico relating to the Establishment of an International Commission for the Scientific Investigation of Tuna*, done at Mexico City on 25 January 1949, entered into force 11 July 1950: 99 UNTS 4

⁶⁸ W.C. Herrington, "The Convention on Fisheries and Conservation of Living Resources: Accomplishments of the 1958 Geneva Conference" in L.M. Alexander (ed.), *The Law of the Sea: Offshore Boundaries and Zones* (Columbus: Ohio State University Press, 1967) p.26 at p.29

The conference had a number of objectives. Its agenda contained five substantive items, namely:

1. Objectives of fishery conservation.
2. Types of scientific information required for a fishery conservation programme.
3. Types of conservation measures applicable in a conservation programme.
4. Principal specific international fishery conservation problems of the world and measures and procedures applicable and being applied for their solution.
5. International conservation problems for the resolution of which international measures are not adequate and possible means of resolving them.⁶⁹

In dealing with these agenda items, the conference delegates did not select a technique or prescribe an appropriate methodology. Rather they stressed the need for international cooperation to ensure that the resources of the high seas were conserved. This objective was to be met through "rational exploitation", made possible by conservation measures based upon scientific evidence showing a fishery

⁶⁹ F.V. Garcia Amador, *The Exploitation and Conservation of the Resources of the Sea* (Leyden: Sythoff, 1959) pp.136-137; see also G. Lugten, *The Impact of Extra Legal Factors in the Historical Development of International Fisheries Law* (Ph.D. thesis, University of Tasmania, 1996), p.144

was being damaged or under threat.⁷⁰ Indications as to methodology were evident in the way the delegates saw the objective could be met:

The immediate aim of conservation of living marine resources is to conduct fishing activities so as to increase, or at least to maintain, the average sustainable yield of products in desirable form. At the same time wherever possible scientifically sound positive measures should be taken to improve the resources.⁷¹

The final report of the Technical Conference expressed this even more clearly, where "the principal objective of conservation of the living resources of the sea" was "to obtain the optimal sustainable yield so as to secure the maximum supply of food and other marine products".⁷² From the plenary sessions of the Conference, it is clear that optimal sustainable yield meant other factors beyond volume of catch could potentially influence management decisions, including economic and ecological factors⁷³, although it is equally clear that scientific data was to be the fundamental consideration.⁷⁴ Interestingly, McDougal and Burke contend that it was the Conference's view that purely commercial interests, which the delegates

⁷⁰ *Report of the International Technical Conference on the Conservation of the Living Resources of the Sea*, Rome, (UN Doc. A/Conf. 10/6 1955) Part II, Article 16; see also Lugten, *supra* note 69, p.144

⁷¹ *Report of the International Technical Conference on the Conservation of the Living Resources of the Sea*, Rome, (UN Doc. A/Conf. 10/5/Rev.2, 1955): reprinted in M.M. Whiteman, *Digest of International Law* (Washington: Department of State, 1965) Vol.4, pp.1099-1100; see also W.W. Bishop, "International Law Commission Draft Articles on Fisheries" (1956) 50 *American Yearbook of International Law* p.627 at pp.627-628

⁷² Reprinted in Garcia Amador, *supra* note 69, p.145

⁷³ Garcia Amador, *supra* note 69, pp.143-144

⁷⁴ McDougal & Burke, *supra* note 49, pp.971-972

noted were "transitory" in nature, must not subvert the long term of objective of maintaining the optimum (which in the context meant maximum) sustainable yield.⁷⁵ Further, the Conference explicitly gave a role to scientific data in this process, by annexing draft articles which required unilateral conservation measures imposed by a coastal State to be non-discriminatory, based on appropriate scientific findings and to be used to deal with urgent conservation problems.⁷⁶

The recommendations of the Technical Conference were forwarded to the International Law Commission (ILC), which prepared draft articles for the First United Nations Conference on the Law of the Sea, held in Geneva in 1958. The deliberations of the ILC do not need to be considered in detail, because as with earlier instruments devoted to fisheries management, the focus of concern was jurisdiction. The Commission's principal concern was to the extent that a coastal State should have influence on the regulation of adjacent high seas fisheries, recalling that at the time, the high seas were all waters outside the territorial sea. The ILC noted the "special interest" of adjacent coastal States in measures to conserve high seas fisheries, but at no time did they seek to explore what the nature of those measures ought to be, other than to take on board what had been discussed at the Rome Technical Conference.⁷⁷ In their discussions, some members of the

⁷⁵ McDougal & Burke, *supra* note 49, pp.972-973

⁷⁶ Garcia Amador, *supra* note 69, pp.166-167

⁷⁷ See (1956) 2 *Yearbook of the International Law Commission* p.7 and (1956) 1 *Yearbook of the International Law Commission* pp.17-27

Commission, notably Messrs Zourek, Garcia Amador and Salamanca, were of the view that the term "conservation of the living resources of the high seas" needed further definition, but that this was essentially a "technical consideration" that was not appropriate for the ILC to deal with.⁷⁸

UNCLOS I and the Geneva High Seas Fisheries Convention

The ILC prepared draft articles which were subsequently transmitted to the First United Nations Conference on the Law of the Sea, held in Geneva in 1958. In the context of conservation management methodology, these drew heavily from the Technical Conference Report⁷⁹, and ultimately were adopted, largely intact, into the Convention on Fishing and the Conservation of the Living Resources of the High Seas.⁸⁰ While the Convention itself was not a success, taking almost 8 years to reach the requisite 30 ratifications and only ever attracting a total of 37 State parties⁸¹, its provisions in relation to fisheries management are illuminating.⁸²

⁷⁸ See (1956) 1 *Yearbook of the International Law Commission* pp.19-20

⁷⁹ Herrington, *supra* note 68, p.29

⁸⁰ *Convention on Fishing and the Conservation of the Living Resources of the High Seas*, done at Geneva on 29 April 1958, entered into force 20 March 1966: 559 UNTS 285

⁸¹ As at 31 December 1995: Davies & Redgwell, *supra* note 7, p.223

⁸² For an assessment of the operation and perceived failings of the High Seas Fisheries Convention see R.R. Churchill & A.V. Lowe, *The Law of the Sea* (Manchester: Manchester University Press, 1988) p.230

Before turning to the High Seas Fishery Convention, it is important to note that fishing in areas not considered the high seas, that is within internal waters or the territorial sea, were not within the ambit of that Convention. Fishing within waters subject to State jurisdiction was simply assumed to be the responsibility of the State. Article 1 of the Convention on the Territorial Sea and Contiguous Zone⁸³ simply stated that coastal State sovereignty extended to the territorial sea, subject to a number of limitations, none of which related to fishing or fisheries management. Implicit in this is the view that a State had complete control to deal with its resources, including those resources in its territorial sea, as it wished, unfettered by any overarching international law obligation to deal with the stock in a particular fashion.⁸⁴

Further, while there was no agreement at UNCLOS I as to the width of the territorial sea, it was clear that the distance would lie between 3 and 12 nautical miles, with the former more strongly favoured than the latter.⁸⁵ By UNCLOS II,

⁸³ *Convention on the Territorial Sea and Contiguous Zone*, done at Geneva 29 April 1958, entered into force 10 September 1964: 516 UNTS 205

⁸⁴ Boyle and Birnie make the point that only the High Seas Fisheries Convention imposed any obligation upon States in the level of harvesting fisheries, while the other 3 conventions concluded in 1958 made no reference to appropriate levels of exploitation at all: Birnie & Boyle, *supra* note 23, p.504. Even in the 1982 Convention on the Law of the Sea there are no restrictions upon a coastal State's ability to deal with the fisheries of its territorial sea as it chooses.

⁸⁵ There has been extensive commentary devoted towards the width of the territorial sea, and the debates it produced at UNCLOS I. For an example see A.H. Dean, "The Geneva Conference on the Law of the Sea: What Was

the favoured distance was 6 miles, together with a 6 mile fisheries zone, although again no position was adopted.⁸⁶ What is clear however is that national jurisdiction over fisheries would end, at most, 12 nautical miles from shore.⁸⁷ This meant that a large percentage of the world's fisheries were in fact beyond the jurisdiction of any coastal State, making the provisions of the High Seas Fisheries Convention of some significance.⁸⁸

The High Seas Fishery Convention commenced with a positive duty upon all States to adopt, and cooperate with others to adopt such measures as necessary to achieve

Accomplished?" (1958) 52 *American Yearbook of International Law* p.607; S.P. Jagota, *Maritime Boundary* (Dordrecht: Martinus Nijhoff, 1985) pp.21-22; O'Connell, *supra* note 2, Vol.1, p.163; R.P. Anand, *Origin and Development of the Law of the Sea* (The Hague: Martinus Nijhoff, 1982) pp.179-180

⁸⁶ For a discussion on the failure of the 6 + 6 proposal at UNCLOS II see W.R. Neblett, "The 1958 Conference on the Law of the Sea: What was Accomplished?" in L.M. Alexander (ed.), *The Law of the Sea: Offshore Boundaries and Zones* (Columbus: Ohio State University Press, 1967) p.36 at pp.39-40; A.H. Dean, "The Second Geneva Conference on the Law of the Sea: The Fight for Freedom of the Seas" (1960) 54 *American Journal of International Law* p.751 at p.776; D. Bowett, "The Second United Nations Conference on the Law of the Sea" (1960) 9 *International and Comparative Law Quarterly* p.414 at p.432; D.J. Attard, *The Exclusive Economic Zone in International Law* (Oxford: Clarendon Press, 1987) p.13

⁸⁷ See generally Churchill & Lowe, *supra* note 82, pp.66-67; O'Connell, *supra* note 2, Vol.1, pp.165-166

⁸⁸ See W.McL. Chapman, "Fishery Resources in Offshore Waters" in L.M. Alexander (ed.), *The Law of the Sea: Offshore Boundaries and Zones* (Columbus: Ohio State University Press, 1967) p.87 at pp.95-96

"the conservation of the living resources of the high seas".⁸⁹ The nature of this objective is clarified within Article 2, where the scope of the expression "conservation of the living resources of the high seas" is expanded upon. The definition provides:

As employed in this Convention, the expression "conservation of the living resources of the high seas" means the aggregate of the measures rendering possible the optimum sustainable yield from those resources so as to secure a maximum supply of food and other marine products. Conservation programmes should be formulated with a view to securing in the first place a supply of food for human consumption.⁹⁰

This provision is significant as it clearly states criteria providing the basis for management systems. Unlike some earlier conventions abdicating the formulation of principles of conservation to committees providing "scientific advice", the Convention provided a basic object that scientific advice and decisions alike were to work towards.

The objective sought utilising this advice is the "optimum sustainable yield".⁹¹ While this suggests that the yield sought is modified in some fashion to make it the "optimum", in reality what is being stated is the maximum sustainable yield. This is evident because the optimum sustainable yield is what is secured with the return of the maximum supply of food and other marine products. Since the greatest

⁸⁹ Article 1, High Seas Fisheries Convention

⁹⁰ Article 2, High Seas Fisheries Convention

⁹¹ The phrase "optimum sustainable yield" is drawn directly from the ILC's draft articles submitted to UNCLOS I: (1956) 2 *Yearbook of the International Law Commission* pp.286-287

volume of return is by necessity the maximum sustainable yield, this measure is clearly what is the objective of management.⁹²

From the above discussion, it can be seen that there was a distinct preference for the use of the maximum sustainable yield rather than references to the optimum sustainable yield. Several reasons for this preference can be posed. Firstly, as was noted above, the increased difficulty of calculating economic factors on top of biological factors made the concept significantly more problematic in its application. Secondly, all of these conventions left enforcement of measures and physical regulation of measures to flag States. This meant if a flag State wished to maximise economic return within its own licensing arrangements, it could do so, providing it acted in a manner not inconsistent with any assumed obligations within international law - that is, to exceed any calculated maximum sustainable yield. Since the maximum economic yield is always less than the maximum sustainable yield, and no State would be challenged by limiting its vessels to slightly less than their legal entitlement, a flag State could attempt to calculate and apply its own maximum economic yield to its own vessels, without fear of objection. Finally, since fishing States included States with both capitalist and socialist economies, there might be wide variations in opinion as to what would be the maximum

⁹² Birnie and Boyle describe it as "Optimum Sustainable Yield (OSY), unmodified by specific ecological or environmental factors, general economic considerations, or the needs of developing countries, and is directed solely at maximizing the supply of food..": Birnie & Boyle, *supra* note 23, p.504

economic yield. These were most easily avoided by the use of maximum sustainable yield.⁹³ On the other hand, McDougal and Burke make the point that the failure to clearly identify the appropriate conservation objectives of the High Seas Fisheries Convention is not at all satisfactory.⁹⁴

Within this broad objective various articles dealt with the content of measures adopted by States, and maintained the connection to the collection of scientific data, the relevance of scientific advice, and the application of both towards the achievement of the maximum sustainable yield. That said, the bulk of the provisions within the High Seas Fisheries Convention directed towards the implementation of conservation measures make no reference to scientific advice. Articles 3 to 6 deal with the implementation by States, individually⁹⁵, cooperatively⁹⁶ or unilaterally⁹⁷, of measures designed to achieve the conservation

⁹³ McDougal and Burke note that the use of maximum sustainable yield was unfortunate in the consideration of broader community interests, yet rationalise its use in part with reference to its greater objective credibility to the fishing industry: McDougal & Burke, *supra* note 49, pp.998-1001

⁹⁴ McDougal & Burke, *supra* note 49, p.1000

⁹⁵ Article 3, High Seas Fisheries Convention. Article 3 provides that flag States are obliged to ensure that conservation measures are adopted with respect to its own nationals fishing on the high seas.

⁹⁶ Articles 4 and 5, High Seas Fisheries Convention. Article 4 provides that where two or more States are engaged in fishing for the same stocks on the high seas that they are under an obligation to enter into negotiations with a view to the conclusion of necessary conservation measures: cf. Article 118, Law of the Sea Convention

of living resources outlined in Article 1. No guidance is given how those measures are to be formulated consistent with the Convention's objective, except in the event of a dispute, or where a coastal State attempts to unilaterally prescribe measures in the absence of agreement between parties.⁹⁸

The unilateral imposition of conservation measures was possible under Article 7, where negotiations towards a conservation regime had not led to an agreement after more than 6 months.⁹⁹ Article 7(2) describes the conditions under which such conservation measures are to be subject to:

2. The measures which the coastal State adopts under the previous paragraph shall be valid as to other States only if the following requirements are fulfilled:
 - (a) That there is a need for the urgent application of conservation measures in the light of the existing knowledge of the fishery;
 - (b) That the measures adopted are based on appropriate scientific findings;
 - (c) That such measures do not discriminate in form or in fact against foreign fishermen.¹⁰⁰

The content of this provision is enlightening as to the manner in which broader conservation objectives are to be achieved. While the method and type of

⁹⁷ Article 6 and 7, High Seas Fisheries Convention. Article 6 expressly recognises the special interest of a coastal State in the fisheries adjacent to its waters, and provides that other States fishing in such areas of the high seas cannot implement their own conservation measures which "are opposed to those" of the coastal State. A duty to enter into negotiations to conclude cooperative measures similar to that contained in Article 4 also exists.

⁹⁸ Article 7(1), High Seas Fisheries Convention

⁹⁹ See Davies & Redgwell, *supra* note 7, pp.223-224

¹⁰⁰ Article 7(2), High Seas Fisheries Convention

conservation measure is not specified, stress is laid upon the value of scientific data to actuate the process. Scientific data provides two of the three elements necessary to undertake what at the time amounted to an abrogation of a foreign State vessel's freedom of the high seas.¹⁰¹

Article 9 is a critical provision, as it is to deal with disputes arising from the application of the other operative parts of the Convention. It provides for the creation of a 5 person special commission. The membership is to be determined by agreement of interested States, or failing that, upon the nomination of the Secretary-General of the United Nations.¹⁰² The nominees must be "well-qualified persons", who are not nationals of the affected States, with expertise in the "legal, administrative and scientific questions relating to fisheries".¹⁰³ Again this stresses a key role for science in the formulation of conservation measures, as persons of legal and administrative expertise would not be expected to provide the raw content of conservation measures, but rather assist the scientific expert in making regulations that were consistent with the Convention specifically and international generally, and in formulating such regulations in an administratively workable

¹⁰¹ For commentary see Davies & Redgwell, *supra* note 7, p.224; see also W.T. Burke, *The New International Law of Fisheries* (Oxford: Clarendon Press, 1994) p.12

¹⁰² The Secretary-General is to exercise his/her choice after consultation with the FAO, the President of the ICJ and the States concerned: Article 9(2), High Seas Fisheries Convention.

¹⁰³ Article 9(2), High Seas Fisheries Convention

fashion.

Article 10 then expounds upon the conditions within which special commission conservation measures must operate. These are very similar to those noted above in Article 7(2), namely reliance upon scientific data to demonstrate the necessity of the measures, that specific measures are based upon scientific data, and are practicable, and that any measures adopted are non-discriminatory.

All this suggests that while maximum sustainable yield as an objective could be modified by other factors through the manner of its expression in Article 2, the operative mechanisms within the Convention placed the principal responsibility for meeting the objectives on science. Science, by and large, would not assist in the recognition of these modifying factors, which spring from economic, social and political considerations, and these would not necessarily be addressed by legal or administrative experts. Implicit too is the need to undertake scientific research into particular stocks, if they are to be subject to exploitation.¹⁰⁴ In the absence of agreement between participants in a fishery, it is clear that no conservation measures can be imposed in the absence of meaningful scientific data. It is evident that the process commencing in the early 1950s of inclusion of science in the management process has advanced considerably, to the point where scientific

¹⁰⁴ Davies and Redgwell go so far as to suggest that the requirement of urgency linked to existing knowledge effectively rules out a precautionary approach: Davies & Redgwell, *supra* note 7, p.224

investigation had become indispensable to the making of conservation measures. Further, those measures had to be directed towards a substantial objective: the maximisation of fishery production.

Other things of note can be observed arising out of UNCLOS I. One proposal of interest submitted to the ILC but not adopted by that body, or at UNCLOS I, was put forward by the United States.¹⁰⁵ It involved the incorporation of the principle of abstention. The object of the principle was an attempt to minimise the impact of new participants in fully exploited fisheries. The principle was to apply to prevent new States from entering fisheries that were under reasonable regulation to maintain the maximum sustainable yield, and are under adequate scientific investigation, thus leaving an established and satisfactory management system intact.¹⁰⁶ Strictly speaking it would not have operated to prevent third State fishing in such fisheries, as this would have been contrary to the law of treaties. Rather, the principle went only to questions of internal quota division between State parties to a fisheries convention. Even so, it proved unacceptable to the delegates at UNCLOS I, and was not included in the High Seas Fisheries Convention.¹⁰⁷

¹⁰⁵ For a discussion of the evolution of the proposal advanced by the United States, with the support of Canada, see the documents extracted by Whiteman, *supra* note 71, Vol.4, pp.968-977

¹⁰⁶ McDougal and Burke, *supra* note 49, pp.956-960; M.B. Schaefer, "Some Recent Developments Concerning Fishing and the Conservation of the Living Resources of the High Seas" (1970) 7 *San Diego Law Review* p.371 at p.383

¹⁰⁷ See Schaefer, *supra* note 106, p.383

The High Seas Fisheries Convention has not generally been viewed favourably by commentators and publicists.¹⁰⁸ Of the four conventions on the law of the sea concluded in Geneva in 1958, it was the last to enter into force, and never achieved more than 37 parties.¹⁰⁹ The lack of support lies at the heart of the Convention's failure, in that its enforcement mechanisms were weak, and completely ineffective in the case of vessels flagged in third party States. Although coastal States were given a preferential position with respect to the high seas adjacent to their waters, this preferential position did not translate into jurisdictional responsibility. The dispute resolution procedures designed to facilitate the conclusion of cooperative measures were never utilised¹¹⁰, and given the paucity of membership there was little chance of the Convention becoming an effective force in fisheries conservation.

International Cooperation and Enclosure of the Seas

The High Seas Fisheries Convention, and the various regional fisheries agreements of the 1950s were intended to be the precursor to a much wider series of agreements that would, in time, provide the basis for the regulation of fisheries

¹⁰⁸ Churchill and Lowe describe it as a dead letter: Churchill & Lowe, *supra* note 82, p.230; Burke, *supra* note 101, p.13

¹⁰⁹ *Supra* note 81

¹¹⁰ Davies & Redgwell, *supra* note 7, p.226

worldwide.¹¹¹ The United Nations' Food and Agriculture Organization (FAO) attempted to assist in this task in a number of ways, including coordinating fisheries research, and acting as a repository of fisheries data. Most notably however, was its role in the formation of a series of fisheries commissions. These commissions, established under Article VI-1 of the FAO Constitution¹¹², were organized for different regions, and attempted to attract membership from all interested States, including distant water fishing nations and littoral States. Such a commission was set up for the Indo-Pacific as early as 1948¹¹³, and others for the Mediterranean, the Indian Ocean, the Western Central Atlantic, the South West Atlantic, and the East Central Atlantic soon followed.¹¹⁴ Given their association with the FAO, it is not surprising that the commissions were principally designed to facilitate

¹¹¹ Schaefer notes that this was envisaged during the 1955 Rome Technical Conference: Schaefer, *supra* note 106, p.397

¹¹² The Indo-Pacific and Mediterranean Fisheries Commissions were established under Article XIV of the FAO Constitution. Later commissions were established under Article VI-1.

¹¹³ *1948 Agreement for the Establishment of the Indo-Pacific Fisheries Council*, done at Baguio on 26 February 1948, entered into force 9 November 1948: 120 UNTS 59

¹¹⁴ These Commissions were set up under the auspices of the FAO. The General Fisheries Council for the Mediterranean under Article 14 of the Constitution of the FAO - *Agreement for the Establishment of a General Fisheries Council for the Mediterranean*, done at Rome 24 September 1949, entered into force 20 February 1952: 126 UNTS 239; revised agreement 490 UNTS 444. The remaining bodies were all set up under Article 6(1) of the FAO Constitution: reports of their current activities can be found at: FAO Fisheries Department, *Code of Conduct for Responsible Fisheries*, 19 May 1998, <<http://www.fao.org/waicent/faoinfo/fishery/agreem/codecond/codeconf.htm>>

regional research cooperation with respect to fisheries, and to permit coordination of this research to some degree by the FAO itself.¹¹⁵

The regional commissions under the auspices of the FAO were by no means the only regional bodies engaged in fisheries management. Other commissions, established under individual treaties, also were formulated, although many of these retained formal or informal links to the FAO.¹¹⁶ A typical example might be seen in the Southeast Atlantic Commission.¹¹⁷ The Preamble to the relevant convention indicates State parties desire "to cooperate in the conservation and

¹¹⁵ See discussion in Koers, *supra* note 23, pp.108-113; see also J.E. Carroz, "Institutional Aspects of Fishery Management Under the New Regime of the Oceans" (1984) 21 *San Diego Law Review* p.513 at pp.515-516

¹¹⁶ Other examples include: *Agreement concerning Protection of the Salmon Stock in the Baltic Sea*, done at Stockholm 20 December 1962, entered into force 1 March 1966: 955 UNTS 259 [hereafter cited as the Baltic Salmon Convention]; *Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland, the Government of the Kingdom of Norway and the Government of the Union of Soviet Socialist Republics on the Regulation of the Fishing of North-east Arctic (Arcto-Norwegian) Cod*, done at London 15 March 1974, entered into force 15 March 1974: 925 UNTS 13 [hereafter cited as the Arctic Cod Convention]; *Convention on Fishing and Conservation of the Living Resources of the Baltic Sea and the Belts*, done at Gdansk 13 September 1973, entered into force 28 July 1974, with Protocol on 10 February 1984: *OJ* 1983, L 237 [hereafter cited as the Baltic Fisheries Convention]; *North-East Atlantic Fisheries Convention*; *International Convention for the Conservation of Atlantic Tunas*, done at Rio de Janeiro 14 May 1966, entered into force 21 March 1969: reprinted 6 *ILM* 293 (1967) [hereafter cited as Atlantic Tuna Convention]

¹¹⁷ *Convention on the Conservation of the Living Resources of the Southeast Atlantic*, done at Rome 23 October 1969, entered into force 24 October 1971: 801 UNTS 101

rational exploitation" of living resources.¹¹⁸ It creates a Commission with a number of responsibilities with respect to fisheries in a defined area of the Southeast Atlantic.¹¹⁹ The Commission was charged with the formulation of conservation measures, across a wide range of subjects¹²⁰, to be adopted by a two-

¹¹⁸ cf. with Article I, Baltic Fisheries Convention, which provides that the "optimum yield" is to be sought. No clarification of the scope of this term is provided. However, the Preamble of the Atlantic Tuna Convention refers to maximum sustainable catch.

¹¹⁹ Article I, Southeast Atlantic Convention; cf. Article I, Baltic Salmon Convention; the Arctic Cod Convention made do with monthly reports rather than establishing a permanent commission, as it was intended to be an arrangement of limit duration: Article IV, Arctic Cod Convention; Article V, Baltic Fisheries Convention; Article 3, North-East Atlantic Fisheries Convention; Article III, Atlantic Tuna Convention

¹²⁰ Article VIII(2) provides the Commission can make recommendations with respect to:

- (a) the regulation of the sizes of mesh of fishing nets;
- (b) the regulation of the size limits of fish that may be retained on board any fishing craft or landed, or exposed or offered for sale;
- (c) the establishment of open and closed seasons;
- (d) the establishment of open and closed areas;
- (e) the regulation of fishing gear and appliances, other than the regulation of the size of mesh of fishing nets;
- (f) the improvement and the increase of living resources, which may include artificial propagation, the transplantation and acclimatization of organisms, the transplantation of young, and predator control;
- (g) the regulation of the total catch by species, group of species or, if appropriate by regions; and
- (h) any other type of measure directly related to the conservation of all fish and other resources in the Convention Area.

cf. Article 5, Baltic Salmon Convention which sets measures of this type in its structure. Article II, Arctic Cod Convention set each State party a fixed quota, within which it could impose whatever restrictive measures it wished; Article X, Baltic Sea Fisheries Convention is in substantially similar terms; Article 7, North-East Atlantic Fisheries Convention; Article VIII, Atlantic Tuna Convention provides for recommendations to further its objectives, but

third majority vote of the parties, and able to be objected to within set periods.¹²¹ Any measures adopted are to be on the basis of "scientific investigations".¹²² States are urged to cooperate within the Commission¹²³, and for the Commission to work with FAO and other appropriate international organizations.¹²⁴ Enforcement is on the basis of flag State, although the Convention has an unusual provision noting that if a State fails to ensure the implementation of the Convention and measures made pursuant to it may lead to the application of sanctions.¹²⁵

does not specify types.

¹²¹ A period of 90 days is fixed in Article IX; cf. Articles VIII and XI, Baltic Fisheries Convention which prescribe identical majority and objection procedures; Article 8, North-East Atlantic Fisheries Convention; Article VIII, Atlantic Tuna Convention

¹²² Article VIII(1), Southeast Atlantic Convention; cf. Article 8, Baltic Salmon Convention which expressly exempts scientific investigation from the conservation requirements imposed under its Article 5; Article IX, Baltic Fisheries Convention; Articles 6 & 11, North-East Atlantic Fisheries Convention; Article VIII, Atlantic Tuna Convention

¹²³ Particularly with regard to collaboration to ensure measures adopted are effective: Article X, Southeast Atlantic Convention; cf. Article 10, Baltic Salmon Convention; Article IX, Atlantic Tuna Convention

¹²⁴ Article XI, Southwest Atlantic Convention; cf. Article 10, Baltic Salmon Convention; the Arctic Cod Convention required the parties to submit reports pursuant to it to the North-East Atlantic Fisheries Commission: Article III(2), Arctic Cod Convention; Article XV, Baltic Fisheries Convention; Article 11, North-East Atlantic Fisheries Convention; Article XI, Atlantic Tuna Convention

¹²⁵ Article X(1), Southeast Atlantic Convention; cf. Article 9, Baltic Salmon Convention; Article III(1), Arctic Cod Convention; Article XII, Baltic Fisheries Convention; Article 13, North-East Atlantic Fisheries Convention; Article IX, Atlantic Tuna Convention

A number of factors are evident in the structure and mechanisms of this Convention, and these factors are by and large evident in other contemporary regional fisheries agreements. Firstly, although the Convention makes a number of references to its "objectives", these are not clarified or defined beyond the vague statement urging conservation and rational utilisation. No formula for determining how these might be arrived at is provided. The same is true of the regional fisheries arrangements that were considered in comparison to this Convention.¹²⁶ This would indicate that there was still no clear consensus as to what the objectives of a fishery regulation regime ought to be, beyond a term like rational utilisation. Secondly, while a great range of potential conservation measures are applicable, in terms of the methods and means of fishing, there is virtually no concession to the broader environment. Restrictions as to bycatch, or limitations on related species, or the conducting of research outside the commercial species sought are not referred to, save in a catch-all provision referring to fish and other living resources in the Convention Area. This suggests there was still little support for conservation in a wider sense, directed at ecosystem and habitat protection. Thirdly, the weakness of high seas fisheries regulation is evident in an international law environment of the primacy of sovereign States. Even if a State chooses to subject itself to this regime, it cannot be bound to accept any conservation measure against its wishes. The presence of an objection procedure permits any State refuse to accept obligations,

¹²⁶ An exception to this trend can be seen in the Atlantic Tuna Convention, which uses the term "maximum sustainable catch" in its Preamble, and in the formation of recommendations under Article VIII.

even when a participant in the regulation scheme. Enforcement too is entirely under the control of flag States, further diluting the effectiveness of the regime to the level of each State's commitment and capacity to adequately enforce conservation measures.

The purpose of the High Seas Fisheries Convention, and of the regional fisheries agreements, was to ensure the regulation of otherwise unregulated fisheries. These were designed to ensure cooperation between States fishing in high seas and therefore otherwise unregulated fisheries. Their principal means of regulation was voluntary agreement between participants, coupled with flag State enforcement. In this task, some were more successful than others. Yet all were affected, and their importance diminished, by the changes in perception by the international community towards the enclosure of ocean space.¹²⁷

While the movement towards the enclosure of the seas was actuated by a variety of interests, it was in part generated by concern over the control and management of fisheries.¹²⁸ Regional cooperation to regulate high seas fisheries possessed a

¹²⁷ For example, in 1955, the ILC had noted the nature and scope of problems in fisheries conservation could only be addressed through international cooperation, particularly at a regional level: (1956) 2 *Yearbook of the International Law Commission* p.287; see also Johnston, *supra* note 1, p.413

¹²⁸ For example, it has been suggested that the preferential rights given to coastal States over adjacent high seas fisheries in the High Seas Fisheries Convention was a first tentative step towards international acceptance of the EEZ: Nguyen Quoc Dinh, "La Revendication des Droits Préférentiels de Pêche

number of distinct limitations which made States prefer to take on regulation themselves. Regional regulation could only be effective if all States active in a fishery participated in it. Third States could not be regulated because to do so would have been contrary to the principle *pacta tertiis nec nocent nec procent*¹²⁹, and therefore catch limits and quotas imposed by a regional fisheries body could have no application to third party vessels. Having unregulated activity in a regulated fishery undermined the validity of catch targets and calculations of fishing effort, thus making management of little utility. In such a situation, a coastal State was left with two choices: to encourage or cajole the third State into the regional arrangement; or to unilaterally enclose the adjacent seas under its own jurisdiction, therefore obviating the need to even consult third States in the regulation process.¹³⁰ The economic necessity of some authority, either through international

en haute mer devant les Conférences des Nations Unies sur le Droit de la Mer de 1958 et 1960" (1960) 6 *Annuaire Français de Droit International* p.77 at pp.80-87; W.C. Extavour, *The Exclusive Economic Zone: A Study of the Evolution and Progressive Development of the International Law of the Sea* (Leiden: Sijthoff, 1981) p.121; see also Burke, *supra* note 101, p.19

¹²⁹ This rule is now embodied in Article 34 of the *Vienna Convention on the Law of Treaties*, done at Vienna 22 May 1969, entered into force 27 January 1980: reprinted 8 ILM 679 (1969).

¹³⁰ An excellent example of this can be seen in the United States' reaction to a significant increase in Soviet fishing activity in waters adjacent to the United States' territorial sea in the early 1960s. The fishing was deemed to be detrimentally impacting upon the American fishing industry. Proposals to extend jurisdiction over the superadjacent waters to the continental shelf were seriously considered, but ultimately rejected as contrary to international law. Finally in 1966, the United States unilaterally extended its fisheries jurisdiction to 12 miles, and bills to extend jurisdiction further were introduced into Congress: L. Juda, *Ocean Space Rights: Developing U.S.*

cooperation or unilateral action, being asserted over high seas fisheries had been identified in the 1950s by Scott.¹³¹ The failure of the High Seas Fisheries Convention to successfully regulate ocean space beyond the territorial sea, which it could not do in the absence of high levels of participation¹³², meant that coastal States were obliged to prefer the unilateral regulation alternative¹³³, and this was evident through State practice within a few years of the Fisheries Convention entering into force.¹³⁴

Another factor tending towards enclosure of ocean space by littoral States was the promotion of their domestic fishery industries. Cooperative arrangements concluded between States do not, as a general rule, lead to the exclusion of participants to

Policy (New York: Praeger, 1975) pp.72-75

¹³¹ Scott (1973), *supra* note 43, pp.175-177

¹³² Birnie & Boyle, *supra* note 23, p.506

¹³³ This trend can be seen in the London Fisheries Convention concluded in 1964. The Convention merely seeks mutual recognition of exclusive rights of coastal States to within 12 miles of territorial sea baselines, with limited recognition of traditionally fished areas by nationals of other State parties. It did not prescribe any conservation principles, or put in place any system to produce or assess conservation measures. All such decisions are implicitly left to the coastal States: *Fisheries Convention*, done at London on 9 March 1964, entered into force 11 September 1964: 581 UNTS 58; see also O'Connell, *supra* note 2, Vol.1, pp.543-545

¹³⁴ While there are numerous examples of State practice in this direction, one of the more dramatic and significant examples was the resolution of the Organisation for African Unity (OAU) adopting the exclusive economic zone at its meeting in Yaoundé in 1972: see Attard, *supra* note 86, pp.20-25; see also ECOSOC Resolution 112 (XL), 7 March 1967. See also Birnie & Boyle, *supra* note 23, p.510

promote the industry of a particular State. Through the 1950s and 1960s, large distant water fleets began to increase in size and range, and to alter fishery patterns. The fishing fleets of particularly the Soviet Union and Japan expanded to levels that were detrimental to a number of coastal fleets, for example the United States.¹³⁵ Domestic unilateral regulation presented the opportunity to a coastal State to exclude other vessels from its fisheries, hence providing its local industry with a protected resource that it could exploit. Even where the local fleet could not immediately step in, foreign vessels could be licensed, providing an income to the coastal State that would be unavailable through international regulation.¹³⁶

For many newly independent States, the placing of large tracts of adjacent ocean under domestic jurisdiction was particularly attractive. The distant water fishing fleets were, during the 1960s and 1970s, controlled by developed States. From the 1950s, a number of Latin American States had been in dispute with distant water fishing nations (DWFNs) over access to their waters, most notably Peru and Chile

¹³⁵ See L. Juda, *Ocean Space Rights: Developing U.S. Policy* (New York: Praeger, 1975) pp.71-73

¹³⁶ If anything, the reverse was true of international regulation, in that most international fisheries bodies required a subscription to be paid by member States to subsidise the organization's operation and/or scientific programmes: for example see Article 1(3) Inter-American Tropical Tuna Convention; Article II(11) *International Convention for the High Seas Fisheries of the North Pacific Ocean*, done at Tokyo 9 May 1952, entered into force 12 June 1953: 205 UNTS 65 [hereafter cited as North Pacific Fisheries Convention]; Article 4(1) North-East Atlantic Fisheries Convention

with the United States.¹³⁷ However, the Latin American States had had limited success in attracting support for their unilateral extensions of jurisdiction to gain control over resources. With the independence of a large number of former colonial States in Africa and Asia through the 1960s, the Latin American example proved most attractive.¹³⁸ In 1972, the Organization for African Unity meeting at Yaoundé¹³⁹ adopted the concept of the "exclusive economic zone"¹⁴⁰, and during the same year the United Nations General Assembly adopted Resolution 3016 (XXVII)¹⁴¹ which sought to reaffirm that coastal States had permanent

¹³⁷ The saga is neatly described by Lugten: Lugten, *supra* note 69, pp.186-191 and pp.210-216

¹³⁸ These efforts were approved in the *Declaration of Santo Domingo* adopted 7 June 1972: reprinted in S.H. Lay, R.R. Churchill & M. Nordquist (eds), *New Directions in the Law of the Sea* (Dobbs Ferry: Oceana, 1973) Vol.1, pp.247-249. Other conferences were held in Lima, and Montevideo, all of which supported extended fisheries jurisdiction: *Declaration of the Latin American States on the Law of the Sea*, adopted 8 August 1970: reprinted 10 ILM 207 (1971); *Declaration of Montevideo on the Law of the Sea*, adopted on 8 May 1970: reprinted 9 ILM 1081 (1970). See Burke, *supra* note 101, p.18 and pp.32-34

¹³⁹ The Recommendations unanimously adopted at the meeting are reproduced in Lay, Churchill & Nordquist, *supra* note 138, pp.250-253

¹⁴⁰ Attard notes that the use of the term "exclusive economic zone" in the Kenyan working paper prepared for the Yaoundé meeting may be the first use of the term in international law: Attard: *supra* note 86, pp.20-25; Dahmani notes that a Kenyan delegate, Mr F.X. Njenga during the Asian-African Consultative Meeting held in Colombo in 1971: M. Dahmani, *The Fisheries Regime of the Exclusive Economic Zone* (Dordrecht: Martinus Nijhoff, 1987) p.18

¹⁴¹ Adopted on 18 December 1972, 102 votes for, none against, with 22 abstentions. The abstentions were drawn from developed States, and some landlocked developing States who also opposed the notion of enclosure of the high seas.

sovereignty over the resources of the seabed and subsoil within their jurisdiction, and in the superadjacent waters.¹⁴²

Finally, enclosure of the sea was consistent with the assertion of jurisdiction over the continental shelf. Through the early 1950s, and subsequently under the Convention on the Continental Shelf¹⁴³ opened for signature in 1958, littoral States were able to assert jurisdiction over extensive areas of seabed. This assertion of jurisdiction was principally directed at oil and gas exploitation, but also included sedentary marine living resources.¹⁴⁴ International acceptance of the notion to regulate such resources meant that the regulation of non-sedentary marine living resources did not require a paradigm-shift in the way States approached the treatment of such matters offshore.

Enclosure, or "creeping jurisdiction"¹⁴⁵ as it was later described, was particularly

¹⁴² On the growing efforts to obtain control over resources, both offshore and land-based, by developing States during this period, culminating in the New International Economic Order (NIEO) see N. Schrijver, *Sovereignty over Natural Resources: Balancing Rights and Duties* (Cambridge: Cambridge University Press, 1997) pp.82-100

¹⁴³ *Convention on the Continental Shelf*, done at Geneva 29 April 1958, entered into force 10 June 1964: 499 UNTS 285 [hereafter cited as the Continental Shelf Convention]

¹⁴⁴ Article 2(4), Continental Shelf Convention

¹⁴⁵ This term has been employed by a number of publicists to describe steady increase in jurisdictional reach of States through the 1960s and 1970s and beyond: for example see J.A. Knauss, "Creeping Jurisdiction and Customary International Law" (1985) 15 *Ocean Development and International Law*

popular among developing States, both the newly independent States and the older Latin American States. Their objective was to reserve resources offshore to themselves, whether these resources were living or non-living, and to maximise the return on these resources. While these moves did not have an immediate impact in global terms, moves towards enclosure gradually gathered pace. By the mid-1960s there was a broad consensus that fisheries jurisdiction could extend beyond the territorial sea, although the dimensions of valid regulation were still open to some dispute.¹⁴⁶

The initial movement to enclose ocean space did not advance the cause of fisheries management in international law. States assumed jurisdiction over vast areas, but did so without reference to any conservation standard or objective. States were not placed under an obligation to make decisions based upon scientific data, or even to collect scientific data on the state of the fisheries within their newly acquired jurisdictions. For many newly independent developing States the collection of such data was beyond their capacities, enforcement of fisheries laws were beyond their capacity, and in some cases even the exploitation of the areas of extended maritime jurisdiction were beyond their capacities. However, by the 1970s, it was clear that

p.209; B. Kwiatkowska, "Creeping Jurisdiction Beyond 200 Miles in the Light of the 1982 Law of the Sea Convention and State Practice" (1991) 22 *Ocean Development and International Law* p.153

¹⁴⁶ For example, Burke notes that the number of States claiming an extended jurisdiction over fisheries beyond 12 miles had increased from 19 in 1960 to 70 in 1970: Burke, *supra* note 101, p.15

extended maritime jurisdiction over fisheries was a valid exercise in international law, and as much had been explicitly confirmed by the International Court of Justice.¹⁴⁷

Ultimately, by the genesis of UNCLOS III in 1973, there was broad acceptance of the concept of the exclusive economic zone (EEZ), which permitted regulation of economic activity offshore to a distance of 200 nautical miles.¹⁴⁸ With this

¹⁴⁷ *Fisheries Jurisdiction Case* ICJ Reports 1974 p.3

¹⁴⁸ This is evident from the statements in support of the EEZ and of a widened territorial sea by State participants at the second session of UNCLOS III held in Caracas in 1974: United Nations, *Third United Nations Conference on the Law of the Sea: Official Records* (New York: United Nations, 1975) Vol.1 [hereafter cited as *Official Records*]; Albania at pp.99-101; Argentina at pp.73-75; Australia at pp.87-88; Bahamas at pp.131-132; Bahrain at p.174; Bangladesh at pp.101-102; Barbados at p.63; Belgium at pp.166-167; Bolivia at pp.105-106; Bulgaria at pp.149-150; Canada at pp.97-98; Colombia at pp.104-105; Costa Rica at pp.59-60; Cyprus at p.174; Czechoslovakia at pp.114-115; Democratic Yemen at pp.125-126; Denmark at pp.136-137; Dominican Republic at pp.180-181; East Germany at pp.79-80; Egypt at pp.75-76; Equatorial Guinea at pp.145-146; Fiji at pp.113-114; Finland at pp.129-130; France at pp.154-155; Gambia at pp.158-159; Greece at pp.128-129; Honduras at pp.81-82; Hungary at pp.142-143; Iceland at pp.123-124; India at pp.95-97; Iran at pp.71-73; Iraq at pp.148-149; Ireland at pp.159-160; Israel at pp.150-152; Italy at pp.179-180; Jamaica at pp.98-99; Japan at pp.181-182; Kenya at pp.82-84; Khmer Republic at pp.161-163; Kuwait at pp.155-156; Lebanon at pp.135-136; Liberia at pp.137-138; Libya at pp.132-133; Mauritius at p.108; Mexico at pp.195-198; Mongolia at pp.91-92; Morocco at pp.178-179; Nicaragua at pp.109-110; Nigeria at pp.139-140; Norway at pp.85-86; Oman at p.152; Pakistan at pp.146-147; Paraguay at p.161; Poland at pp.117-118; Romania at pp.127-128; Saudi Arabia at p.144; Senegal at pp.164-165; Sierra Leone at pp.175-176; South Korea at pp.90-91; South Vietnam at pp.64-65; Sweden at pp.76-77; Switzerland at pp.143-144; Thailand at pp.147-148; Trinidad and Tobago at pp.70-71; Tunisia at pp.153-154; Uganda at p.168; United Arab Emirates at pp.141-142; United Kingdom at pp.110-113; Upper Volta at pp.185-186;

acceptance came a growing realization that if States were to be given control over such a wide areas, they should owe the international community a duty to ensure the renewable resources of the EEZ were exploited in a rational and sustainable fashion, rather than the absolute control States exerted over the manner of their exploitation of the territorial sea, or their land territory. The duty was particularly necessary given that stocks could be found in areas where the EEZs of neighbouring States joined, or between the EEZ of a coastal State and the high seas. The accommodation that was reached is found in the text of the 1982 Law of the Sea Convention, and represents the most significant expression of the maximum yield model, given it appears in the key international convention.

1982 Law of the Sea Convention

The 1982 Law of the Sea Convention was intended to provide a complete resolution to all of the issues affecting the law of the sea. Its negotiation took place over an eight year period at the third United Nations Conference on the Law of the Sea (UNCLOS III), resulting in a convention of 320 articles, and 9 annexes. While the hope that the Law of the Sea Convention would codify the law of the sea has not

Uruguay at pp.118-119; USSR at pp.68-69; Venezuela at pp.188-189; West Germany at p.138; Western Samoa at pp.84-85; Yemen at pp.116-117; Zambia at pp.130-131. In addition several States supported extended territorial seas that permitted navigation but reserved economic rights in much the same fashion as an EEZ: *Ibid.*; Brazil at pp.60-61; Guinea at pp.63-64; Chile at p.117; Ecuador at pp.121-122; Malta at p.158; Panama at p.145; Peru at pp.156-158; Somalia at pp.186-187 [hereafter cited as Official Records]

eventuated¹⁴⁹, it is certainly the most substantial source of international law on the subject, and provides much to consider in the context of the management of marine living resources.

The Law of the Sea Convention deals with marine living resource management in a largely piecemeal fashion, reflecting the continuing concern of the State parties with jurisdiction. Given that the duty of States to pursue management objectives is affected by the extent of their jurisdiction, it is appropriate to consider the management principles espoused in the Law of the Sea Convention using jurisdiction as the frame of reference, as this largely reflects the manner in which the subject is dealt with in the Convention. This is a logical approach as while the Law of the Sea Convention does deal with issues of marine management and the principles upon which exploitation decisions ought to be based, the application of these principles to fisheries is not uniform. The approaches to management questions varies markedly depending upon the jurisdictional control of a State.

¹⁴⁹ At the present, two supplementary conventions designed to rectify limitations in the original have been concluded, namely *Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982*, done at New York on 28 July 1994, entered into force on 16 November 1994 (provisionally); on 28 July 1996 (definitively): reprinted 33 ILM 1309 (1994); *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, done at New York on 4 December 1995, yet to enter into force: reprinted 34 ILM 1542 (1995)

Territorial Sea and Internal Waters

States are provided with no guidance as to what basis exploitation of the territorial sea or internal waters is to take place, leaving coastal States absolute and unfettered control over the management scheme they might wish to implement. Article 2 of the Law of the Sea Convention provides that a coastal State has sovereignty over its territorial sea, beyond its land territory and internal waters.¹⁵⁰ Thus the coastal State is to determine for itself what management principles it might wish to apply within its territorial sea, as an exercise of its sovereignty.¹⁵¹ Beyond a general obligation to "protect and preserve the marine environment" in Article 192, there is no attempt to circumscribe the right of a State to determine its own management policies and procedures beyond this general duty. Even in this context, the primacy of State sovereignty to determine the best management approach to achieve this broad aim is expressly reaffirmed in Article 193.¹⁵²

Such a situation essentially carries on the situation that existed under the 1958 Conventions. Although the High Seas Fisheries Convention did give some limited

¹⁵⁰ Birnie & Boyle, *supra* note 23, p.518

¹⁵¹ Burke, *supra* note 101, p.30

¹⁵² McConnell and Gold note that these two articles are likely to represent norms of customary international law: M.L. McConnell & E. Gold, "The Modern Law of the Sea: Framework for the Protection and Preservation of the Marine Environment?" (1991) 23 *Case Western Reserve Journal of International Law* p.83 at pp.88-90

guidance with respect to management principles¹⁵³, the Territorial Sea Convention avoided all reference to management principles. The same position has been maintained, even with the extension of the territorial sea to a virtually undisputed¹⁵⁴ 12 nautical miles, thereby enclosing a much greater proportion of the world's existing commercial fisheries.¹⁵⁵ To have provided a set of management principles with application to the territorial sea would have marked a direct attack on a State's sovereignty over sea areas, in circumstances where the only substantial concession made by States to their sovereignty was to confirm existing international law rights of innocent passage.¹⁵⁶

¹⁵³ See above at p.80

¹⁵⁴ Schrijver notes that by 1996 only 10 African and Latin American States persisted in claims to territorial seas to 200 miles, while only eight States maintained narrower claims. The majority of States had now adopted 12 mile territorial seas: Schrijver, *supra* note 142, p.205

¹⁵⁵ Tsamenyi and Aqorau note that although only 35 percent of the world's oceans are covered by EEZs, these areas account for 95 percent of the world's catch of marine fish: M. Tsamenyi and T. Aqorau, "Fishing Rights and Responsibilities at Sea: Analysis of Relevant Provisions of the United Nations Conference on the Law of the Sea" in M. Tsamenyi and M. Herriman (eds), *Rights and Responsibilities in the Marine Environment: National and International Dilemmas* (Wollongong: Centre for Maritime Policy, 1996) p.67; The FAO estimates that the level of fishing beyond 200 miles has increased from being 5% of total fisheries effort to between 8% and 10% since the widespread introduction of EEZs: *Some High Seas Fisheries Aspects Relating to Straddling Fish Stocks and Highly Migratory Fish Stocks*, FAO Fisheries Circular No.879 (Rome: FAO, 1994) p.1 [hereafter cited as FAO on High Seas]

¹⁵⁶ J.A. de Yturriaga, *The International Regime of Fisheries: From UNCLOS 1982 to the Presential Sea* (The Hague: Martinus Nijhoff, 1997) pp.99-103

Exclusive Economic Zone

UNCLOS III

Beyond the territorial sea, the Convention is of more assistance, as extent of rights that can be validly asserted by coastal States diminish. The exclusive economic zone (EEZ), described in Part V of the Law of the Sea Convention, permits States to assert their jurisdiction over economic activities in the waters and seabed within 200 nautical miles of their coasts. However together with the grant of jurisdictional competence are also duties in respect of conservation and utilization which do circumscribe State action to some extent.

The evolution of the regime of the EEZ has been well documented¹⁵⁷, however it is worth exploring the development of the management provisions in Part V, as it is instructive in the purport and intention of the existing articles. As already noted above, the EEZ was the product of moves in the late 1960s and early 1970s towards the enclosure of ocean space by coastal States. While the concept itself soon achieved a wide degree of acceptance, both at UNCLOS III and in the Seabed Committee that preceded the Conference, there was much debate as to the scope of rights a coastal State would have jurisdiction over within the EEZ.¹⁵⁸ Similarly,

¹⁵⁷ For example see Dahmani, *supra* note 140, pp.38-42; Attard, *supra* note 86, pp.1-31; F. Orrego Vicuña, *The Exclusive Economic Zone* (Cambridge: Cambridge University Press, 1989) pp.3-15

¹⁵⁸ R.L. Friedheim, "Fishing Negotiations at the Third United Nations Conference on the Law of the Sea" (1991) 22 *Ocean Development and International Law* p.209 at pp.209-228

the International Court of Justice made it apparent in the *Fisheries Jurisdiction Case* that a coastal State should, at the very least, have preferential rights to the adjacent fisheries beyond its territorial sea¹⁵⁹, although the Court was loathe to develop any notion of the EEZ while the issue was effectively *sub specie legis ferendae* at UNCLOS III.¹⁶⁰

Early in the negotiations¹⁶¹, it was apparent that the interests of land-locked and geographically disadvantaged States¹⁶², and those of the distant water fishing nations, would have to be accommodated.¹⁶³ The most popular approach to this

¹⁵⁹ *Fisheries Jurisdiction Case* ICJ Reports 1974 p.3 at pp.30-31

¹⁶⁰ *Fisheries Jurisdiction Case* ICJ Reports 1974 p.3 at pp.23-24

¹⁶¹ In this context from the Second Session of UNCLOS III, held in Caracas, Venezuela, between 20 June and 24 August 1974. The issue of the EEZ and the fisheries regime pursuant to it was dealt with by Committee II: see generally *Third United Nations Conference on the Law of the Sea. Report of the Australian Delegation* (Canberra: AGPS, 1974) Second Session, pp.20-24

¹⁶² Koh and Jayakumar list the LL/GDS Group as comprising some 29 land-locked and 26 geographically disadvantaged States: T.T.B. Koh & S. Jayakumar, "The Negotiating Process of the Third United Nations Conference on the Law of the Sea" in M.H. Nordquist (ed.), *United Nations Convention on the Law of the Sea 1982: A Commentary* (Dordrecht: Martinus Nijhoff, 1985) Vol.1, p.29 at pp.72-73

¹⁶³ States who favoured accommodation of the LL/GDS group, but without specifying what form concessions to this group might take included Yugoslavia, Official Records, *supra* note 148, Vol.2, p.174; Paraguay: *Ibid.*, Vol.2, p.175; Zaire: *Ibid.*, Vol.2, pp.175-176 and p.227; Barbados: *Ibid.*, Vol.2, p.177; Trinidad & Tobago: *Ibid.*, Vol.2, p.179; Laos: *Ibid.*, Vol.2, p.180; Switzerland: *Ibid.*, Vol.2, pp.180-181; Sweden: *Ibid.*, Vol.2, p.181; Finland: *Ibid.*, Vol.2, p.181; Bangladesh: *Ibid.*, Vol.2, p.182; Kenya: *Ibid.*, Vol.2, pp.183-184; Liberia: *Ibid.*, Vol.2, p.184; Sri Lanka: *Ibid.*, Vol.2,

accommodation was to indicate that unused capacity in coastal State fisheries would be made available to other States. Unused capacity would be the total allowable catch for a State's EEZ less the actual catch of the coastal State.¹⁶⁴ Questions as to the nature of appropriate conservation measures¹⁶⁵, and the role of existing or

p.186; China: *Ibid.*, Vol.2, p.187; Togo: *Ibid.*, Vol.2, p.188; Tonga: *Ibid.*, Vol.2, p.190; Burundi: *Ibid.*, Vol.2, p.191; India: *Ibid.*, Vol.2, p.191; Cuba: *Ibid.*, Vol.2, p.192; Thailand: *Ibid.*, Vol.2, pp.192-193; Romania: *Ibid.*, Vol.2, p.194; Pakistan: *Ibid.*, Vol.2, p.195; Korea: *Ibid.*, Vol.2, p.196; Uganda: *Ibid.*, Vol.2, pp.197-198; Bolivia: *Ibid.*, Vol.2, p.199; Bhutan: *Ibid.*, Vol.2, p.201; Poland: *Ibid.*, Vol.2, p.202; Tunisia: *Ibid.*, Vol.2, p.204; Egypt: *Ibid.*, Vol.2, p.204; Byelorussian S.S.R.: *Ibid.*, Vol.2, p.205; Belgium: *Ibid.*, Vol.2, p.206; Albania: *Ibid.*, Vol.2, pp.206-207; Indonesia: *Ibid.*, Vol.2, pp.207-208; Uruguay: *Ibid.*, Vol.2, pp.208-209; Democratic Yemen: *Ibid.*, Vol.2, p.209; Turkey, *Ibid.*, Vol.2, p.213; Haiti: *Ibid.*, Vol.2, p.215; Afghanistan: *Ibid.*, Vol.2, pp.215-216; Japan: *Ibid.*, Vol.2, pp.217-218; Jamaica: *Ibid.*, Vol.2, pp.218-219; Lebanon: *Ibid.*, Vol.2, pp.221-222; Algeria: *Ibid.*, Vol.2, pp.222-223; Austria: *Ibid.*, Vol.2, P.223; Iraq: *Ibid.*, Vol.2, pp.225-226; Peru: *Ibid.*, Vol.2, p.230; Ghana: *Ibid.*, Vol.2, pp.232-233

¹⁶⁴ For example, see the statement by the delegate of New Zealand at the 21st meeting of the Second Committee at UNCLOS III in July 1974: Official Records, *supra* note 148, Vol.2, p.170; the German Democratic Republic: *Ibid.*, Vol.2, p.173; Israel: *Ibid.*, Vol.2, p.178; France: *Ibid.*, Vol.2, p.185; Ghana: *Ibid.*, Vol.2, p.188; Western Samoa: *Ibid.*, Vol.2, p.189; India: *Ibid.*, Vol.2, p.191; Ukrainian S.S.R.: *Ibid.*, Vol.2, p.201; South Africa: *Ibid.*, Vol.2, pp.211-212; Spain: *Ibid.*, Vol.2, p.216; the USSR: *Ibid.*, Vol.2, p.221; Colombia was sceptical of those States advancing this view: *Ibid.*, Vol.2, p.225

¹⁶⁵ For example, some States indicated a general duty to conserve species ought to be imputed: the delegates of Madagascar: Official Records, *supra* note 148, Vol.2, p.175; Paraguay: *Ibid.*, Vol.2, p.175; Congo, *Ibid.*, Vol.2, p.176. On the other hands some States preferred unrestricted sovereign rights for coastal States: Dahomey, *Ibid.*, Vol.2, pp.177-178; Mauritania, *Ibid.*, Vol.2, p.178. Spain indicated the scope of measures it thought appropriate, including minimum catch sizes, gear and season restrictions, and quotas: *Ibid.*, Vol.2, p.216; Denmark sought special recognition for anadromous stocks: *Ibid.*, Vol.2, p.220; South Africa: *Ibid.*, Vol.226-227

future international fisheries organizations needed to be clarified.¹⁶⁶

Reaching a consensus on management principles for fisheries initially proved somewhat problematic. A range of different positions were advanced by delegations during the early meetings of the Second Committee which consider the nature of the EEZ regime. Some States, such as Nigeria¹⁶⁷, a group of European Community States¹⁶⁸, and an Eastern European group¹⁶⁹ preferred to adopt maximum sustainable yield, or semantic variations of apparently the same

¹⁶⁶ For example, Nigeria favoured the notion that coastal States be obliged to take account of the recommendations of appropriate regional fisheries bodies: Official Records, *supra* note 148, Vol.2, p.172 and p.232; China expressly supported draft articles submitted by Nigeria: *Ibid.*, Vol.2, p.187; see also the United States: *Ibid.*, Vol.2, p.190; India: *Ibid.*, Vol.2, p.191; Argentina: *Ibid.*, Vol.2, p.196; Poland: *Ibid.*, Vol.2, p.202; Belgium: *Ibid.*, Vol.2, p.206. Singapore supported the concept of regional or sub-regional EEZs: *Ibid.*, Vol.2, p.211; Japan: *Ibid.*, Vol.2, pp.217-218; the USSR: *Ibid.*, Vol.2, p.221; Canada: *Ibid.*, Vol.2, pp.224-225; South Africa: *Ibid.*, Vol.2, pp.226-227; Denmark: *Ibid.*, Vol.2, p.228; Peru: *Ibid.*, Vol.2, p.230; Tunisia: *Ibid.*, Vol.2, pp.231-232; Norway: *Ibid.*, Vol.2, p.232; Ghana: *Ibid.*, Vol.2, pp.232-233; Finland: *Ibid.*, Vol.2, p.233

¹⁶⁷ Official Records, *supra* note 148, Vol.2, p.172

¹⁶⁸ Excluding Britain. See A/Conf.62/C.2/L.40, 5 August 1974: reprinted in R. Platzöder (ed.), *Third United Nations Conference on the Law of the Sea: Documents*, (Dobbs Ferry: Oceana, 1982) Vol.5, p.160

¹⁶⁹ USSR, Bulgaria, German Democratic Republic, Poland, the Ukrainian SSR and the Byelorussian SSR. See A/Conf.62/C.2/L.38, 5 August 1974: reprinted in R. Platzöder (ed.), *Third United Nations Conference on the Law of the Sea: Documents*, (Dobbs Ferry: Oceana, 1982) Vol.5, p.157

concept.¹⁷⁰ Other States advocated optimum sustainable yield, although they did so without indicating the criteria which might make a particular catch level optimal.¹⁷¹ While committing themselves to conservation, some States chose not to express how such an objective was to be achieved, beyond vague references to science.¹⁷² Interestingly, the Guyanan delegation explicitly rejected maximum sustainable yield, and, *a fortiori*, optimum yield, as being virtually impossible to scientifically determine. Guyana was also critical of international fisheries organizations that sought a role in waters subject to national jurisdiction, noting they were *de facto* exclusionary in nature, represented a convergence of exaggerated unilateral claims, and that their record of achievement in the field of conservation

¹⁷⁰ Ireland also supported MSY, and made specific reference to anadromous stocks as a special case: Official Records, *supra* note 148, Vol.2, p.181; Britain advocated "the maximum utilisation principle": *Ibid.*, Vol.2, p.200; Tanzania sought "full utilization": *Ibid.*, Vol.2, p.183; the United States also referred to "full utilization and conservation": *Ibid.*, Vol.2, p.190; the German Democratic Republic referred to "100 per cent of the admissible catch": *Ibid.*, Vol.2, p.173; South Africa supported MSY: *Ibid.*, Vol.2, pp.211-212; Spain: *Ibid.*, Vol.2, p.216; the USSR advocated "rational utilization" which would "utilize fish resources to the full": *Ibid.*, Vol.2, p.221; Canada preferred "maximum utilization": *Ibid.*, Vol.2, pp.224-225 and p.231; Finland: *Ibid.*, Vol.2, p.233

¹⁷¹ India preferred "optimum utilization": Official Records, *supra* note 148, Vol.2, p.191; Australia supported "full optimum yield": *Ibid.*, Vol.2, p.205; Argentina indicated it believed that "[o]nly the coastal State could determine the optimum catch of fish": *Ibid.*, Vol.2, p.196; the Ivory Coast favoured "optimum exploitation": *Ibid.*, Vol.2, p.197; Burma: *Ibid.*, Vol.2, p.224

¹⁷² West Germany sought "proper management and conservation": Official Records, *supra* note 148, Vol.2, p.192; Nepal supported "scientific management": *Ibid.*, Vol.2, pp.205-206

and management was inadequate in the light of contemporary requirements.¹⁷³

By the third session of UNCLOS III in 1975, it was clear that a consensus position had emerged. The Informal Single Negotiating Text presented by the Chairman of the Second Committee adopted a formula of adopting maximum sustainable yield, as determined by the coastal State, with possible qualifications in the context of "relevant environmental and economic factors". These could include the economic needs of fishing communities, special requirements of developing States, fishing patterns, the interdependence of stocks, and minimum international standards.¹⁷⁴ Effectively, this amounted to an adoption of optimum utilization, with each coastal State to determine itself which factors social and or economic factors to modify the MSY. Ultimately, this consensus was retained, and is reflected by almost identical wording in the Informal Composite Negotiating Text¹⁷⁵, and finally in the Convention itself when adopted in December 1982.¹⁷⁶ Accordingly, it is appropriate to draw to the Convention's provisions, and to examine them in some detail.

¹⁷³ Official Records, *supra* note 148, Vol.2, p.208

¹⁷⁴ Article 50, Informal Single Negotiating Text, A/Conf.62/WP.8/Part II, 7 May 1975: reprinted in R. Platzöder (ed.), *Third United Nations Conference on the Law of the Sea: Documents*, (Dobbs Ferry: Oceana, 1982) Vol.1, p.20

¹⁷⁵ Article 61, Informal Composite Negotiating Text, A/Conf.62/WP.10. This text is dated 15 July 1977. See also Article 61, Informal Composite Negotiating Text/Revision 2, A/Conf.62/WP/10/Rev.2+, 11 April 1980.

¹⁷⁶ See also Article 61, Draft Convention on the Law of the Sea, A/Conf.62/L.78, 28 August 1981.

Provisions in the Law of the Sea Convention

The principal provisions in respect of conservation and management of living resources within the EEZ are Articles 61 and 62. These two articles contain the core provisions for the management and operations of fisheries in the EEZ, and indicate the principles underpinning decision-making, and are supplemented by a series of provisions directed at specific issues as subsets of the overall living resource management arrangements.¹⁷⁷

Article 61 provides that it is for the coastal State to determine the allowable catch for the living resources in its EEZ.¹⁷⁸ It is significant that this first duty on the State is to calculate the permissible catch, as by giving this task to the State, it is clear that there is no attempt to dilute national control, or to provide a compulsory role of any international body.¹⁷⁹ This is consistent with the primacy of State sovereignty, or in this particular instance, the exercise of the sovereign rights of the

¹⁷⁷ The areas encompasses highly migratory species (Article 64), straddling stocks (Article 63), anadromous species (Article 66), catadromous species (Article 67) and marine mammals (Article 65).

¹⁷⁸ Article 61(1), Law of the Sea Convention

¹⁷⁹ Oda notes that the strength of the coastal State position was supported by developed States early in UNCLOS III once they realised that the adoption of the EEZ concept was inevitable: S. Oda, "Fisheries under the United Nations Convention on the Law of the Sea" (1983) 77 *American Journal of International Law* p.739 at p.743; see also de Yturriaga, *supra* note 156, p.117

coastal State.¹⁸⁰

Article 61(3) then specifies what is encompassed by the objective of conservation measures that can be imposed by a coastal State in the calculation of its allowable catch. Populations of living resources are to be maintained at, or restored to the maximum sustainable yield, as qualified by relevant environmental and economic factors. These limitations expressly include:

...the economic needs of coastal fishing communities and the special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards...¹⁸¹

While the term "maximum sustainable yield" is used in the text of the article, it is clear the qualifications to it amount to a substantial change in the real objective being sought. The qualifications, if directed towards an economic objective, could mean the setting of maximum economic yield as the appropriate level. Alternatively, the stressing of social factors, such as maximising community employment could mean that neither maximum economic yield nor maximum

¹⁸⁰ Article 56(1), Law of the Sea Convention grants the coastal State "sovereign rights" for the purpose of exploring and exploiting, conserving and managing the natural resources of its EEZ. This is clearly less than having sovereignty over these resources, as the nature of the State's control over the resources is limited. Nevertheless, the use of the term "sovereign" in reference to the grant of rights emphasises the close connection between the State and the resources: see O'Connell, *supra* note 2, Vol.1, pp.576-578; Attard, *supra* note 86, p.150; Orrego Vicuña, *supra* note 157, pp.67-69; de Yturriaga, *supra* note 156, pp.112-115

¹⁸¹ Article 61(3), Law of the Sea Convention

sustainable yield was the objective, but rather a social outcome with no direct relation between the characteristics of the fishery and to the quantum of fish taken. Churchill and Lowe take the view the qualifications give a coastal State an extremely wide discretion in the exercise of its power, to the extent it could legitimately set "practically any size of allowable catch."¹⁸² While this needs to be qualified to the extent that no catch limit beyond the MSY would be consistent with the Law of the Sea Convention, as to do so would prevent the maintenance or restoration of populations to levels that can produce an MSY¹⁸³, the point is well made in the context of any limit less than the MSY.¹⁸⁴

As such, a large degree of discretion over management decisions is still left to the coastal State, while at the same time underpinning that discretion with the desire to seek to maximise the level of fishing towards the MSY.¹⁸⁵ Each State can seek to

¹⁸² Churchill & Lowe, *supra* note 82, p.233

¹⁸³ Article 61(3), Law of the Sea Convention

¹⁸⁴ cf. with the view of Clingan who takes the flexibility given to the coastal State to permit the level of the catch to fall below or exceed the biological yield of the stock: T.A. Clingan, "An Overview of Second Committee Negotiations in the Law of the Sea Conference" (1984) 63 *Oregon Law Review* p.53 at.57

¹⁸⁵ Kwiatowska makes the point that flexibility in the application of the MSY to ensure adequate conservation and management of stocks. She quotes Koers in noting that even prior to UNCLOS III, limitations in the MSY concept were recognised, and the introduction of a degree of flexibility addressed these limitations: B. Kwiatowska, *The 200 Mile Exclusive Economic Zone in the New Law of the Sea* (Dordrecht: Martinus Nijhoff, 1989) pp.48-49; see also Hey, *supra* note 66, p.48

qualify the MSY in a manner best fitting its individual circumstances. This amounts to the promotion of the optimum sustainable yield, where each participant subjectively determines what factors will make the level set "optimum".¹⁸⁶

Using the appropriate objective, the coastal State is obliged to set the total allowable catch (TAC)¹⁸⁷ for the stocks within its EEZ.¹⁸⁸ This is a positive duty on the coastal State, and it is notable that the Convention does not purport to limit the duty to stocks to which the coastal State's nationals were harvesting, or even actively harvested commercial species. The duty, in theory at least, applies to all the living resources of the EEZ, regardless of whether they are presently fished or otherwise. However, as noted above, there is a substantial discretion vested in the coastal State, by virtue of its recourse to non-objective and non-biological factors in the calculation of an appropriate catch. That a range of factors going towards the calculation of a TAC were necessary in the complex business of

¹⁸⁶ The Law of the Sea Convention itself indicates this in Article 62(1) with references to the objective of "optimum utilization". See also Attard, *supra* note 86, pp.157-159; although cf. Orrego Vicuña who notes that the term MSY with qualifications was preferred to the term optimum sustainable yield because the latter implied greater limitations on coastal State fisheries policies: Orrego Vicuña, *supra* note 157, p.51

¹⁸⁷ The TAC was usefully defined at the Geneva Session of UNCLOS III as that "catch which when taken in any one year will best enable the objectives of fisheries management (for example optimum long term yield) to be achieved": Doc GE 76.64093, April 1975; cited by Tsamenyi & Aqorau, *supra* note 155, p.69

¹⁸⁸ Article 61(1), Law of the Sea Convention states:
The coastal State shall determine the allowable catch of the living resources of its exclusive economic zones.

determining the most effective catch level is undeniable¹⁸⁹, but a formula with such a large degree of discretion vested in a coastal State clearly had additional merit to many States.

The State is also extolled in Article 61(2) into making management decisions to take into account "the best scientific evidence available to it".¹⁹⁰ At first blush, this would seem to impose a positive obligation upon a coastal State to undertake scientific investigation of stocks about which it might wish to make management decisions, but that is not the case. The scientific evidence to be used in making decisions is to be the best available. If very little data is available, so long as it can be characterised as the best of what exists, that would appear to suffice.¹⁹¹ This limitation has the advantage for developing States of requiring no more from them in terms of the duty to research than their capacity. However, it has the ancillary effect of imposing no substantive obligation to undertake research, merely to use the best available data, regardless of whether this data was the best possible for the State concerned to have obtained.

¹⁸⁹ See S. Garcia, J. Gulland and E. Miles, "The New Law of the Sea and Access to Surplus Fish Resources" (1986) 10 *Marine Policy* p.192 at p.197; see also Burke, *supra* note 101, p.48

¹⁹⁰ Article 61(2), Law of the Sea Convention

¹⁹¹ Burke observes that the obligation is only to make use of accessible data, not an absolute duty to pursue data and information: Burke, *supra* note 101, pp.56-57; W.T. Burke, "US Fishery Management and the Law of the Sea" (1982) 76 *American Journal of International Law* p.24 at p.34; see also Dahmani, *supra* note 140, pp.44-45

Burke also notes that while such scientific data that is available must be taken into account, it does not necessarily have to form the basis of any management decisions that are made.¹⁹² This duty to only "take account" provides the coastal State with even further freedom of action, since it can rely upon other considerations in calculating an appropriate catch limit, without the necessity of being compelled to justify its decision upon objective scientific criteria.¹⁹³

While a coastal State might have great flexibility in using scientific data in the calculation of the TAC, it is difficult to see that the Law of the Sea Convention permits the complete abdication of scientific research in relation to harvested species for extended periods. Articles 61 and 62 are designed to promote the conservation and optimum utilization of stocks. The long term absence of meaningful data would make it extremely difficult for a State to be certain it was meeting these objectives, and would suggest a lack of good faith in the application of the Law of the Convention.¹⁹⁴ Thus while sporadic or inadequate scientific data might be sufficient for a coastal State to discharge its duty, it cannot give up the collection of scientific data on the fisheries under its control forever.¹⁹⁵

¹⁹² Burke, *supra* note 101, p.56

¹⁹³ See Dahmani, *supra* note 140, p.45

¹⁹⁴ Article 26, Vienna Convention on the Law of Treaties

¹⁹⁵ Burke, *supra* note 101, p.57

With whatever scientific evidence is the best available, the coastal State can implement "proper conservation and management measures" to ensure living resources are not endangered by over-exploitation. The emphasis upon freedom of State action is again found, as the types of measures that could be regarded as "proper" are not specified, and are presumably at the discretion of the coastal State. As such, a State could have any method, including catch limits, quotas, closed seasons, gear restrictions and bycatch regulations, to seek its objective of conservation.¹⁹⁶

Article 62 of the Law of the Sea Convention substantiates the nature of the rights provided by Article 61, and confirms that a coastal State has a wide range of methods open to it to meet its management objectives. It expressly endorses the right of a littoral State to "promote the objective of optimum utilisation" without prejudice to Article 61, reinforcing the interpretation that the coastal State possesses a sizeable discretion to vary the achievement of the MSY in its own perceived interests. However Article 62 provides that the promotion of the objective of optimum utilization must be read subject to Article 61.¹⁹⁷ This would appear to remove any possibility of an argument by a coastal State that it might be in its interests to exceed the MSY.¹⁹⁸ That qualification aside, it seems that control

¹⁹⁶ The nature of these regulations is discussed below.

¹⁹⁷ Clingan, *supra* note 184, p.57

¹⁹⁸ Dahmani, *supra* note 140, p.51; Burke, *supra* note 101, p.61

over catch levels and objectives is largely left to the discretion of the coastal State.¹⁹⁹

The impact of this discretion is emphasised when considering its impact upon the effect of Article 62(2). This article provides that a coastal State which lacks the capacity to harvest the entire allowable catch should give access to foreign vessels, subject to its own regulation. While this would seem to compel the coastal State to admit foreign vessels, in practice the flexibility given to a coastal State by the use of optimum utilization in calculating the total allowable catch, the level of foreign fishing is, to a large extent, left to the State to determine.²⁰⁰ This is emphasised when considered in conjunction with Article 62(3) which provides that where a foreign State vessel is permitted access to a coastal State EEZ, the latter shall take into account all relevant factors.²⁰¹ Among these factors are the significance of

¹⁹⁹ Burke notes that such a conclusion is consistent with the dispute resolution procedures set down in Part XV of the Law of the Sea Convention. These expressly exempt disputes over the exercise of a coastal State's sovereignty over living resources under Article 297(3)(a): Burke, *supra* note 101, p.62

²⁰⁰ Oda goes further, suggesting that "does not have the capacity to harvest" might mean "does not care to harvest", meaning that even the least developed States have a great deal of discretion: Oda, *supra* note 179, pp.743-745; see also W.T. Burke, "Highly Migratory Species in the New Law of the Sea" (1984) 14 *Ocean Development and International Law* p.273 at pp.277-278

²⁰¹ Article 62(3), Law of the Sea Convention provides:

In giving access to other States to its exclusive economic zone under this article, the coastal State shall take into account all relevant factors, including, *inter alia*, the significance of the living resources of the area to the economy of the coastal State and its other national interests, the provisions of articles 69 and 70, the requirements of

the living resources to the economy of the coastal State and its other national interests.²⁰² With these considerations to rely upon, the coastal State's discretion to refuse or severely limit access would seem almost unfettered.²⁰³

Article 62 continues by listing a non-exhaustive set of criteria that can be the subject of regulation to achieve the desired yield. This list represents the battery of measures available to the coastal State²⁰⁴, and is worthy of restatement here:

- (a) licensing of fishermen, fishing vessels and equipment, including the payment of fees and other forms of remuneration, which, in the case of developing coastal States, may consist of adequate compensation in the field of financing, equipment and technology relating to the fishing industry;
- (b) determining the species which may be caught, and fixing quotas of catch, whether in relation to particular stocks or groups of stocks or catch per vessel over a period of time or to the catch by nationals of any State during a specified period;

developing States in the subregion or region in harvesting part of the surplus and the need to minimize economic dislocation in States whose nations have habitually fished in the zone or which have made substantial efforts in research and identification of stocks.

²⁰² Other listed relevant considerations include the rights of land-locked and geographically disadvantaged States under Articles 69 and 70, concern for developing States in accessing surplus, and the interests of States with a close connection to fishing or fisheries research in the EEZ in issue.

²⁰³ Burke, *supra* note 200, pp.279-280

²⁰⁴ Article 62(4) Law of the Sea Convention does require that nationals of other States must comply with fishing measures and other terms and conditions established by the coastal State. The reference to "nationals of other States" rather than to all vessels can be explained by the fact the coastal State would have jurisdiction over vessels flying its own flag or its own nationals, and therefore could establish whatever rules for them it wished. Extension of jurisdiction over foreign fishing requires some specificity.

- (c) regulating seasons and areas of fishing, the types, sizes and amount of gear, and the types, sizes and number of fishing vessels that may be used;
- (d) fixing the age and size of fish and other species that may be caught;
- (e) specifying information required of fishing vessels, including catch and effort statistics and vessel position reports;
- (f) requiring, under the authorization and control of the coastal State, the conduct of specified fisheries research programmes and regulating the conduct of such research, including the sampling of catches, disposition of samples and reporting of associated scientific data;
- (g) the placing of observers or trainees on board such vessels by the coastal State;
- (h) the landing of all or any part of the catch by such vessels in the ports of the coastal State;
- (i) terms and conditions relating to joint ventures or other co-operative arrangements;
- (j) requirements for the training of personnel and the transfer of fisheries technology, including enhancement of the coastal State's capacity of undertaking fisheries research;
- (k) enforcement procedures.²⁰⁵

This extensive arsenal of responses by a coastal State can be grouped into particular categories.²⁰⁶ Firstly, there are those provisions directed towards impacting upon

²⁰⁵ Article 62(4), Law of the Sea Convention

²⁰⁶ Although note the limitations imputed by the Arbitral Tribunal in *La Bretagne (Canada v France)*, 17 July 1986: reprinted (1986) 90 *Revue Generale de Droit International* p.713; however the majority view in this case has been the subject of strident criticism: see W.T. Burke, "Coastal State Fishery Regulation Under International Law: A Comment on the *La Bretagne* Award of July 17, 1986 (The Arbitration between Canada and France); J.M. Arbour, "L'Affaire du chalutier-usine 'La Bretagne' ou les droits de l'Etat côtier dans sa zone économique exclusive" (1986) 24

fishing effort, and the individuals who undertake this effort. These provisions, including sub-paragraphs (a), (b), (c), and (d), deal with licensing of vessels, and the manner, place and time in which fishing can take place. The provisions are quite expansive in their scope and give the coastal State a significant number of options in the framing of a legislative regime and the nature of the management system. Further, the reference to the payment of fees in Article 62(4)(a) clearly indicates that even where a coastal State may be under a duty to provide access to foreign fishing vessels to any surplus TAC, however diluted such a duty might be, that access is not free. Since licensing vessels can include the payment of fees or other remuneration, it is clear the coastal State can sell the right to access its EEZ, even where it might be under an obligation to provide such access.²⁰⁷

Secondly, there are those measures designed to enhance the research capacity of the coastal State, particularly sub-paragraphs (e), (f) and (j). Direct assistance in the task of data collection, which must necessarily be the crucial scientific task in the successful management of any fishery, can be thrust upon those who exploit the resource and necessitated management of it.²⁰⁸ In addition, sub-paragraph (g)

Canadian Yearbook of International Law p.61

²⁰⁷ See Burke, *supra* note 101, pp.66-67; Attard, *supra* note 86, pp.172-173

²⁰⁸ This is consistent with the approach to marine scientific research in adopted in Part XIII of the Law of the Sea Convention: see generally M. Gorina-Ysern, *Principles of International Law Governing Coastal State Access to Marine Scientific Research Results*, Ph.D. thesis, University of New South Wales, 1995

allows the coastal State to monitor the actual fishing taking place, and to confirm the veracity of the data by having individuals present on board vessels.²⁰⁹

Thirdly, there are those provisions directed towards the enforcement of whatever mechanisms are established. This is done in two ways, one direct and the other indirect. Sub-paragraph (k) leaves matters entirely in the discretion of the coastal State by prescribing nothing but "enforcement procedures" the scope of which can be extremely wide. The indirect method of enforcement control can be seen in sub-paragraph (h) which allows the coastal State to prescribe the use of its ports by fishing vessels. This allows the coastal State to receive the economic benefits of a port visit that they might not otherwise receive, as well as an opportunity to extend its regulatory functions over vessel by virtue of port State control.²¹⁰

As noted above, there are specific provisions directed as special situations affecting

²⁰⁹ See discussion in Attard, *supra* note 86, p.176; note also sub-paragraph (j) which is designed to assist in the enhancement of the research potential of particularly developing States through training schemes and technology transfer. This is consistent with the objectives of Part XIV of the Law of the Sea Convention. See generally T.F. Marsteller & R.L. Tucker, "Problems of the Technology Transfer Provisions of the Law of the Sea Treaty" (1983) 24 *IDEA: The Journal of Law and Technology* p.167

²¹⁰ Ademuni-Okede notes that State practice has tended to limit port State control to particular subjects for reasons of comity and expediency, notably pollution, seaworthiness and sanitary regulation. Some States, such as the United States, have attempted to impose more substantial regulation upon vessels in its internal waters: Ademuni-Okede, "Port State Control and UK Law" (1997) 28 *Journal of Maritime Law and Commerce* p.657 at pp.660-661; see also Attard, *supra* note 86, pp.176-177

certain stocks. The provisions do not add to the management principles espoused in Article 61 and 62, but rather exhort a coastal State to enter into cooperative arrangements with other States whose interests may be particularly affected by the harvesting of a stock. These stocks fall into a number of categories: straddling stocks²¹¹; highly migratory species²¹²; anadromous species²¹³; catadromous species²¹⁴; and marine mammals²¹⁵. These do not add greatly to the basic requirements with respect to the management of fish stocks within the EEZ under the Law of the Sea Convention, but rather impose additional requirements to cooperate or consult with other States whose interests may be particularly affected by exploitation of specific stocks. Before considering each in more detail, it is necessary to consider duties of cooperation and negotiation which may be imposed upon State with respect to these provisions, and in the context of high seas fisheries.

Duties of Cooperation

The first issue to consider is the nature of the duty to cooperate. Such a duty can be characterised into one of two forms: a duty to enter into negotiations or *pactum*

²¹¹ Article 63, Law of the Sea Convention

²¹² Article 64, Law of the Sea Convention

²¹³ Article 66, Law of the Sea Convention

²¹⁴ Article 67, Law of the Sea Convention

²¹⁵ Article 65, Law of the Sea Convention

*de negotiando*²¹⁶; and a duty to negotiate and to reach an agreement, or *pactum de contrahendo*.²¹⁷ Obviously both duties of cooperation will require negotiations entered into in good faith, but the *pactum de contrahendo* may be distinguished from a *pactum de negotiando*, as the parties will be obliged to work together in good faith to attempt to reach an agreement, and to carry that agreement through to a successful conclusion.²¹⁸

The scope of an obligation to negotiate, and the nature of the differences between a *pactum de negotiando* and a *pactum de contrahendo* are most significant, as obligations, falling into both categories, exist within the Convention affecting fisheries management. Most international consideration of these duties to negotiate and to conclude agreements has been in broader contexts than the law of the sea,

²¹⁶ A. Tahindro, "Conservation and Management of Transboundary Fish Stocks: Comments in Light of the Adoption of the 1995 Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks" (1997) 28 *Ocean Development and International Law* p.1 at p.19; I.A. Shearer, "High Seas: Drift Gillnets, Highly Migratory Species and Marine Mammals" in T. Kuribayashi & E.L. Miles (eds), *The Law of the Sea in the 1990s: A Framework for Cooperation*, (Honolulu: Law of the Sea Institute, 1990) p.237 at pp.243-246

²¹⁷ U. Beyerlin, "Pactum de Contrahendo, Pactum de Negotiando" in R. Bernhardt (ed.), *Encyclopedia of International Law* (Amsterdam: North Holland, 1984) Vol.7, p.371 at pp.375-376. Beyerlin notes that some authors are reluctant to ascribe so rigid a conclusion, but rather require something greater than mere negotiation.

²¹⁸ L. Guruswamy, "The Promise of the United Nations Convention on the Law of the Sea: Justice in Trade and Environmental Disputes" (1998) 25 *Ecology Law Quarterly* p.189 at p.215

and therefore it is necessary to examine the scope of these duties in international law generally.

Duties to negotiate or to conclude international agreements can arise in two ways. The first is by specific agreement to create such an obligation, and the second is by action of customary international law. The duties encapsulated in the Law of the Sea Convention are recognised examples of the first category, where States have undertaken by becoming parties to the Convention to either cooperate, or enter into negotiations with a view to cooperation.²¹⁹

The second category is also of relevance to the present discussion, as by its nature, customary international law will have a greater reach by binding all States rather than merely those who are parties to a particular convention. Given that a number of States with significant areas of maritime jurisdiction, and/or large fishing fleets, are yet to become parties to the Law of the Sea Convention²²⁰, finding customary law obligation to enter into negotiations or to cooperate could have a tremendous impact upon the resolution of international fisheries disputes. While it might be

²¹⁹ This raises the broader question of to what extent the Law of the Sea Convention represents customary international law. The ICJ, in the *Gulf of Maine Case* ICJ Reports 1984 p.246 at p.297, has indicated that the provisions with respect to the EEZ and continental shelf represent custom, although this case concerned maritime delimitation and not fisheries.

²²⁰ For example, at the time of writing, neither the United States or Canada were parties to the Law of the Sea Convention, yet both boast areas of maritime jurisdiction that are among the ten largest in the world.

argued that such duties to cooperate or negotiate fall into those portions of the Law of the Sea Convention which have become part of customary international law, ascertaining an independent duty to consult, negotiate and cooperate would be preferable.

The existence of a customary law obligation for States to negotiate or cooperate has been considered in a number of cases. In the *International Status of South West Africa*²²¹, the ICJ was unwilling to impute anything more than "political or moral duties" to enter into negotiations to conclude a new trusteeship agreement for South West Africa.²²² In the absence of an express duty, the Court would not find such an obligation to negotiate, even though the UN Charter implicitly intended the trusteeship system to replace the mandate system.²²³ This would seem to indicate that the establishment of a customary right to negotiate is problematic.²²⁴

On the other hand, it is apparent that various international tribunals have been

²²¹ ICJ Reports 1950 p.128

²²² *International Status of South West Africa* ICJ Reports 1950 p.128 at p.139

²²³ *International Status of South West Africa* ICJ Reports 1950 p.128 at p.140

²²⁴ This is the view of Rogoff: M.A. Rogoff, "The Obligation to Negotiate in International Law: Rules and Realities" (1994) 16 *Michigan Journal of International Law* p.141 at p.153. Rogoff quotes Reuter on this point: P. Reuter, "De L'Obligation de Négocier" (1975) 14 *Comunicazioni e Studi* p.711 at pp.714-715. The notion of a general obligation to negotiate was expressly rejected by Judge Morelli: *North Sea Continental Shelf Cases* ICJ Reports 1969 p.3 at p.216

prepared to take a more generous view of such an obligation where the interests of another State are directly affected by State action. That is to say, where a State is under a duty to take into account another State's interest, that may translate into a duty to negotiate or cooperate.²²⁵ This was apparently the view of the ICJ in the *Fisheries Jurisdiction Case* where the Court noted that the nature of the preferential rights in issue in that case compelled the parties to seek a negotiated outcome.²²⁶ Similarly, in the *North Sea Continental Shelf Cases*, after noting that there were customary rules for the delimitation of the continental shelf, the Court stated:

- (a) the parties are under an obligation to enter into negotiations with a view to arriving at an agreement, and not merely to go through a formal process of negotiation as a sort of a prior condition for the automatic application of a certain method of delimitation in the absence of agreement...²²⁷

As Rogoff notes, the Court was prepared to impute a specific obligation to negotiate by virtue of the particular features of the regime of the continental shelf rather than to rely upon some general international law obligation.²²⁸ Similarly, the specific circumstances generated by the nuclear arms race compelled the ICJ to hold unanimously that there was a duty on the nuclear powers to negotiate in good faith

²²⁵ This is the view of Kirgis: F.L. Kirgis, *Prior Consultation in International Law: A Study of State Practice*, (Charlottesville: University Press of Virginia, 1983) p.364

²²⁶ *Fisheries Jurisdiction Case* ICJ Reports 1974 p.3 at p.32

²²⁷ ICJ Reports 1969 p.3 at p.47; cf. separate opinion of Judge Ammoun: *Ibid.*, pp.146-147

²²⁸ Rogoff, *supra* note 224, p.157

nuclear disarmament.²²⁹

If a customary obligation to negotiate or cooperate may be imputed from the impact upon other State rights or the regime itself, then there are good grounds to assume that such a rule of custom might exist in relation to those elements of the law of the sea where the rights of States are in conflict. Certainly the ICJ held that the fisheries rights in issue in the *Fisheries Jurisdiction Case* fell into this category. Those provisions of the Law of the Sea Convention where duties to cooperate or to negotiate pertaining to fisheries each deal with situations where access to a resource is in issue.²³⁰ This would seem broadly consistent with the *Fisheries Jurisdiction Case*, even assuming these provisions have not become custom in themselves.

Once a *pactum de negotiando* or *pactum de contrahendo* has been established, either expressly by treaty or by way of custom, the next issue is what a State will need to do to discharge such a duty, and whether there is any meaningful difference between the two concepts. To deal with the latter question first, there is certainly a significant semantic difference between the terms. A *pactum de negotiando* is

²²⁹ *Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons* 35 ILM 809 (1996) at pp.830-831

²³⁰ Rogoff appears to reach this conclusion by making a case study of the application of a duty to negotiate in the context of driftnetting in high seas areas: Rogoff, *supra* note 224, pp.174-180; Lagoni reaches the same conclusion in respect of the exploitation and exploration of common oil and gas deposits: R. Lagoni, "Oil and Gas Deposits Across National Frontiers" (1979) 73 *American Journal of International Law* p.215 at p.243

merely an agreement to negotiate, whereas a *pactum de contrahendo* requires negotiation *and* a subsequent outcome from those negotiations in the form of some agreement, or at least mutually acceptable solution. International consideration of the point broadly concurs with this simple analysis. The Arbitral Tribunal in the *Agreement on German External Debts Arbitration* stated that the term *pactum de contrahendo* "should be reserved to those cases in which the parties have already undertaken a legal obligation to conclude an agreement".²³¹ This can be contrasted with a requirement to negotiate, which does not require the parties to reach an agreement by mutual consent.²³²

While a duty to merely negotiate initially seems quite weak, it has been held in a number of circumstances to have legal consequences. The nature of the obligation was neatly expressed as follows:

However, a *pactum de negotiando* is also not without legal consequences. It means both sides will make an effort, in good faith, to bring about a mutually satisfactory solution by way of a compromise, even if that meant the relinquishment of strongly held positions earlier taken.²³³

This has two distinct elements: that the negotiations entered into take place in good faith; and that States must be prepared to modify their original negotiating position.

²³¹ *Agreement on German External Debts Arbitration (Greece v Federal Republic of Germany)* 47 ILR 418 at p.453

²³² *Government of Kuwait v American Independent Oil Company* (1982) 66 ILR 519 at p.565

²³³ *Agreement on German External Debts Arbitration (Greece v Federal Republic of Germany)* 47 ILR 418 at p.453

The former notion finds support in general international law²³⁴ or in the context of treaty obligations²³⁵, while the latter can also draw support from a number of cases before various international tribunals.²³⁶ What is clear is that a duty to negotiate will not have been discharged if one State simply refuses to make concessions from its original negotiating position.²³⁷ In addition, the duty will only be discharged if a State responds to genuine attempts at negotiation:

International practice reflects the conviction that States ought to strive to

²³⁴ See the separate opinion of Sir Hersch Lauterpacht in *Norwegian Loans Case* ICJ Reports 1957 p.9 at pp.52-53; see also Sir Gerald Fitzmaurice, "The Law and Procedure of the International Court of Justice, 1954-59: General Principles and Sources of International Law" (1959) 35 *British Yearbook of International Law* p.183 at pp.207-216; see also Sir Robert Jennings & Sir Arthur Watts (eds), *Oppenheim's International Law*, (London: Longmans, 1993) Vol.1, p.38

²³⁵ Article 26 of the Vienna Convention on the Law of Treaties provides:
 Every treaty in force is binding upon the parties to it and must be performed by them in good faith.
 In addition, see *North Atlantic Coast Fisheries Arbitration* (1910) 9 RIAA p.188

²³⁶ *North Sea Continental Shelf Cases* ICJ Reports 1969 p.3 at p.47; *Agreement on German External Debts Arbitration (Greece v Federal Republic of Germany)* 47 ILR 418 at p.453

²³⁷ The Arbitral Tribunal stated:
 [*Pactum de negotiando*] implies a willingness for the purpose of negotiation to abandon earlier positions and to meet the other side part way. The language of the Agreement cannot be construed to mean that either side intends to adhere to its previous stand and to insist on the complete capitulation of the other side. Such a concept would be inconsistent with the term 'negotiation'. It would be the very opposite of what was intended. An undertaking to negotiate involves an understanding to deal with the other side with a view to coming to terms.

Agreement on German External Debts Arbitration (Greece v Federal Republic of Germany) 47 ILR 418 at p.453

conclude agreements: there would thus appear to be an obligation to accept in good faith all communications and contacts which could, by broad comparison of interests and by reciprocal good will, provide States with the best conditions for concluding agreements.²³⁸

A *pactum de contrahendo* will still require negotiations as those for the *pactum de negotiando*, but with the added requirement that the parties reach an agreement. In practical terms, the distinction may not be great, as if both parties make good faith attempts to discharge a duty to reach an agreement, it is difficult to see where liability for the failure ought to be apportioned.²³⁹ Some publicists would go so far as to suggest that the difference between the two duties is no longer meaningful, as the requirement of best efforts to resolve a dispute in good faith is the principal element of both duties.²⁴⁰

Within the Law of the Sea Convention's provisions concerning fisheries, there are several instances of duties of cooperation, or duties to negotiate with a view to agreement. Articles 64, 65 and 66 may be construed as *pacta de contrahendo* as the duties prescribed require the cooperation of the States concerned. Article 67 is even more explicit, requiring that regulation of catadromous stocks "shall be by

²³⁸ *Lac Lanoux Arbitration* (1957) 24 ILR 101 at p.130; see also Hey, *supra* note 66, p.32

²³⁹ Interestingly the term *pactum de contrahendo* is used by Arbitrator Hambro for a duty to negotiate in *Commission of the European Atomic Energy Community v United Kingdom Atomic Energy Authority* (1967) 44 ILR 409 at p.418

²⁴⁰ Shearer, *supra* note 216, p.245; Beyerlin, *supra* note 217, p.376

agreement". These provisions can be contrasted with those which can be more correctly described as *pacta de negotiando*. Article 63(2), in relation to straddling fish stocks, urges States to seek to agree, which would certainly seem a lesser duty than to cooperate. Similarly, Article 118 requires States whose nationals are harvesting the same high seas resources to enter into negotiations, without requiring cooperation or other outcome to be guaranteed from such negotiations.²⁴¹

The consequences of a State failing to meet its obligations to reach agreement, to cooperate or to negotiate under the Convention are not made clear, and have given rise to some academic speculation. Certainly there is no equivalent provision to Article 7 of the High Seas Fisheries Convention that would permit a coastal State to unilaterally impose conservation measures after negotiations had broken down.²⁴² In practice, these concerns and the variety of possible outcomes are not relevant by virtue of the operation of the dispute resolution provisions in Part XV of the Convention.

Part XV of the Law of Sea Convention provides a compulsory and binding dispute resolution mechanism that covers a wide variety of disputes.²⁴³ For fisheries,

²⁴¹ Shearer, *supra* note 216, p.245

²⁴² *Supra* p.84

²⁴³ On Part XV, see generally A.E. Boyle, "Dispute Resolution and the Law of the Sea Convention: Problems of Fragmentation and Jurisdiction" (1997) 46 *International and Comparative Law Quarterly* p.37; E.D. Brown, "Dispute Resolution and the Law of the Sea: The UN Convention Regime" (1997) 21

while a coastal State can exempt disputes concerning the living resources of the EEZ from the application of compulsory dispute resolution, it cannot validly exempt disputes affecting the living resources of the high seas.²⁴⁴ In the provisions noted above, and considered in detail below, duties of cooperation will largely affect those stocks where multiple States have access to them - which in the vast majority of cases will pertain to the high seas rather than the EEZ.²⁴⁵ Accordingly, a failure to negotiate in good faith by one State party to the Law of the Sea Convention with another State party over a stock that in part at least extends to the high seas could see the recalcitrant State brought to answer for its failure, and bound to implement the tribunal's ruling.²⁴⁶

The final matter to consider in relation to cooperation between States under the Law of the Sea Convention is the role of regional and sub-regional organizations. In

Marine Policy p.17

- ²⁴⁴ Compulsory dispute resolution procedures are found in Section 2 of Part XV of the Law of the Sea Convention. The automatic categories of exemption are indicated in Article 297, while optional categories of exemption are indicated in Article 298.
- ²⁴⁵ Boyle queries the utility of compulsory dispute resolution being limited to living resource disputes beyond the EEZ, as he notes that while many disputes will have a high seas element, a stock will rarely be located entirely outside of an EEZ. As such, the dispute submitted for resolution will rarely deal with the totality of a stock: Boyle, *supra* note 243, p.43; see also Davies & Redgwell, *supra* note 7, p.246
- ²⁴⁶ The choice of tribunal for compulsory dispute resolution can be the subject of agreement, or be determined by election. Disputes can be determined by the International Court of Justice, the International Tribunal on the Law of the Sea, by arbitral tribunal, or by a special arbitral tribunal.

every case, fisheries provisions requiring cooperation, agreement, or negotiation will contain references to sub-regional, regional, or international organizations as an appropriate vehicle for these duties, where appropriate. In situations where no such organizations exist, some articles even urge States to cooperate to establish them.²⁴⁷

Regional or sub-regional organizations potentially could be relevant in a number of situations. Firstly, in situations where no organization exists, should the objective of negotiation or agreement be directed at the establishment of such an organization? Secondly, where an organization does exist, does this compel new participants to seek to discharge through the organization, or might they move towards independent agreement with participating States?

While the Law of the Sea Convention recognises the role of international marine living resource management organizations have to play in the management of particular stocks, it is unlikely that this recognition translates into a positive obligation to establish such organizations.²⁴⁸ Two provisions urge States to work to establish regional or sub-regional organizations in the absence of an existing appropriate body.²⁴⁹ However it is difficult to see how this would amount to a

²⁴⁷ Article 64 and 118, Law of the Sea Convention

²⁴⁸ Burke, *supra* note 101, p.225

²⁴⁹ Articles 64 and 118, Law of the Sea Convention

positive obligation as nothing more in the way of detail is present, where in one case, the exhortation to establish the organization is prefaced by the phrase "as appropriate", and in the other States are explicitly given the option of cooperating directly or through an international organization. The Convention does not specify what structure, powers or membership such a body typically ought to have, and reference to appropriateness indicates that States would appear to have a great deal of discretion in selecting the means of cooperation.²⁵⁰ Such a conclusion is logical given that it is difficult to conceive of a situation where a State that was willing to negotiate and conclude a fisheries agreement could be liable for failing to assist in the establishment of an organization to do the same task.

More problematic is the situation where a regional or sub-regional organization is already in existence, and a third State is obliged to enter into negotiations or an agreement if participating in a particular fishery. The question then turns on whether the third State must discharge its obligation through the organization, or if it is open to the State to negotiate and conclude agreements with other States on an individual level, or even through an alternative international organization.

Different publicists have differing views on the matter. Some publicists take the view that once an international organization has been brought into existence, then new participants will be obliged to deal with that body by virtue of their duty to

²⁵⁰ Burke, *supra* note 101, p.225

negotiate or duty to cooperate. Such a view is logical, given that the purpose of requiring cooperation, or even mere negotiation, is to attempt to bring common stocks under coordinated management. It would therefore make little sense to conclude ever greater numbers of new arrangements with new participants in a fishery, so the appropriate response is to centralise coordination in an existing agency. This position probably represents the situation in respect of cetaceans under Article 65, where obligation is expressly extended to the appropriate international organization.²⁵¹

The response to this is that the Convention does not explicitly compel States to deal with fisheries organizations.²⁵² Even under Article 64, which appears to oblige States to establish an appropriate fisheries body, the right to deal with other States directly is expressly retained.²⁵³ This would appear to give States a choice of responses, and to deal with a fisheries organization if they choose.

²⁵¹ Van Drimmelen notes that States would be obliged to become parties to the International Convention for the Regulation of Whaling, but by objecting to IWC harvest limits, would circumvent such restrictions. Whether such action would be consistent with the *bona fides* requirement of cooperation is questionable: B. van Drimmelen, "The International Mismanagement of Whaling" (1991) 10 *Pacific Basin Law Journal* p.240 at p.256; see also de Yturriaga, *supra* note 156, p.161

²⁵² Although note the content of Article 65 in respect of cetaceans: see below at p.144

²⁵³ Burke notes that the wording of Article 64 appears to urge contradictory positions: Burke, *supra* note 101, p.225

A way to rationalise these positions can be found in considering the nature of a fisheries organization in international law, and where duties under the Convention are owed. Any international fisheries body will have been brought into existence through an agreement between States, the responsibility for decision-making, implementation and enforcement will rest with its State parties, and ultimately its presence and recognition within the international community will be dependent upon this characteristic. Similarly, a duty of negotiation or cooperation, even if appropriately exercised through a fisheries organization, will be owed to other State parties under the Law of the Sea Convention, not to the organization itself. However, through participation in the fisheries organization a State may have implicitly indicated its willingness to have the cooperation owed to it under the Convention exercised through the organization on its behalf. Such an interpretation has yet to be considered by any international tribunal, and given it amounts to some diminution of State sovereignty, it is submitted that it may not be the most favoured construction, in the absence of an expression of delegation of the duty by the affected State.²⁵⁴

Highly Migratory Species

Highly migratory species are one category which receive specific treatment under

²⁵⁴ Certainly, this view appears to be borne out by State practice: Birnie & Boyle, *supra* note 23, p.531

the Law of the Sea Convention.²⁵⁵ While no definition of what a highly migratory species is provided in the Convention, confusion is avoided by listing in Annex I those stocks which are to be treated as highly migratory. The list in Annex I contains some 17 categories, with the largest representation coming from various species of tuna.²⁵⁶ Article 64 provides States whose nationals fish for listed highly migratory species and coastal States are obliged to cooperate directly, or through international organizations, with a view to ensuring conservation and optimum utilization of such species, both within and outside the EEZ.²⁵⁷

The scope of Article 64 has been the source of much debate and academic consideration.²⁵⁸ The most crucial element centres on whether there is a duty of

²⁵⁵ Article 64, Law of the Sea Convention

²⁵⁶ Annex I lists 17 highly migratory species, 8 of which are types of tuna.

²⁵⁷ Article 64, Law of the Sea Convention provides:

1. The coastal State and other States whose nationals fish in the region for the highly migratory species listed in Annex I shall cooperate directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization of such species throughout the region, both within and beyond the exclusive economic zone. In regions for which no appropriate international organization exists, the coastal State and other States whose nationals harvest these species in the region shall cooperate to establish such an organization and participate in its work.

2. The provisions in paragraph 1 apply in addition to the other provisions of this Part.

²⁵⁸ For example see Clingan, *supra* note 184, p.62; Burke, *supra* note 200, pp.283-286; K.S. Davis, "The International Management of Cetaceans under the New Law of the Sea Convention" (1985) 3 *Boston University International Law Journal* p.477 at pp.496-500; de Yturriaga, *supra* note

cooperation between DWFNs and coastal States in the management of highly migratory species, and what the nature and extent of that duty might be. A first point to note is that Article 64 would appear to apply equally to highly migratory species within the EEZ as well as those outside it. This was initially liberally interpreted by the United States to mean that coastal States did not have jurisdiction over these species within their EEZs²⁵⁹, ostensibly because such species were only transiting national waters, and that a coastal State was obliged to cooperate with DWFNs, intimating that the stocks were not exclusive to the coastal State, even within its EEZ.²⁶⁰ The United States was ultimately obliged to moderate its view in its dealings with a number of South Pacific States²⁶¹, and there would seem to

156, pp.127-130

²⁵⁹ This was reflected in the United States Ocean Policy Statement made by President Reagan on 10 March 1983, and implicitly in Proclamation 5030 on the EEZ: reprinted in 22 ILM 461 (1983); and in the provisions of the *Fishery Conservation and Management Act* 1976 (Magnuson Act), 16 USC 1813. Tsamenyi describes the United States' position as "mystifying and highly erroneous": (1986) 16 *Ocean Development and International Law* p.353 at p.361

²⁶⁰ For example see S. O'Malley Wade, "A Proposal to Include Tunas in U.S. Fishery Jurisdiction" (1986) 16 *Ocean Development and International Law* p.255 at pp.264-266; this point of view led to a major dispute between the United States and a number of States in the South Pacific: see C.C. Aikman, "Island Nations of the South Pacific and Jurisdiction over Highly Migratory Species" (1987) 17 *Victoria University of Wellington Law Review* p.101 at pp.110-114; Churchill & Lowe, *supra* note 82, p.236

²⁶¹ Although the US maintained its position, it entered into treaty arrangements with other States, that had practical effect of subjecting its vessels to limited coastal State regulation: *Treaty on Fisheries between the Governments of Certain Pacific Island States and the Government of the United States of America*, done at Port Moresby on 2 April 1987, entered into force 15 June 1988: reprinted 26 ILM 1048 (1987); see also C.R. Kelly, "Law of the Sea:

be a consensus among publicists that the coastal State possesses regulatory functions for the fisheries of the EEZ.²⁶² Certainly, the retention of responsibility in the EEZ for the coastal State would seem consistent with reference to the application of Article 64 in addition to the rest of Part V.²⁶³

On the other hand, it is equally evident that coastal States are under an obligation to cooperate in the determination of TACs for high migratory stocks that are in their EEZs. The object of Article 64 is to provide for the coherent and coordinated management of high migratory species. Since no one State will have jurisdiction over such stocks, coordination of effort and management is essential to ensure the required optimum sustainable yield is reached. The article creates a *pactum de contrahendo*, which would seem to compel the coastal State to conclude arrangements with distant water fishing nations for the management of highly

The Jurisdictional Dispute over Highly Migratory Species of Tuna" (1988) 23 *Columbia Journal of Transnational Law* p.475 at p.503; W.O. McLean & S. Sucharitkul, "Fisheries Management and Development in the EEZ: The North, South, and Southwest Pacific Experience" (1988) 63 *Notre Dame Law Review* p.492 at pp.526-530

²⁶² See B.M. Tsamenyi, "The Treaty on Fisheries between the Governments of Certain Pacific Island States and the Government of the United States of America: The Final Chapter in United States Tuna Policy" (1989) 15 *Brooklyn Journal of International Law* p.183 at p.217; Attard, *supra* note 86, p.185; de Yturriaga, *supra* note 156, pp.128-129; Hey, *supra* note 66, p.84; Burke, *supra* note 101, pp.214-215

²⁶³ See Article 64(2), Law of the Sea Convention. This is also the view of Dahmani: Dahmani, *supra* note 140, p.106

migratory species.²⁶⁴

The goals of such cooperation are also specified in Article 64. Conservation and the promotion of the objective of optimum sustainable yield are set down as the objectives of cooperative action with respect to highly migratory species. This means that overall goals of management under Article 64 are essentially identical to those under Article 62, the only difference being recognition that responsibility for the achievement of the objective rests with multiple States acting in cooperation rather than a single coastal State. Such a result is logical, as it suggests the underlying principles of management are what is crucial in the management of fisheries, and that the same principles ought to be applied in any situation, to any stock, regardless of which State or States have administrative and jurisdictional responsibility.²⁶⁵

Finally, Article 64(2) provides that Article 64 applies in addition to the other provisions of Part V. This suggests that the coastal State retains responsibility for enforcement within its EEZ for highly migratory species, but would also retain control over matters such as marine scientific research and data collection, and the

²⁶⁴ Shearer, *supra* note 216, p.239; Hey, *supra* note 66, p.84; Orrego Vicuña, *supra* note 157, p.62

²⁶⁵ C. Mizukami, "Management of Highly Migratory Species and Fisheries Relations between Japan and South Pacific States" (1990) 24 *University of British Columbia Law Review* p.127 at pp.129-130; Birnie & Boyle, *supra* note 23, pp.530-531

conditions under which fishing might take place.²⁶⁶ However, aside from cooperation to promote conservation, the provision is left somewhat vague as to what the rights and responsibilities of the coastal State are.²⁶⁷

Marine Mammals

Special consideration of marine mammals is also required under the Law of the Sea Convention. The provision governing marine mammals has significance for management as it utilises a potentially different theoretical basis under which management of these stocks is to take place, presumably in recognition of the special and distinct nature of these species.²⁶⁸ Article 65 provides that while nothing prevents a coastal State from regulating marine mammals in its jurisdiction more strictly than provided for under the EEZ regime, States are obliged to cooperate with a view to the conservation of marine mammals. In the case of

²⁶⁶ Hey takes the view that where the highly migratory species is within the EEZ the coastal State has the predominant interest, whereas neither the coastal State nor the DWFNs have the predominant interest on the high seas: Hey, *supra* note 66, p.84; see also Orrego Vicuña, *supra* note 157, p.62

²⁶⁷ O. Thébaud, "Transboundary Marine Fisheries Management: Recent Developments and Elements of Analysis" (1997) 21 *Marine Policy* p.237 at p.238

²⁶⁸ A. D'Amato & S.K. Chopra, "Whales: Their Emerging Right to Life" (1991) 85 *American Journal of International Law* p.21 at p.45; T.L. McDorman, "Canada and Whaling: An Analysis of Article 65 of the Law of the Sea Convention" (1998) 29 *Ocean Development and International Law* p.179 at p.182

cetaceans, this is to be through the work of appropriate international organizations.²⁶⁹

Some observations as to the content of Article 65 can be made. Certainly, while marine mammals do fall within the broader characterisation of living resources that a coastal State has jurisdictional authority over within the EEZ, the coastal State need not be obliged to seek the optimum sustainable yield of the stocks. Article 65 expressly permits the coastal State to adopt a stricter standard, which, as Burke points out, would allow the coastal State to set an entirely arbitrary catch limit of zero if it chose to do so.²⁷⁰ While it is arguable that such a course of action would be open to the coastal State generally, by virtue of the wide discretion vested in the State under Articles 61 and 62, the matter in Article 65 is beyond argument.²⁷¹

Another observation to be made is the extent of the duty to co-operate under Article

²⁶⁹ Article 65, Law of the Sea Convention provides:

Nothing in this Part restricts the right of a coastal State or the competence of an international organization, as appropriate, to prohibit, limit or regulate the exploitation of marine mammals more strictly than provided for in this Part. States shall co-operate with a view to the conservation of marine mammals and in the case of cetaceans shall in particular work through the appropriate international organizations for their conservation, management and study.

²⁷⁰ Burke, *supra* note 101, p.267

²⁷¹ Birnie, *supra* note 19, Vol.2, p.594

65. Certainly marine mammal protection has given rise to a number of international instruments over an extended period of time²⁷², commencing with the Pacific Fur Seal Agreement prior to World War I²⁷³, and most notably evidenced in the context of whales with the International Convention for the Regulation of Whaling.²⁷⁴ While there is no duty to create appropriate international organizations, as is the case with Article 64, the same duty to cooperate as found in that article is present.

Of greater significance is the reference in Article 65 to cooperation in the case of cetaceans. While the conservation of marine mammals must be the subject of cooperation as noted above, for cetaceans States are obliged to work through the appropriate international organizations for their conservation, management and study. While cooperation will usually mean participation, Birnie makes the point that although States would be required to cooperate with an international

²⁷² For succinct histories of whaling and the intervention of international law upon it see especially Birnie, *supra* note 19, pp.63-264 & 303-362 & 407-508; see also D'Amato & Chopra, *supra* note 268, pp.28-50; H.S. Schiffman, "The Protection of Whales in International Law: A Perspective for the Next Century" (1996) 22 *Brooklyn Journal of International Law* p.305 at pp.307-320; see also J.A.R. Nafziger, "Global Conservation and Management of Marine Mammals" (1980) 17 *San Diego Law Review* p.591 at pp.595-606

²⁷³ *Supra* note 25

²⁷⁴ *International Convention on the Regulation of Whaling*, done at Washington on 2 October 1946, entered into force 10 November 1948: 161 UNTS 72

organization, they are not required to join one.²⁷⁵ At the time UNCLOS III was concluded, only one such organization existed, the International Whaling Commission. While it is clear from the wording of the article that it was not intended to give the IWC a monopoly on the regulation of whaling for all time, it is also clear that in the absence of another appropriate organization that States wishing to harvest cetaceans which the IWC has authority for must, initially at least, deal with it.²⁷⁶ Only in the North Atlantic, within the area subject to the North Atlantic Marine Mammal Commission's (NAMMCO)²⁷⁷ regulation, could a State make a case that another more appropriate body than the IWC was present to cooperate with.²⁷⁸ However, in 1996 the United Nations has indicated it considers the IWC, the FAO and UNEP to be appropriate organizations for the purposes of

²⁷⁵ Birnie, *supra* note 19, Vol.2, pp.594-595. That cooperation did not necessarily mean participation was also the view of Canada at UNCLOS III: see UN Doc. A/Conf.62/WS/4, 10 April 1980: reprinted in R. Platzöder (ed.), *Third United Nations Conference on the Law of the Sea: Documents*, (Dobbs Ferry: Oceana, 1982) Vol.12, p.499; see also McDorman, *supra* note 268, p.180

²⁷⁶ A source of some contention has been whether the IWC can validly regulate matters in respect of small cetaceans. On this issue see generally C.E. Carlson, "The International Regulation of Small Cetaceans" (1984) 21 *San Diego Law Review* p.577; Birnie, *supra* note 19, pp.594-595

²⁷⁷ *Agreement on Cooperation in Research, Conservation and Management of Marine Mammals in the North Atlantic*, done at Nuuk 9 April 1992, entered into force 8 July 1992: see <<http://www.nammco.no>>

²⁷⁸ Although note that NAMMCO's management has not extended to species within the competence of the IWC: McDorman, *supra* note 268, p.185

Article 65.²⁷⁹

The significance of this duty of cooperation is increased when the impact of Article 65 on high seas management of marine mammals is considered. Article 120 of the Convention provides that for the high seas, Article 65 continues to apply.²⁸⁰ Logically, this does not extend coastal State authority to the high seas, but rather attributes the same duty of cooperation between themselves and with appropriate international organizations to those States concerned with marine mammals. Interestingly though, Article 65 does provide that an international organization, as appropriate, can prohibit, limit or regulate marine mammal exploitation more strictly than otherwise under the EEZ regime. This suggests that where States have ceded their responsibilities to an organization, it should be open to that organization to adopt a stricter standard than that of optimum sustainable yield.

The depredation waged upon marine mammal populations through most of the 20th Century, and the perceived failure of regulatory arrangements have led Burke to suggest that there is a customary international duty upon States to implement measures to conserve marine mammals.²⁸¹ The principal difficulty with such a

²⁷⁹ United Nations, *Law of the Sea: Report of the Secretary General*, 1 November 1996, Doc. A/51/645, paras 175-183

²⁸⁰ Article 120, Law of the Sea Convention provides:
Article 65 also applies to the conservation and management of marine mammals in the high seas.

²⁸¹ Burke, *supra* note 101, p.275

conclusion, as Burke recognises, is the requisite State practice strongly mitigates against the imputation of such a duty.²⁸² D'Amato and Chopra have gone further, suggesting that whales at least are sentient creatures, and accordingly are entitled to similar rights as those owed to human beings under international human rights instruments.²⁸³ While the very existence of Article 65 does indicate that marine mammals are perceived to be a "special case" by the international community, it is submitted that this is unlikely to gel into the application of human rights for such creatures in the foreseeable future.²⁸⁴

The relationship between Article 64 concerning highly migratory species and Article 65 gives rise to some ambiguity. A number of species of marine mammals are listed in Annex I as highly migratory species, including dolphins and cetaceans.²⁸⁵ As already noted, Article 64 reinforces the objective of optimum utilization, both within and without of the EEZ, whereas Article 65 allows for a more restrictive approach to be taken by a coastal State. Further, Article 65 expressly states that nothing in Part V of the Convention limits the coastal State's ability to impose

²⁸² Burke, *supra* note 101, pp.284-302; see also van Drimmelen, *supra* note 251, pp.241-259

²⁸³ D'Amato & Chopra, *supra* note 268, pp.23-28

²⁸⁴ D'Amato and Chopra themselves "predict" a consensus on this issue, rather than contend it exists at present: D'Amato & Chopra, *supra* note 268, p.62

²⁸⁵ Kindt is of the view that no cetaceans ought to have been included in Annex I: J.W. Kindt, "A Summary of Issues involving Marine Mammals and Highly Migratory Species" (1984) 18 *Akron Law Review* p.1 at p.9

stricter standards. This would seem to substantially limit the application of Article 64 to marine mammals to the extent that Nandan and Rosenne have described the situation "with regard to cetaceans, Article 64 is *lex generalis* and Article 65 is *lex specialis*".²⁸⁶ Kwiatkowska goes further, suggesting that the reference to cetaceans in Annex I is the "residue of the joint treatment of highly migratory species and marine mammals" that had appeared in the second draft of the Informal Single Negotiation Text of the Convention in 1975.²⁸⁷ In either circumstance, it would seem Article 64 has limited application or relevance to Article 65.

Anadromous Stocks

Anadromous and catadromous stocks are also given special status under the Law of the Sea Convention. Given the significance of riverine environments in the life cycles of these species, the delegates at UNCLOS III permitted the incorporation of provisions designed to recognise the special interests of these States. The United States delegation had sought the complete prevention of high seas fishing for salmon and other anadromous stocks²⁸⁸, but this proved an untenable position²⁸⁹,

²⁸⁶ S. Nandan & S. Rosenne (eds), *The United Nations Convention on the Law of the Sea 1982: A Commentary* (Dordrecht: Martinus Nijhoff, 1993) Vol.4, para.64.9(f); see also Burke, *supra* note 101, p.267; Birnie, *supra* note 19, Vol.2, p.594

²⁸⁷ Kwiatkowska, *supra* note 185, p.101n

²⁸⁸ There is no definition of anadromous species in the Convention, nor is a list of such species annexed to the Convention as was the case for high migratory species. The definition generally understood is those species of fish that spawn in fresh or estuarine waters, but live most of their lives in

as did similar proposals to make such fishing contingent upon an agreement with the affected coastal State for other States to harvest these stocks on the high seas.²⁹⁰

The negotiated position for these species now reflected in the Convention provides that where possible fishing for these stocks will take place within EEZs, and that coastal States in whose rivers anadromous stocks originate have the primary interest in and responsibility for the stocks.²⁹¹ High seas fishing of these species ought only take place on the high seas where economic dislocation from the cessation of fishing would be the consequence to the fishing State.²⁹² To assist in the avoidance of this situation, coastal States are obliged to take into account the

the sea.

²⁸⁹ See Clingan, *supra* note 184, p.60; W.T. Burke, "Anadromous Species and the New International Law of the Sea" (1991) 22 *Ocean Development and International Law* p.95 at p.100

²⁹⁰ See Official Records, Vol.3, pp.124-125; pp.127-128; pp.214-216; pp.222-223; see also the discussion of the Main Trends Working Papers presented at UNCLOS III in Burke, *supra* note 101, p.163

²⁹¹ Article 66(1), Law of the Sea Convention. deReynier notes that the use of the phrase "primary interest in and responsibility for" suggests that other States may have an interest in such stocks, but this does not permit the inference that coastal State sovereign rights within the EEZ have been diluted: Y.L. deReynier, "Evolving Principles of International Fisheries Law and the North Pacific Anadromous Fish Commission" (1998) 29 *Ocean Development and International Law* p.147 at p.151; see also Burke, *supra* note 289, p.102

²⁹² Article 66(3)(a), Law of the Sea Convention. de Yturriaga notes that this amounts to a restriction on the freedom of fishing on the high seas: de Yturriaga, *supra* note 156, p.133

normal catch and modes of operations of fishing States, in all areas where fishing has occurred.²⁹³ This is buttressed by the requirement that the setting of a total allowable catch within the EEZ by a coastal State in whose rivers the stocks originate can only be done after consultations with fishing States.²⁹⁴

Interestingly, when such high seas fishing does occur, it is apparent that the State of origin enjoys a right to regulate these fisheries as it might with fisheries within its EEZ, subject to some qualifications. Article 66(2) expressly gives the riverine State the power to set the TAC for its anadromous stocks in waters landward of the outer limits of its EEZ, and for fishing provided for in Article 66(3)(b). This latter situation applies to situations where high seas fishing does take place. However, the power to set a TAC for the high seas is necessarily limited by the requirement of consultation with other States, although Burke makes much of the fact that the TAC is set *after* consultation not *in* consultation.²⁹⁵ In addition, it is also apparent that control sufficient to set the high seas TAC does not necessarily extend to a power of enforcement. Article 66(3)(d) provides that enforcement of regulation shall be by agreement between the State of origin and the fishing States concerned.

²⁹³ Article 66(3)(b), Law of the Sea Convention

²⁹⁴ Article 66(2), Law of the Sea Convention

²⁹⁵ Burke, *supra* note 289, pp.103-104; Burke, *supra* note 101, p.168; see also deReynier, *supra* note 291, p.152

There is also encouragement for States to co-operate in the operation of Article 66, and to do so through regional organizations where appropriate.²⁹⁶ In addition, where the coastal State in whose EEZ the fish are present is not the State of origin, there is no suggestion that the State of origin displaces the coastal State, but rather the States concerned are obliged to cooperate to ensure the conservation and management of the stocks.²⁹⁷

The content of Article 66 does not provide any additional requirements with respect to the principles of management, but rather goes to some trouble to indicate where responsibility for the management of these stocks might lie. In this, the principal thrust of the article is to stress the position of the riverine State. This is especially evident in Article 66(2), where responsibility for setting the TAC for a stock is vested in the State of origin, even where the stock periodically passes through the high seas. In the situation of another State's EEZ, that State is obliged to cooperate with the State of origin, and there is express recognition that that State will still retain the primary interest in the stock.²⁹⁸

This emphasis on the rights of the riverine State of origin of the stock represents a somewhat different approach to fisheries management. While implicit in an

²⁹⁶ Article 66(5), Law of the Sea Convention

²⁹⁷ Article 66(4), Law of the Sea Convention

²⁹⁸ deReynier, *supra* note 291, pp.152-153

approach based on MSY or optimum sustainable yield is the identification of a stock and the establishment of its biomass, regulation and decision-making has been based upon different considerations, principally identification of the State with jurisdiction. Although a coastal State was obliged to implement management principles, this is to be applied to areas on the basis of where particular fish might happen to be at a particular point in time. The burden of management, and systems of decision-making, are focused on area management rather than species management. This is most evident by the absence of management criteria with respect to the territorial sea, where an area being subject to State sovereignty, rather than merely sovereign rights, gives the coastal State unfettered control over the fishery.

Article 66 places emphasis on stocks rather than location. The perception of an anadromous stock under the Convention is of an asset with a strong link to a particular State. This gives that State greater rights and greater control over that asset, and regardless of where the stock might go, or how spread throughout the high seas and EEZs it might become. Responsibility for management is in terms of a single biomass.

From a scientific position, such a premise underlying management has much to recommend it. Decisions affecting the stock will pertain to the whole rather than on the vagaries of international maritime boundaries that bear no relation to fish

behavioural patterns that could see stocks spread over areas subject to management by several different States.²⁹⁹

That such a system ought to be preferred for anadromous species is not surprising. The identification of a single stock is less problematic than other species insofar as anadromous species always return to the same place to spawn. This gives the riverine State a naturally pre-eminent position, as its management of the river will ultimately determine the long-term viability of the stock. Any decision-making which excluded or limited the role of such a State could not hope to succeed. The negotiation of Article 66 was also assisted by the fact that the States with the greatest interest in harvesting anadromous species were influential developed States³⁰⁰, with long histories of international cooperation in the field of salmon.³⁰¹ As such, the differences in responsibility for management from those applicable generally can be explained.

²⁹⁹ Burke, *supra* note 289, p.103; Burke, *supra* note 101, p.167

³⁰⁰ Burke notes the principal States of origin for salmon in the Pacific are the United States, Canada, Japan, and the former Soviet Union. In the Atlantic, the States are the United States, Canada, the former Soviet Union, Iceland, Ireland, Britain, France, Germany, Poland, Spain, Norway, Sweden and Finland: Burke, *supra* note 289, p.96

³⁰¹ For example see the Baltic Salmon Convention; North Pacific Fisheries Convention; *Convention for the Conservation of Salmon in the North Atlantic*, done at Reykjavik 2 March 1982, entered into force 1 October 1983: TIAS No.10789; *Convention on the Protection, Preservation and Extension of the Sockeye Salmon Fisheries of the Fraser River System*, done at Washington 26 May 1930, entered into force 28 July 1937: TS No.918

Catadromous Stocks

Provisions for catadromous stocks are similar to those with respect to anadromous stocks, but are in some ways more limiting. Article 67 provides that the coastal State in whose waters these stocks spend the bulk of their life cycle have responsibility for management.³⁰² This differs from the reference to "primary responsibility" in the context of anadromous stocks, which is suggestive that other States may have legitimate, albeit secondary, interest. Certainly it would appear to exclude other States from any role in the management process. If this emphasis was opened to question, all doubts are quickly removed by Article 67(2) which requires that all harvesting of catadromous stocks take place in waters to the landward of the outer limits of the EEZ, effectively banning the taking of catadromous species on the high seas.³⁰³ In instances of catadromous stocks straddling EEZs, management is to be affected by agreement between the relevant States.³⁰⁴ Such an agreement is to ensure rational management of the species, and

³⁰² Article 67(1), Law of the Sea Convention provides:

A coastal State in whose waters catadromous species spend the greater part of their life cycle shall have responsibility for the management of these species and shall ensure the ingress and egress of migrating fish.

³⁰³ Article 67(2), Law of the Sea Convention provides:

Harvesting of catadromous species shall only be conducted in waters landward of the outer limits of exclusive economic zones. When conducted in exclusive economic zones, harvesting shall be subject to this article and the other provisions of this Convention concerning fishing in these zones.

³⁰⁴ Article 67(3), Law of the Sea Convention provides:

In cases where catadromous fish migrate through the exclusive economic zone of another State, whether as juvenile or maturing fish,

take into account the special responsibilities of the host coastal State.³⁰⁵ Beyond the need to establish an agreement to provide for management, the most substantial restriction placed on the coastal State is that it cannot prevent the egress and ingress of catadromous species, and consequently it would not be acceptable for a coastal State to cause the blocking of a river mouth. Other than that, it is notable that the article lacks any reference to conservation of the stocks, other than a duty to comply with the principles of management prescribed for the EEZ where harvesting takes place in the EEZ. On that basis, coastal States' sovereignty to deal with internal resources as they choose, in the territorial sea and internal waters appears unfettered.

Hey takes the view that while the primary responsibility for management rests with the State in whose waters the stocks spend most of their lives, other States affected draw some protection from Article 67(2), and "the interest of the community of [s]tates is provided for by the application of the other provisions of Part V of the 1982 Convention".³⁰⁶ However, beyond co-operation, where implicitly the

the management, including harvesting, of such fish shall be regulated by agreement between the State mentioned in paragraph 1 and the other State concerned. Such agreement shall ensure the rational management of the species and take into account the responsibilities of the State mentioned in paragraph 1 for the maintenance of these species.

³⁰⁵ Dahmani takes the view that this probably gives the coastal State a right to preferential treatment in the allocation of stocks: Dahmani, *supra* note 140, pp.103-104; Hey takes a similar position: Hey, *supra* note 66, p.67

³⁰⁶ Hey, *supra* note 66, p.67

riverine State has a preferential position, it is difficult to impute any duty on the riverine State to manage the stocks with an eye to conservation, except when they are in the EEZ. Certainly the reference to the provisions affecting harvesting under Part V of the Convention is prefaced by the phrase "[w]hen conducted in exclusive economic zones", which would seem to prevent those obligations from being applied to catadromous stocks in internal waters or the territorial sea.

While these provisions appear to strongly favour coastal States relative to those measures found in the Convention for other stocks, in practice the concessions made with respect to these species were relatively minor. By virtue of their life cycles, catadromous species spend most of their lives in rivers, and their forays into the open sea for breeding do not generally see them travel the sort of distances that are likely to have these species found in waters beyond national jurisdiction.³⁰⁷ In reality, the bulk of the effective management of these stocks would fall on the interested riverine State, and in the vast majority of cases, this State will also have jurisdiction over the river estuary and adjacent sea areas where these stocks breed. Consequently, the content of Article 67 merely reflects existing international practice.³⁰⁸

³⁰⁷ Kwiatkowska, *supra* note 185, p.85

³⁰⁸ Such stocks also represent a catch level of between 0.1-0.2% of the world fish catch in any given year, also suggest they were not perceived as significant by delegates at UNCLOS III: see Dahmani, *supra* note 140, p.103

Sedentary Species

The regulation of sedentary species predates the concept of the EEZ, as these stocks were subject to the regime of the continental shelf.³⁰⁹ The Law of the Sea Convention has retained the distinction by expressly reserving sedentary species from the application of Part V in Article 68.³¹⁰ The difference is significant, as coastal States are under no obligation with respect to the maintenance and conservation of stocks under the continental shelf³¹¹, as opposed to the albeit discretionary nature of the obligations owed under the EEZ regime.³¹²

High Seas

The application of management principles to States fishing on the high seas has provided the source of much dispute between States over the last 25 years, and has been identified as one of the key challenges facing the law of the sea into the next

³⁰⁹ Article 2(4) of the Continental Shelf Convention defined sedentary species as "organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or subsoil". This definition is retained verbatim in Article 77(4) Law of the Sea Convention.

³¹⁰ Article 68, Law of the Sea Convention provides:
This Part does not apply to sedentary species as defined in Article 77, paragraph 4.

³¹¹ Article 77, Law of the Sea Convention merely grants a coastal State sovereign rights over the resources of the shelf, and defines sedentary species, without imposing any restriction or obligation with respect to the utilization of these resources.

³¹² See Dahmani, *supra* note 140, pp.104-105; Hey, *supra* note 66, p.49; de Yturriaga, *supra* note 156, pp.136-137

century.³¹³ While the source of much dispute, the origins of the difficulties lie in the basic tension between the Grotian view of freedom of the seas, and the moves to extend jurisdiction and regulation to prevent over-exploitation. While this tension was resolved in the case of the bulk of the world's fisheries³¹⁴ by the creation of extended State jurisdiction under the EEZ regime, for those fisheries beyond 200 nautical miles, it still presents the same dilemma as faced the delegates at UNCLOS I - how does the international community retain freedom of the seas, and prevent over-exploitation of marine living resources?

The Law of the Sea Convention expressly reinforces the notion of freedom of the sea.³¹⁵ Article 87, which expresses the fundamental freedoms of the high seas³¹⁶, provides that all States, whether coastal or land-locked, may exercise

³¹³ For example see the extensive study by Meltzer of high seas fisheries: E. Meltzer, "Global Overview of Straddling and Highly Migratory Fish Stocks: The Nonsustainable Nature of High Seas Fisheries" (1994) 25 *Ocean Development and International Law* p.255

³¹⁴ FAO on High Seas, *supra* note 155, p.1

³¹⁵ De Yturriaga notes that while the adoption of the notion of freedom of the high seas is present in Article 2(2) High Seas Fishing Convention, the provisions in the Law of the Sea Convention should not be seen as a mere adaption of that article, by virtue of the existence of the EEZ regime: de Yturriaga, *supra* note 156, pp.153-155

³¹⁶ The freedoms in Article 87(1), Law of the Sea Convention include:

- (a) freedom of navigation;
- (b) freedom of overflight;
- (c) freedom to lay submarine cables and pipelines, subject to Part VI;
- (d) freedom to construct artificial islands and other installations permitted under international law, subject to Part VI;

"freedom of fishing". This reflects the traditional view of the high seas, from which all States could take benefit without the assertion of sovereignty.

There was no movement at UNCLOS III to deal with high seas fisheries in the same fashion as the deep seabed. The deep seabed was expressly made part of the common heritage of mankind, which in effect gives all States an interest in the exploitation of it. Any benefits accrued through the exploitation of the seabed are ultimately to flow through the International Seabed Authority to the international community as a whole.³¹⁷ This is inimical to the notion of freedom of the seas where exploitation of the common property is for the benefit of the individual rather than the benefit of the whole - although all retain the right to seek the benefit for themselves.

Freedom of high seas fishing is qualified in two ways. The first qualification is general consideration for the interests of other States in the exercise of high seas freedoms. States are to have "due regard" for the interests of others in the exercise of their own rights. This qualification is applicable to all of the high seas

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- (e) freedom of fishing, subject to the conditions laid down in section 2; and
 - (f) freedom of scientific research, subject to Parts VI and XIII.

³¹⁷ See generally M.G. Schmidt, *Common Heritage or Common Burden? The United States Position on the Development of a Regime for Deep Sea-Bed Mining in the Law of the Sea Convention* (Oxford: Clarendon Press, 1989) pp.103-213

freedoms, and is entirely consistent with access to common property and equality of rights. It also has explicit support in the form of a statement by the ICJ in the *Fisheries Jurisdiction Case*.³¹⁸

The second qualification is more substantial, in that it provides a series of 5 articles that are to be complied with if freedom of high seas fishing is to be permitted. The first of these expresses the basic proposition, namely that all States have a right to fish on the high seas.³¹⁹ Qualification to this basic right falls into 3 categories.³²⁰ The first is that States must comply with other extant treaty obligations. This is designed to preserve what effectiveness can be drawn from existing and future international fisheries commissions, and allows for States to voluntarily restrict their own freedom of action to permit cooperative regulation.

³¹⁸ The Court stated:

It is one of the advances in maritime international law resulting from the intensification of fishing, that the former *laissez-faire* treatment of the living resources of the sea in the high seas has been replaced by a recognition of a duty to have due regard to the rights of other States and the needs of conservation for the benefit of all.

Fisheries Jurisdiction Case ICJ Reports 1974 p.3 at p.32

³¹⁹ Article 116, Law of the Sea Convention

³²⁰ Article 116, Law of the Sea Convention provides:

All States have the right for their nationals to engage in fishing on the high seas subject to:

- (a) their treaty obligations;
- (b) the rights and duties as well as the interests of coastal States provided for, inter alia, in article 63, paragraph 2, and articles 64 to 67; and
- (c) the provisions of this section [ie Part VII, Section 2 Law of the Sea Convention]

Such a provision was necessary to ensure that the system of high seas fisheries conventions and secretariats, which had evolved piecemeal since the 1950s, was retained, even with its impaired utility.³²¹

The second basic qualification is regard to be had for the rights and duties and interests of coastal States, *inter alia* those found in Articles 63(2), 64, 65, 66 and 67 of the Law of the Sea Convention. These articles relate to straddling stocks³²², and the specialised marine living resource areas of anadromous and catadromous stocks, highly migratory species and marine mammals.³²³ In the latter case, Article 120 expressly extends the operation of Article 65 to the high seas generally. The scope of these duties has already been considered, with the exception of those relating to straddling stocks, which are considered below.

The third qualification relates to the underlying principles for exploitation of the high seas, and is contained within Articles 117, 118, and 119. Firstly, States are obliged to institute measures upon their own nationals as are necessary for the conservation of high seas marine living resources. Article 117 establishes a duty on States to take measures for their respective nationals as may be necessary for

³²¹ Shearer notes that this was necessary to ensure that provisions ensuring the superiority of the Law of the Sea Convention were not interpreted to invalidate such agreements: Shearer, *supra* note 216, p.238

³²² See below

³²³ See above.

conservation, and to co-operate with other States to reach the same end. As noted by Davies and Redgwell, this substantially reflects the content of Article 1(2) of the High Seas Fishing Convention, and in their view reflects customary international law.³²⁴

While this objective can be accomplished with the cooperation of other States, it retains the basic notion that vessels on the high seas ought only be subject to the regulation of their flag State.³²⁵ Infractions of fisheries law, either through international agreement or domestic regulation, were not perceived as sufficiently serious to warrant the vesting of jurisdiction to States other than the flag State.³²⁶

The retention of authority for all but a vanishing small category of activities on the high seas by the flag State represents a substantial limitation on the effectiveness of measures designed to conserve high seas fisheries. In the absence of any agreement to permit other States to arrest a flag State vessel, a situation that exists in only a

³²⁴ Davies and Redgwell, *supra* note 7, p.231

³²⁵ Hey describes this as one of the pillars upon which the regime of the high seas rests: Hey, *supra* note 66, p.50

³²⁶ The categories of activity deemed sufficiently serious to justify intervention by vessels not of the flag State are illuminating as to seriousness with which the international community views this issue. They are piracy, transport of slaves, unauthorised broadcasting, and stateless vessels: Article 110, Law of the Sea Convention.

relative handful of conventions³²⁷, there is no capacity for any State other than the flag State to deal with the regulation of fishing by a vessel on the high seas. Given that the right of fishing on the high seas is guaranteed to all States, then situations will commonly arise where the flag State will lack the physical capacity to inspect, board or monitor the activities of its vessels on the high seas. This will by necessity be the case for vessels flagged in land-locked States, but will also apply to developing States who have been generous in the provision of their flag to vessels.³²⁸ States such as Belize, Panama and Vanuatu, whose naval and fisheries patrol fleets are tiny, and only capable of operation within their EEZs, are the flag States for fishing vessels that operate in locations as diverse as the North Atlantic and the Southern Ocean.³²⁹ Even States that are not deemed to be "flags of convenience" that possess substantial distant water fishing fleets, such as Poland,

³²⁷ For example see Article XI(6)(a), *Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, done at Washington on 16 June 1994, entered into force 8 December 1995: reprinted in 34 ILM 67 (1995); see also *Agreement Regarding the High Seas Squid Driftnet Fisheries in the North Pacific Ocean*, done at Washington on 13 and 26 September 1989, entered into force 26 September 1989: noted 29 ILM 464 (1990)

³²⁸ J. Faith, "Enforcement of Fishing Regulations in International Waters: Piracy or Protection; Is Gunboat Diplomacy the Only Means Left?" (1996) 19 *Loyola of Los Angeles International and Comparative Law Journal* p.199 at p.203

³²⁹ In 1993, Belize possessed two 20 metre patrol craft, and two light aircraft with a range of 1500 nautical miles: R. Sharpe (ed.), *Jane's Fighting Ships 1993-94* (Coulsden: Jane's, 1993) pp.51-52; Panama had 8 patrol craft and 5 light aircraft with ranges of 1500 nautical miles or less: *Ibid.*, pp.471-472; Vanuatu had a single patrol boat with a range of 2500 miles: *Ibid.*, p.837.

Spain and Portugal, lack the resources necessary to monitor the activities of their substantial fleets, as they operate on all of the world's oceans.³³⁰ The problem of reflagging itself has been recognised by the FAO with the adoption of the 1993 Compliance Agreement³³¹, although whether this arrangement will provide an effective solution is yet to be seen.³³²

Article 118 obliges cooperation between States whose nationals are exploiting the same species, or utilising the same area of the high seas for fisheries operation. States so interested are to enter into negotiations, and, where appropriate, to establish regional or subregional fisheries organizations. This duty of cooperation in respect of high seas fisheries is not merely a product of UNCLOS III negotiations, but rather was expressed to exist as part of customary international law

³³⁰ Picard makes the point that even the world's largest economic power struggles to monitor its own vast EEZ: M.J. Picard, "International Law of Fisheries and Small Developing States: A Call for Recognition of Regional Hegemony" (1996) 31 *Texas International Law Journal* p.318 at p.336; see also C.E. Decker, "Issues in the Reauthorization of the Magnuson Fishery Conservation and Management Act" (1995) 1 *Ocean and Coastal Law Journal* p.323 at p.338

³³¹ *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*, opened for acceptance at Rome on 24 November 1993, yet to enter into force: reprinted in 33 ILM 968 (1994)

³³² The Compliance Agreement will not enter into force until there are 25 acceptances: Article XI, Compliance Agreement. In 1998, there were 11 parties, including the European Community. See generally R.J. Dodson, "Recent Developments in Admiralty and Maritime Law" (1995) 22 *Southern University Law Review* p.209; Picard, *supra* note 330, p.337

by the International Court of Justice in the *Fisheries Jurisdiction Case*.³³³

In practice this duty, as has already been noted, is weak. No mechanism describing how States are to engage in these negotiations, or what form their cooperation might take is indicated.³³⁴ An obligation to negotiate does not compel States to reach a successful outcome, or to create a viable regional fisheries organization. Presumably, if a State enters into negotiations in good faith then it has discharged the duty to seek to cooperate, and can continue fishing the high seas area without interruption, or being in breach of its international law obligations. This suggests that the practical utility of the provision is open to question, and is potentially less effective than the intended operation of Article 7 of the High Seas Fishing Convention.³³⁵

Article 119 provides for the theoretical basis of the management of high seas fisheries. In substance it is essentially the same as that used for the EEZ. States are obliged to determine an allowable catch and establish other conservation measures which:

³³³ ICJ Reports 1974 p.3 at pp.31-32

³³⁴ Oda describes the offending article as "very imprecise" and the duty to cooperate as "rather abstract": Oda, *supra* note 179, p.751; Freestone takes a similar view describing the obligations as "lacking a considerable degree of precision": D. Freestone, "The Effective Conservation and Management of High Seas Living Resources: Towards a New Regime" (1994) 5 *Canterbury Law Review* p.341 at p.347

³³⁵ *Supra* at p.84

...are designed, on the best scientific evidence available to the States concerned, to maintain and restore populations of harvested species at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum international standards, whether regional, subregional or global.³³⁶

This provision is virtually identical to that contained in Article 61(3) with the exception of a reference in that article to the economic needs of coastal fishing communities.

The reflection of the same principles for fisheries management on the high seas as for within the EEZ is significant. At one level, it would appear to be the implementation to all oceanic areas of a common approach to the management of marine living resources. This is demonstrated by the identical approach to the requisite scientific data on which to base management decisions, that is, being the best *available* evidence. As with the EEZ, there is no positive duty on States to collect data or conduct research, but merely to make use of the best data to hand.³³⁷

It can be argued that the provisions with respect to the management of the high seas are necessarily flawed. As a common property resource, in the absence of

³³⁶ Article 119(1)(a), Law of the Sea Convention

³³⁷ See the discussion *supra* p.116

coordination of effort and cooperation in data collection and management, over exploitation is a logical conclusion for any high seas fishery that is economically viable.³³⁸ Since each State's objective is the maximum sustainable yield, with qualifications that effectively make it optimum sustainable yield, each State will need data with respect to the existing biomass of the stock in question, as well as the level of fishing effort. In the absence of cooperation, a fishing State would have difficulty in obtaining accurate data as to the activities of other flag State vessels, at least within a time scale that permitted meaningful decisions to be made with respect to the stock.

Even with data, there is no guarantee of a cohesive effort in the calculation of an appropriate catch limit. While the Convention indicates that maximum sustainable yield subject to a variety of qualifications is the appropriate target, Article 119 gives no indication as to how these qualifications are to be applied in any given situation. As already noted in the context of the EEZ, the qualifications give the coastal State an extremely wide discretion to impose whatever total allowable catch it wishes. Consequently, in a fishery which is necessarily shared by a number of States, for the benefit of all, the consideration of what qualifications to MSY are appropriate may lead to widely differing results between the participants.

³³⁸ The need for cooperation and coordination is evidenced in the FAO promotion of the 1993 Compliance Agreement, as well as within the Law of the Sea Convention itself. For a discussion of the Compliance Agreement see Chapter 3 at p.232

Further, the basic notion of setting an allowable catch is inimical to the basic premiss under which high seas fisheries operate; that is, freedom of fishing. Assuming that the fishing State has met its obligations by engaging in negotiations towards the establishment of cooperative structures, there is no impediment on that State setting its own total allowable catch, in much the same fashion as it would for its EEZ. If other States chose to do the same, overharvesting and inevitable collapse would be a logical corollary.

The Law of the Sea Convention does attempt to deal with this problem, by application of its dispute resolution measures under Part XV. Part XV provides for a limited number of categories of dispute to be referred to compulsory dispute settlement under Section 2. Exceptions to compulsory settlement under the Convention do exist, but Article 297 provides that only fisheries disputes affecting the EEZ can be exempted from the process. Accordingly, high seas fishing States can be compelled to participate in dispute resolution procedures, to investigate whether they have breached their obligations.³³⁹

At the time of writing, no distant water fishing nation had been compelled to utilise any dispute resolution mechanism in a dispute concerning its fishing activities, after more than four years of the Convention's operation. It is submitted that the reasons

³³⁹ See generally Boyle, *supra* note 243, *passim*; see also de Yturriaga, *supra* note 156, pp.170-171

for this lack of use are twofold. Firstly, international dispute resolution mitigates against the use of international tribunals to uphold international law. At present, to call another State party to account for the breach of an obligation, a State must demonstrate it has standing to bring the action. In the *South West Africa Cases (Second Phase)*³⁴⁰, the International Court of Justice held that in the absence of some concrete link between the breach and the State bringing the action, a mere concern for a breach of international law was insufficient to have *locus standi*.³⁴¹ While the calls for the Court to overturn the *South West Africa Cases* have been strident, and a reconsideration of the doctrine of standing long overdue,³⁴² it seems likely that the Court will seek to retain at least some connection between the applicant State and the breach of international law. For fisheries cases, this presents a significant problem, as demonstrating damage to a particular State's interests may be problematic. To have standing, the applicant State would have had to have been

³⁴⁰ ICJ Reports 1966 p.7

³⁴¹ *South West Africa Cases (Second Phase)* ICJ Reports 1966 p.7 at p.18; For example see R. Higgins, "The International Court and South West Africa: The Implications of the Judgment" (1966) 42 *International Affairs* p.573; J. Dugard, "The Revocation of the Mandate for South West Africa" (1968) 78 *American Journal of International Law* p.78; see also I.A. Shearer, *Starke's International Law* (London: Butterworths, 1994) p.459

³⁴² See generally W.M. Reisman, "Revision of the South West Africa Cases" (1966) 7 *Virginia Journal of International Law* p.4; R. Higgins, "The International Court and South West Africa - Implications of the Judgment" (1967) 42 *International Affairs* p.573; J. Dugard (ed.), *South West Africa/Namibia Dispute: Documents and Scholarly Writings on the Controversy between South Africa and the United Nations* (Berkeley: University of California Press, 1973)

active in the fishery itself, potentially raising questions of its own culpability.

More significant in the disincentives for the bringing of actions is the nature of the duty owed by a high seas fishing State. The concrete duty owed by such a State to other fishing States is to enter into negotiations, with a view to cooperation. Being a mere *pactum de negotiando*, it would not be difficult for a State to discharge its duty, although as noted previously, a State will not have met such an obligation if it has not been willing to modify its initial negotiating position.³⁴³

One point of difference with the EEZ regime that lends itself to some confusion is Article 119(3). It provides:

States concerned shall ensure that conservation measures and their implementation do not discriminate in form or in fact against the fishermen of any State.

The use of the phrase "discriminate in form or in fact" is also used in Article 24(1)(a) which provides for the circumstances when a coastal State can close part of its territorial sea on a temporary basis to vessels exercising a right of innocent passage. Given its use in that context compels equality of treatment even where one State has jurisdiction, it is suggestive that active participants in a high seas fishery may be in an analogous position. Certainly Burke takes the view that where a conservation regime is in place, the impact of the paragraph is to require them to

³⁴³ *Supra* at p.124

accept the established arrangements in respect of the stock³⁴⁴ - and presumably these arrangements must be applied in a non-discriminatory fashion. Burke uses the example of a high seas fishery where catch is allocated on the basis of historical grounds. In such a situation, he asserts that the new entrant to the fishery should be treated in the same fashion as other non-participants, and receive a zero share.

It is submitted that while Article 119(3) is suggestive of a privileged position for States active in the formulation of conservation measures for high seas fisheries, it is not consistent with the basic freedom of the high seas to adopt such a construction. Such an analysis would mean that States not presently active in high seas fisheries could not do so without consent in any area where an active conservation regime was in place. The nature of the grant of freedom of fishing, and other provisions in Part VII strongly suggest a more liberal view of the impact of Article 119(3). A more likely construction would be that where States have cooperated to set conservation measures, these should not be used as a vehicle to arbitrarily exclude other vessels from fishing in these areas. Certainly that is consistent with the rights of coastal States in the context of enclosed or semi-enclosed seas who are urged to co-ordinate their efforts within such seas, and do not receive any enhanced rights over such sea areas.³⁴⁵

³⁴⁴ Burke, *supra* note 101, p.131

³⁴⁵ See B.H. Oxman, "The Third United Nations Conference on the Law of the Sea: The 1977 New York Session" (1977) 72 *American Yearbook of International Law* p.57 at p.80; this is also the view of de Yturriaga, *supra*

Even if Burke's construction of the paragraph does not reflect the nature of the provision, a new entrant could not enter the fishery without attempting to deal with the State parties to the existing arrangement. The *pactum de negotiando* contained in Article 118 would require at least some effort at *bona fide* discussions with a view to reaching an agreement before commencing fishing. To do otherwise would jeopardise the obligation to conserve the fisheries.³⁴⁶

Whatever the case, Article 119(3) lends itself to some uncertainty as to its impact. Notably, the approach of Burke would be far better in the long term for the effective conservation of high seas areas. A conservation regime that could be protected from being undermined by non-party participation would stand a much greater chance of meeting its objectives. As Burke notes, in the absence of his interpretation of Article 119(3), "successful high seas conservation will occur very infrequently".³⁴⁷

Straddling Stocks

The Law of the Sea Convention also contains a single article that considers the management of stocks that straddle two EEZs or an EEZ and the high seas. Article 63(1) provides that coastal States with adjacent EEZs should seek to agree upon

note 156, pp.157-158

³⁴⁶ This appears to be closer to the view of Nandan, Rosenne and Grandy: Nordquist, *supra* note 162, Vol.3, p.313

³⁴⁷ Burke, *supra* note 101, p.131

measures necessary to co-ordinate and ensure conservation and development of overlapping stocks³⁴⁸, while Article 63(2) is a similar provision, directed at stocks that overlap an EEZ and the adjacent high seas.³⁴⁹

Neither paragraph in respect of Article 63 creates any substantial obligation for coastal or fishing States to undertake any positive action with respect to the conservation and management of species, beyond that already existing in Articles 61 and 62. Rather, it simply creates a *pactum de negotiando*³⁵⁰, which as with the obligation in respect of high seas rights considered above, is an extremely weak duty. In the context of Article 63(1), the scope of the duty is further eroded by the

³⁴⁸ Article 63(1), Law of the Sea Convention provides:

Where the same stock or stocks of associated species occur within the exclusive economic zones of two or more coastal States, these States shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary to co-ordinate and ensure the conservation and development of such stocks without prejudice to the other provisions of the Part.

³⁴⁹ Article 63(2), Law of the Sea Convention provides:

Where the same stock or stocks of associated species occur both within the exclusive economic zone and in an area beyond and adjacent to the zone, the coastal State and the States fishing for such stocks in the adjacent area shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary for the conservation of these stocks in the adjacent area.

³⁵⁰ M. Hayashi, "The Management of Transboundary Fish Stocks under the LOS Convention" (1993) 8 *International Journal of Marine and Coastal Law* p.245 at p.249; See also International Law Association International Committee on the EEZ, "Principles Applicable to Living Resources Occurring Both Within and Without the Exclusive Economic Zone or in Zones of Overlapping Claims", *Report of the 65th Conference of the International Law Association* (Cairo: ILA, 1992) p.5

trailer "without prejudice to the other provisions of this Part". This suggests that neither coastal State dealing with a straddling stock is obliged to diminish its sovereign rights under Part V, other than to seek to cooperate on setting up conservation measures, consistent with those it should already have in place under Articles 61 and 62.³⁵¹ Given that disputes concerning fisheries within the EEZ are not subject to compulsory dispute resolution under Part XV, there is little prospect of remedying a critical situation if one State takes up a recalcitrant position.³⁵² That said, as already noted, the International Court of Justice in a different context has indicated a *pactum de negotiando* will require good faith negotiations on the part of all parties, and that refusing to consider modifications to a State's original negotiating position would fail to satisfy this good faith requirement.³⁵³

Article 63(2) raises a different question, and the practical impact of this measure has been the subject of much debate among publicists.³⁵⁴ The provision gives no preferential rights to the adjacent coastal State in compelling the cooperation of distant water fishing nations, placing the coastal State in a significantly less

³⁵¹ Attard, *supra* note 86, p.183

³⁵² Burke, *supra* note 101, p.238; Hayashi, *supra* note 350, pp.249-250

³⁵³ *North Sea Continental Shelf Cases* ICJ Reports 1969 p.3 at p.47; *Agreement on German External Debts Arbitration (Greece v Federal Republic of Germany)* 47 ILR 418 at pp.452-453; see above at p.124

³⁵⁴ For example see Davies & Redgwell, *supra* note 7, pp.239-241; Tahindro, *supra* note 216, pp.19-20

advantageous position than that it would have been under the 1958 High Seas Fisheries Convention.³⁵⁵ Similarly, no guidance is given with respect to how cooperation might take place, or how TACs for straddling stocks might be allocated between interested States.³⁵⁶

This situation for a coastal State is not quite so poor as it might appear. To begin, Article 63(2) ought to be read in conjunction with Article 116, which provides the right of States to fish the high seas is subject to the rights and duties as well as the interests of coastal States provided for in Article 63(2). Thus while the coastal State and the distant water fishing State are still only subject to the same weak *pactum de negotiando*, the distant water fishing State is also subject to the "rights and duties as well as the interests of coastal States" subject to *inter alia* Article 63(2).

This has been interpreted by some publicists to indicate that the coastal State has an advantageous position in its dealings with DWFNs fishing for straddling stocks.³⁵⁷

³⁵⁵ An effort to modify Article 63(2) to give such preferential rights was led by Canada in 1982 and supported by a number of States, but ultimately proved unsuccessful: See Doc. A/Conf.62/L.114, 13 April 1982: reprinted in R. Platzöder (ed.), *Third United Nations Conference on the Law of the Sea: Documents*, (Dobbs Ferry: Oceana, 1982) Vol.16, p.25

³⁵⁶ Dahmani, *supra* note 140, pp.114-115

³⁵⁷ E.L. Miles & W.T. Burke, "Pressure on the United Nations Convention on the Law of the Sea of 1982 Arising from New Fisheries Conflict: The Problem of Straddling Stocks" (1989) 20 *Ocean Development and*

Miles and Burke take the view that while the coastal State would have no power of enforcement over foreign fishing vessels on the high seas, if a DWFN refuses to negotiate, then the coastal State can unilaterally set a TAC for the stock concerned. Failure to comply with the TAC could not be dealt with directly, but would give rise to a breach of international law attributable to the DWFN.³⁵⁸

Others have taken a quite different view, essentially along the lines that the impact of Article 116 is to reinforce a State's duty of cooperation as expressed in Article 63(2).³⁵⁹ Since the right to fish on the high seas in the absence of Article 116 would only require cooperation between States fishing for identical living resources or different resources in the same area³⁶⁰, it might be argued that there would be no duty to cooperate with a coastal State who was not itself actively engaged in harvesting a straddling stock. Ultimately, the requirement of cooperation would necessitate a balancing of interests rather than the supremacy of the coastal State.³⁶¹ Certainly given the failure of the delegates at UNCLOS III to adopt the Canadian proposal to enshrine preferential rights for the coastal State in Article

International Law p.343

³⁵⁸ Miles & Burke, *supra* note 357, pp.350-353; Lugten takes a similar view: G.L. Lugten, "Fisheries War for the Halibut" (1995) 25 *Environmental Policy and Law* p.223 at p.224

³⁵⁹ Hey, *supra* note 66, pp.82-83; Kwiatkowska, *supra* note 185, p.80

³⁶⁰ Pursuant to Article 118, Law of the Sea Convention

³⁶¹ Davies & Redgwell, *supra* note 7, pp.240-242

63(2), and the existence of similar statements in Articles 66 and 67 which are also alluded to in Article 116, it is submitted that this interpretation of the provision would be preferable.³⁶²

As already noted in the context of high seas fisheries, disputes concerning such fisheries are subject to compulsory dispute resolution under Part XV of the Law of the Sea Convention.³⁶³ While in some respects this may lead to the unsatisfactory result of dividing a dispute into two parts, one of which would be justiciable and the other not, it would at least place in issue the interpretation of Article 63(2) before an international tribunal.³⁶⁴

³⁶² The ICJ in finding it had no jurisdiction to determine the *Fisheries Jurisdiction Case (Spain v Canada)* declined the opportunity to consider whether Article 63(2) represented custom: 4 December 1998, reprinted at <<http://www.icj-cij.org/icjwww/idocket/iec/iecframe.htm>>; Mfodwo, Blay and Tsamenyi were of the view in 1989 that the provision did not represent custom: S.K.B. Mfodwo, B.M. Tsamenyi & S.K.N. Blay, "The Exclusive Economic Zone: State Practice in the African Atlantic Region" (1989) 20 *Ocean Development and International Law* p.445 at p.462

³⁶³ The question might be posed whether a failure to reach an agreement over straddling stocks would amount to a dispute between the protagonist States for the purposes of Part XV: Davies & Redgwell, *supra* note 7, p.236. One response might be that existence of a dispute might of itself create a dispute which might be considered under Part XV. On the existence of a dispute at international law, and how this is established by objective determination see generally *Case concerning East Timor* ICJ Reports 1995 p.90 at pp.99-100; *South West Africa, Preliminary Objections* ICJ Reports 1962 p.328; *Interpretation of the Peace Treaties with Bulgaria, Hungary and Romania Advisory Opinion* ICJ Reports 1950 p.74

³⁶⁴ Boyle, *supra* note 243, p.43; Davies & Redgwell, *supra* note 7, p.247

The perceived inadequacy of Article 63 in providing a sufficient framework for meaningful negotiation between States, and the occurrence of a number of significant fisheries disputes involving straddling stocks led the international community to commence a reconsideration of this area. In 1993, the United Nations Secretary-General convened a conference to resolve the problems of straddling stocks and highly migratory species.³⁶⁵ The principles of marine living resource management which that conference ultimately adopted represented a significant change in the philosophy of management, and consequently is more appropriately discussed in the following chapter.

³⁶⁵ Pursuant to UNGA Resolution 47/192, 22 December 1992.

CHAPTER THREE

LIVING RESOURCE MANAGEMENT: THE PRECAUTIONARY MODEL

As noted in Chapter 2, inherent within the maximum yield approach to marine living resource management is the notion that sufficient data can be collected on any targeted stock to determine what its maximum yield will be. In order to make decisions as to what an acceptable level of harvest will be, decision-makers need to know the existing biomass of the stock, details of previous harvest levels, and data concerning the life cycle and fecundity of the species in question.¹ Without such data, the complex models used to calculate the maximum yield, be it MSY or MEY, are compelled to rely upon the reasoned speculation of marine biologists, and fisheries economists.²

This problem is further magnified by the tremendous complexity of natural ecosystems when compared to the models used in the calculation of appropriate yields. Stock modelling typically seeks to identify the biomass, fecundity and recruitment patterns of an individual species, with limited regard to the surrounding

¹ See the discussion in Chapter 2

² M. Berrill, *Plundered Seas: Can the World's Fish be Saved?* (San Francisco: Sierra Club, 1997) pp.41-50

circumstances. A single stock approach is implicit within international practice, given that most regional maximum yield based conventions target species, or have generally limited their consideration to a distinct set of commercial species.³ In nature, individual species may be affected by factors as diverse as water temperature, currents, and the relative population strengths of species which they prey upon, or predator species, or even species higher up or lower down in the food chain. While the relative impact of many of these factors may be small, there is no question that the cumulative impact of combinations of factors may also have a discernible effect on the status of the stock.

In theory, a perfect management system would operate based on data derived from all relevant factors within the ecosystem. In practice, no scientific monitoring system can record all the possible inputs from a complex ecosystem.⁴ Monitoring

³ For examples of species-specific instruments see *International Convention for the Regulation of Whaling*, done at Washington on 2 December 1946, entered into force 10 November 1948: 161 UNTS 72; *Convention for the Establishment of an Inter-American Tropical Tuna Commission*, done at Washington on 31 May 1949, entered into force 3 March 1950: 80 UNTS 3; *International Convention for the Conservation of Atlantic Tunas*, done at Rio de Janeiro on 14 May 1966, entered into force on 21 March 1969: 652 UNTS 237; *Convention for the Conservation of Salmon in the North Atlantic Ocean*, done at Reykjavik on 2 March 1982, entered into force 1 October 1983: 2 SMT 157; *Convention for the Conservation of Southern Bluefin Tuna*, done at Canberra on 10 May 1993, entered into force 20 May 1994: AustTS 1994 No.16; *Agreement for the Establishment of the Indian Ocean Tuna Commission*, done at Rome on 25 November 1993, entered into force 27 March 1996: AustTS 1996 No.20

⁴ Note the response of some delegates to the Third Session of the UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks

will usually rely upon statistical techniques for the principal variables in the system, and scientists either choose not to collect data on minor factors, or may not even be aware of them. As such, even the most demanding scientific monitoring, combined with inspired guesswork will not amount to anything more than an approximation of the actual state of the stock. However, as an approximation, it will more likely reflect actuality than simple stock monitoring, as it will take into account more of the factors that have actually shaped the stock. Basing any decision upon educated guesses as to relevant data means that decisions may periodically prove to be incorrect, potentially with damaging results. The maximum yield model at its most simple is more likely to fall into error, because it lacks data on the ecosystem in which the target species exists.

The maximum yield model does not properly address either of these problems, because of two assumptions inherent within the model. The first assumption concerns the level of available data. As noted above, the model will assume that the level of data concerning a stock will always be sufficient to make valid decisions concerning the harvesting of it. Without data, the calculation of the appropriate level of harvesting is impossible, and therefore the risk of exceeding the

(14-31 March 1994) was that an ecosystem-based approach may not be practical or attainable: (1994) *7 Earth Negotiations Bulletin*: <<http://www.mbnet.mb.ca/linkage/vol07/0730024e.html>> This also equates with responses from Drs Clarke and Richard interviewed at the Freshwater Institute of the Canadian Department of Fisheries and Oceans in June 1996: see list of interviews in the Appendix.

maximum sustainable yield in any given year is substantially increased.⁵ The second assumption is that an individual stock can be managed as an individual stock, and not part of a complex ecosystem, portions of which may be subject to commercial or recreational harvesting, and other portions may be only indirectly affected by human activity.⁶

The model considered in this chapter seeks to address the problems with these two assumptions. While the overall objectives of maximising a sustainable return may be broadly similar, this model directly addresses the issue of the level of data available to the managers of a fishery, and further, how to react in the event that there is not sufficient data to draw meaningful conclusions about the stock concerned. It also addresses the inter-relationships between species, and what consequences flow from every commercially exploited marine species being part of

⁵ International law furthers such an assumption by requiring that States make decisions based upon the "best available data". However, as noted in Chapter 2, it is clear that there is limited substance to such an obligation, and no certainty that there will be adequate data available in respect of any given fishery. A similar point is made by Kesteven, where he notes that the concept of MSY was not wrong, but "its determination was rarely, if ever, correct": G.L. Kesteven, "MSY Revisited: A Realistic Approach to Fisheries Management and Administration" (1997) 21 *Marine Policy* p.73 at pp.73-76

⁶ These difficulties are magnified still further when one considers that many stocks are found in areas subject to the jurisdiction of more than one State. Without data from part of the stock's range, calculations may be more likely to fall into error. In addition if neighbouring States each seek their own MSY, the total catch may exceed the MSY for the fishery as a whole, leading to over-exploitation: see the discussion in G. Saetersdal, "Problems of Managing and Sharing of Living Resources under the New Ocean Regime" (1983) 4 *Ocean Yearbook* p.45 at pp.46-49

a wider ecosystem.

Consideration of the model in this chapter will follow this division, firstly considering the reaction to insufficient data, through the adoption of a precautionary approach, and then turning to the question of wider management of the ecosystem. Although distinct, ecosystem management and precaution are closely related, as the effective application of the latter requires some familiarity with the operation of the ecosystem. Consequently, it is logical that these two concepts be dealt with in the same chapter, however a division is also natural, because international law has, to a large extent, considered the issues separately in the wider context of international environmental law.

The remainder of this chapter considers the content and development of the precautionary principle in international environmental law, before moving to its emergence, application and content in international fisheries law. The final section will consider the status in international law of ecosystem management, and its relationship to precaution. The chapter will close with some consideration of co-management systems, which essentially apply a broader ecosystem approach, but alter the tradition decision-making structures. In such systems, communities are involved as an active participant in management, and utilise accumulated stores of knowledge on the ecosystem to supplement scientific data.

The Precautionary Principle

Definition

The notion of precaution in international environmental law is a relatively recent phenomenon, and has been the source of significant debate among publicists.⁷ Differences even exist as to whether it is more appropriate to refer to a "precautionary approach" rather than a "precautionary principle", or whether any meaningful distinction between these terms can be drawn.⁸ In this study, the terms will be used interchangeably, although the term "precautionary approach" will indicate the practical implementation of the "precautionary principle".⁹

Definitions of the concept of precaution abound, and it is appropriate to briefly

⁷ See discussion below.

⁸ On this issue see the discussion by Bicego: C.P. Bicego, *The Precautionary Principle in Law and Science: Nomos and Narrative*, LLM Thesis, Dalhousie University, August 1996, p.15; cf. S.M. Garcia, *The Precautionary Approach to Fisheries with reference to Straddling Stocks and Highly Migratory Species*, (Rome: FAO, 1994) p.6; see also A. Nollkaemper, "'What you risk reveals what you value', and Other Dilemmas Encountered in the Legal Assaults on Risks" in D. Freestone and E. Hey (eds), *The Precautionary Principle and International Law: The Challenge of Implementation* (The Hague: Kluwer Law, 1996) p.73 at pp.79-80

⁹ This is the view of Hey, who even initially refers to the precautionary principle/approach, but ultimately prefers the "precautionary concept": E. Hey, "The Precautionary Concept in Environmental Policy and Law: Institutionalizing Caution" (1992) 4 *Georgetown International Environmental Law Review* p.303 at pp.304-305; Freestone also uses the terms interchangeably: D. Freestone, "The Road from Rio: International Environmental Law after the Earth Summit" (1994) 6 *Journal of Environmental Law* p.193 at pp.210-213

consider some of these in order to clarify further discussions. As good a starting point as any is Principle 15 of the 1992 Rio Declaration on the Environment and Development:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.¹⁰

In essence, a precautionary approach in this context requires remedial action in the face of serious environmental threat to be taken, even when there is a lack of scientific certainty as to the full implications and consequences of the threat.

Publicists have proposed a number of other definitions, most commonly couched in terms of the responses to environmental harm.¹¹ Cameron and Abouchar refer to the precautionary principle as that which "ensures that a substance or activity posing a threat to the environment, is prevented from adversely affecting the environment, even if there is no conclusive scientific proof linking that particular substance or activity to environmental damage" and that it is to be used as a "*guiding principle*"

¹⁰ *Rio Declaration on Environment and Development*, adopted at Rio de Janeiro on 14 June 1992; reprinted 31 ILM 874 (1992)

¹¹ VanderZwaag notes that one study reproduced some 12 different international definitions: D. VanderZwaag, "The Concept and Principles of Sustainable Development: 'Rio-Formulating' Common Law Doctrines and Environmental Laws" (1993) 13 *Windsor Yearbook of Access to Justice* p.39 at p.46; Kindall notes there is no commonly accepted formulation of the principle: M.P.A. Kindall, "UNCED and the Evolution of Principles in International Environmental Law" (1991) 25 *John Marshall Law Review* p.19 at p.24

for environmental decision-makers.¹² Hohmann notes that the principle itself is somewhat imprecise, but incorporates the notion that the "careful use of natural resources requires that precautionary measures be taken not only in cases of definite danger, but also in cases which have a *concern or risk potential*".¹³ Freestone describes it as a process within environmental "decision-making in favour of a bias towards safety and caution".¹⁴ Gündling takes a similar view noting "precautionary action must be taken to ensure that the loading capacity of the environment is not exhausted, and it also requires action even if the risks are not yet certain but only probable, or, even less, not excluded".¹⁵ Hey takes a similar view, indicating that lack of scientific certainty ought not to be used as a reason to defer measures to enhance the quality of the environment.¹⁶ The most simple

¹² J. Cameron and J. Abouchar, "The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment" (1991) 14 *Boston College International and Comparative Law Review* p.1 at p.2

¹³ H. Hohmann, *Precautionary Legal Duties and Principles of Modern International Environmental Law - The Precautionary Principle: International Environmental Law Between Exploitation and Protection* (London: Graham and Trotman, 1994) p.10 and pp.189-190

¹⁴ Freestone, *supra* note 9, p.211

¹⁵ L. Gündling, "The Status in International Law of the Principle of Precautionary Action" (1990) 5 *International Journal of Estuarine and Coastal Law* p.23 at p.26; see also G.D. Fullem, "The Precautionary Principle: Environmental Protection in the Face of Scientific Uncertainty" (1995) 31 *Willamette Law Review* p.495 at p.498

¹⁶ Hey, *supra* note 9, p.311. Hey goes on to indicate four elements that would characterise a precautionary approach:

(1) clean production methods, best available technology and environmental practices applied;

formulation is given by Cross, in an article critical of the application of the principle, where he equates it with the old adage "better safe than sorry".¹⁷

A workable definition of the precautionary principle has been also considered by the authors of reports, and by the framers of a variety of international instruments.

Agenda 21, adopted at the UNCED Conference in 1992 provides in Chapter 17:

A precautionary and an anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment. This requires, *inter alia*, the adoption of precautionary measures, environmental impact assessments, clean production techniques, recycling, waste audits and minimization, construction and/or improvement of sewage treatment facilities, quality management criteria for handling hazardous substances, and a comprehensive approach to damaging impact from air, land and water.¹⁸

This reference is more in the nature of collection of measures designed to implement a precautionary approach, and a definition in itself. The parties to the London Convention in 1990 resolved:

...that in implementing the London Dumping Convention the Contracting Parties shall be guided by a precautionary approach to environmental protection whereby preventative measures are taken when there is reason to

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- (2) comprehensive EIA and economic impact assessment to be used;
 - (3) stimulation of research to better understand long-term options available;
 - (4) legal, administrative and technical procedures to facilitate this approach.

Ibid., p.311

¹⁷ F.B. Cross, "Paradoxical Perils of the Precautionary Principle" (1996) 53 *Washington and Lee Law Review* p.851

¹⁸ Para. 17.21, *Agenda 21*, adopted at Rio de Janeiro on 13 August 1992: A/Conf.151/26 (Vol.II) reproduced in (1992) 8 *International Organizations and the Law of the Sea Documentary Yearbook* p.400

believe that substances or energy introduced into the marine environment are likely to cause harm even when there is no conclusive evidence to prove a causal relation between inputs and their effects.¹⁹

A number of common factors can be drawn from all these definitions and observations. Firstly, precaution is a principle utilised in decision-making, not a process or end in itself. It is an inbuilt bias designed to assist a decision-maker when faced with a decision that contains some level of uncertainty.²⁰ This does not mean that all activities with the potential for harm will be prohibited, but rather, the onus of proof is shifted to those wishing to undertake an activity to demonstrate that its impacts will not be detrimental.²¹

A drawback of the principle is that exactly how great an impact upon decision-making there ought to be is not specified - that is, the principle will not indicate how cautious an individual ought to be²², but in practice this can be divined from

¹⁹ Resolution LDC 44(14), Annex 2, LDC Doc 14/16, 30 December 1991: quoted in D. Freestone and E. Hey, "Origins and Development of the Precautionary Principle" in D. Freestone and E. Hey (eds), *The Precautionary Principle and International Law: The Challenge of Implementation* (The Hague: Kluwer Law, 1996) p.1 at p.7

²⁰ O. McIntyre and T. Mosedale, "The Precautionary Principle as a Norm of Customary International Law" (1997) 9 *Journal of Environmental Law* p.221 at p.222

²¹ See Freestone, *supra* note 9, p.212; Cameron & Abouchar, *supra* note 12, p.22; see also A.T. Charles, "Fisheries in Transition" (1998) 13 *Ocean Yearbook* p.15 at p.21

²² This is a criticism of Bodansky: D. Bodansky, "Scientific Uncertainty and the Precautionary Principle" (1991) 33 *Environment* p.5

the surrounding circumstances, the perceived level of risk, level of potential damage and the like.²³ Applying the principle to exclude any action, in the event of any risk, has been described by Nollkaemper as giving the principle an absolutist character, which he indicates may need to be mitigated.²⁴

Secondly, while the majority of the above examples are drawn from the sphere of marine pollution, there is no reason why the principle ought not to be applied as a tenet of general international environmental law. Certainly the reference in the Rio Declaration is not expressed to in any way restrict application of the principle to other areas beyond marine pollution, including marine living resource management.²⁵

²³ Kiss suggests that precaution ought to come into play when the risk threatening the environment is high: A. Kiss, "The Rights and Interests of Future Generations and the Precautionary Principle" in D. Freestone and E. Hey, *The Precautionary Principle and International Law: The Challenge of Implementation* (The Hague: Kluwer Law, 1996) p.19 at p.27; see also Hey, *supra* note 9, p.310; D.M. Dzidzornu, "Four Principles in Marine Environmental Protection: A Comparative Analysis" (1998) 29 *Ocean Development and International Law* p.91 at p.101

²⁴ Nollkaemper, *supra* note 8, pp.76-79; see also the discussion on this point by Hickey and Walker: J.E. Hickey Jr. and V.R. Walker, "Refining the Precautionary Principle in International Environmental Law" (1995) 14 *Virginia Environmental Law Journal* p.423 at pp.445-453

²⁵ In fact, this point was a matter of some debate between States during the second session of the United Nations Conference on Straddling and Highly Migratory Fish Stocks in July 1993. The European Community, with the support of Japan, Poland, the Philippines and Korea, suggested that Principle 15 of the Rio Declaration could not be automatically translated to fisheries: FAO Doc. A/Conf. 164/INF.2; see discussion in the (1993) 7 *Earth Negotiations Bulletin*: <<http://www.mbnet.mb.ca/linkages/vol107/>

Finally, implicit in the precautionary approach is the need to consider environmental decision-making in both a long-term and holistic way. Small environmental impacts, that in the short term can appear minor and transitory, can over time build up a cumulative effect that can be extremely detrimental. Large scale effects are often easily observed, and therefore easily factored into decision-making. Small scale impacts are less readily observed, and can spring from a wider variety of sources, and consequently their impact will, in the longer term at least, be more difficult to ascertain.²⁶

Precaution in International Environmental Law

The precautionary principle has most often had its origins attributed the German domestic law concept of the *Vorsorgeprinzip* adopted into environmental legislation²⁷, although echoes of it can be found in aspects of the English common law doctrine of nuisance, particularly in the tests used for the granting of *quia timet* injunctions.²⁸ Similarly, a variation on the core concept of precaution can be seen

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²⁶ Hey, *supra* note 9, p.308

²⁷ For example, see S. Boehmer-Christiansen, "The Precautionary Principle in Germany: Enabling Government" in T. O'Riordan and J. Cameron (eds), *Interpreting the Precautionary Principle* (London: Cameron May, 1994) p.31 at pp.33-57; Bicego, *supra* note 8, pp.4-8

²⁸ See discussion by Bicego: Bicego, *supra* note 8, pp.9-13

in Principle 7 of the Stockholm Declaration on the Human Environment²⁹, although it is also clear that the adoption of a precautionary approach was not the intention of the States supporting the Declaration³⁰:

States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.³¹

However, whatever similarities can be found with the precautionary principle in the common law, certainly the first conscious applications of the principle in domestic environmental legislation come from Germany. As early as 1970, *Vorsorgeprinzip* was appearing in draft legislation³², and by 1976 was being referred to in German

²⁹ A like-minded approach can also be seen in the World Charter for Nature which provides:

Activities which are likely to pose a significant risk to nature shall be preceded by an exhaustive examination; their proponents shall demonstrate that expected benefits outweigh potential damage to nature, and where potential adverse effects are not fully understood, those activities should not proceed.

Article II(11)(b), *World Charter for Nature*, UNGA Res. 37/7, 9 November 1982: reprinted 22 ILM 455 (1983).

³⁰ VanderZwaag notes that Principle 6 of the Declaration essentially supported the assimilative capacity approach to environmental management, which is not consistent with precaution: VanderZwaag, *supra* note 11, p.46; see also Bicego, *supra* note 8, p.39

³¹ Principle 7, *Stockholm Declaration on the Human Environment*, adopted at Stockholm on 16 June 1972: reprinted 11 ILM 1416 (1972)

³² Boehmer-Christiansen, *supra* note 27, p.35

Federal Government environmental policy papers³³, and from 1980 was entrenched in German environmental legislation.³⁴

It is not surprising therefore, that the appearance of the precautionary principle in international law originates in Western Europe, in fora where German participation was significant.³⁵ The most oft cited³⁶ example of the first explicit appearance of the precautionary principle in the Ministerial Declaration from the Second International Conference on the Protection of the North Sea, held in London in 1987.³⁷ The participants stated they:

³³ "Environmental Policy is not fully accomplished by warding off imminent hazards and the elimination of damage which has occurred. Precautionary environmental policy requires furthermore that natural resources are protected and demands on them made with care.": K. von Moltke, *The Vorsorgeprinzip in West German Environmental Policy* (London: HMSO, 1988), 12th Report of the Royal Commission on Environmental Pollution, quoted in J. Cameron & J. Abouchar, "The Status of the Precautionary Principle in International Law" in D. Freestone & E. Hey (eds), *The Precautionary Principle and International Law: The Challenge of Implementation* (The Hague: Kluwer Law, 1996) p.29 at p.31

³⁴ Hohmann, *supra* note 13, p.8

³⁵ McIntyre & Mosedale, *supra* note 20, p.221

³⁶ See generally Cameron & Abouchar, *supra* note 12, p.5; VanderZwaag, *supra* note 11, p.47; McIntyre & Mosedale, *supra* note 20, p.224; Bicego, *supra* note 8, p.40; Freestone & Hey, *supra* note 19, p.5

³⁷ Freestone notes that the German delegation attempted to have reference to the precautionary principle included in the Ministerial Declaration made at the First Ministerial Conference on the Protection of the North Sea, at Bremen in 1984. The English text refers only to a "preventative approach" while the German uses the word *Vorsorgemassnahmen*: Freestone, *supra* note 9, pp.210-211

...accept the principle of safeguarding the marine ecosystem of the North Sea by reducing polluting emissions of substances that are persistent, toxic and liable to bioaccumulate at source by the use of best available technology and other appropriate measures. This applies especially where there is reason to assume that certain damage or harmful effects on the living resources of the sea are likely to be caused by such substances, even when there is no scientific evidence to prove a causal link between emissions and effects ('the principle of precautionary action').³⁸

Following this breakthrough reference, precaution began to appear in an increasing number of international environmental conventions, declarations, international agency reports and agreements. Almost contemporaneously, reference to the principle appeared in the Preamble of Montreal Protocol to the Vienna Convention for the Protection of the Ozone Layer³⁹, with further use of it in the OSPAR Convention⁴⁰, the Bamako Convention⁴¹, the Maastricht Treaty⁴², the Helsinki

³⁸ Article XVI(1), *Second International Conference on the Protection of the North Sea, Ministerial Declaration*, adopted at London on 25 November 1987: reprinted in 27 ILM 838 (1988)

³⁹ Preamble, *Montreal Protocol on Substances that Deplete the Ozone Layer*, done at Montreal on 16 September 1987, entered into force on 1 January 1989: reprinted 26 ILM 1541 (1987). *Vienna Convention for the Protection of the Ozone Layer*, done at Vienna on 22 March 1985, entered into force on 22 September 1988: reprinted TIAS 11097

⁴⁰ Article 2(2)(a), *Convention for the Protection of the Marine Environment of the North-East Atlantic*, done at Paris on 22 September 1992, yet to enter into force: reprinted 32 ILM 1069 (1993)

⁴¹ Article 4(3)(f), *Convention on the Ban of the Import into Africa and the Control of the Transboundary Movement and Management of Hazardous Wastes within Africa*, done at Bamako on 29 January 1991, yet to enter into force: reprinted 30 ILM 773 (1991)

⁴² Article 130(2), *Treaty of European Union*, done at Maastricht on 7 February 1992, entered into force on 1 November 1993: reprinted 31 ILM 247 (1992)

Convention on Transboundary Watercourses⁴³, and the UN Framework Convention on Climate Change.⁴⁴ The precautionary principle was also expressly supported in The Hague Declaration on the Protection of the North Sea⁴⁵, the Baltic Sea Declaration⁴⁶, the Bergen Declaration⁴⁷, and by the Secretary-General of the UN in his 1990 Report on the Law of the Sea.⁴⁸ In the case of the last of these documents, the Secretary-General noted that the principle was of considerable significance in the context of marine protection and resource conservation, and that it had been "endorsed by virtually all recent international forums [sic]".⁴⁹

⁴³ Article 2(5)(a), *Convention on the Protection and Use of Transboundary Watercourses and International Lakes*, done at Helsinki on 17 March 1992, yet to enter into force: reprinted 31 ILM 1312 (1992)

⁴⁴ Article 3(3), *United Nations Framework Convention on Climate Change*, done at New York on 9 May 1992, entered into force 21 March 1994: reprinted 31 ILM 849 (1992)

⁴⁵ *Final Declaration of the Third Conference on the Protection of the North Sea*, adopted at the Hague on 8 March 1990: reprinted (1990) 1 *Yearbook of International Environmental Law* 658 at 661

⁴⁶ Principle 12, *Baltic Sea Declaration*, adopted at Ronneby on 3 September 1990: reprinted in (1990) 1 *Yearbook of Environmental Law* p.423

⁴⁷ Paragraph 7, *Bergen Ministerial Declaration on Sustainable Development in the ECE Region*, adopted at Bergen on 16 May 1990: reprinted (1990) 1 *Yearbook of Environmental Law* p.430

⁴⁸ UN Doc. A/45/721, 19 November 1990, para.60: reprinted (1990) 6 *International Organizations and the Law of the Sea Documentary Yearbook* p.69 at p.83

⁴⁹ *Ibid.* See also Freestone, *supra* note 9, p.210; McIntyre & Mosedale, *supra* note 20, p.226

Most significant however was the support for precaution at the United Nations Conference on the Environment and Development held in Rio de Janeiro in June 1992. UNCED was the largest international environmental meeting in history, and out of it came a profusion of documents and instruments designed to shape environmental practices into the next century and beyond. Some of these instruments were adopted by the Conference as binding international agreements, while others had the status of declarations or non-binding policy statements. Falling into the latter category was Agenda 21, a vast policy document intended to set basic parameters for environmental legislative and administrative action of States in a wide variety of fields. Chapter 17 of Agenda 21 dealt with the oceans⁵⁰, incorporated numerous references to the precautionary approach.⁵¹ Similarly the Rio Declaration, extracted above, expressly supported the adoption of the precautionary principle by States.⁵² Although not expressly referring to the principle, it was also evident that it was consistent with the policy direction provided in the Biodiversity Convention⁵³, also adopted at the UNCED

⁵⁰ The formal title of the chapter is *Protection of the Oceans, All Kinds of Seas, including Enclosed and Semi-Enclosed Seas, and Coastal Areas and the Protection, Rational Use and Development of their Living Resources*.

⁵¹ For example see paragraphs 17.1; 17.5; 17.21; 17.22; and 17.96. Notably, all of the references to precaution are in the context of marine pollution, and not living resource management. This omission is discussed below at p.221

⁵² *Supra* note 10

⁵³ *Convention on Biological Diversity*, done at Rio de Janeiro on 5 June 1995, entered into force 29 December 1993: reprinted 31 ILM 822 (1992)

Conference.⁵⁴

Post-UNCED, the precautionary principle had continued to find support, particularly in the context of marine living resource management. The FAO has supported the introduction of a precautionary approach since the early 1990s.⁵⁵ This was most clearly manifested in the FAO's promotion of the Code of Conduct for Responsible Fisheries⁵⁶, which explicitly urges States to incorporate the precautionary approach into their fisheries management decision-making structures.⁵⁷ The content of these provisions will be considered in greater detail below.

As well as the FAO's support, the international community has also supported the adoption of a precautionary approach to marine living resource management in a number of fora. Most notably, the principle was included in the 1995 Straddling

⁵⁴ See generally C.C. Joyner, "Biodiversity in the Marine Environment: Resource Implications for the Law of the Sea" (1995) 28 *Vanderbilt Journal of Transnational Law* p.635

⁵⁵ For example see the Report from the Technical Consultation on High Seas Fishing held in Rome in September 1992: FAO, *Report of the Technical Consultation on High Seas Fishing*, (Rome: FAO, 1992) FAO Fisheries Report no.484, para.66-69

⁵⁶ *Code of Conduct for Responsible Fisheries*, adopted at Rome on 31 October 1995: reprinted in (1995) 11 *International Organizations and the Law of the Sea Documentary Yearbook* p.700

⁵⁷ See Article 6.5 and 7.5, Code of Conduct for Responsible Fisheries

and Highly Migratory Fish Stocks Agreement⁵⁸, but has also been expressly adopted by the State parties to the Convention for the Conservation of Antarctic Marine Living Resources⁵⁹ (CCAMLR)⁶⁰, the Convention for the International Trade in Endangered Species⁶¹ (CITES)⁶², and the International Convention for the Regulation of Whaling (ICRW)⁶³. All of these instruments suggest a wider application of the principle than to just pollution, but to incorporate living resource conservation and management.

⁵⁸ *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, done at New York on 4 August 1995, not yet in force: reprinted 34 ILM 1542 (1995) [hereafter referred to as SS/HMS Agreement]

⁵⁹ *Convention for the Conservation of Antarctic Marine Living Resources*, done at Canberra on 20 May 1980, entered into force 7 April 1982: AustTS 1982 No.9

⁶⁰ For example see CCAMLR, *Report of the Twelfth Meeting of the Commission*, 25 October - 5 November 1993, pp.27-28; see Chapter 5

⁶¹ *Convention on the International Trade in Endangered Species of Wild Flora and Fauna*, done at Washington on 3 March 1973, entered into force 1 July 1975: 993 UNTS 243

⁶² *Fort Lauderdale Resolution*, adopted at Fort Lauderdale on 18 November 1994, Resolution 9.24: reproduced <<http://www.wcmc.org.uk:80/CITES/english/eresol91.htm>>; see also McIntyre, *supra* note 20, p.227

⁶³ Birnie and Boyle note that the policy of the International Whaling Commission (IWC) adopted in 1991 provide "an example of the application in a wildlife context of the precautionary principle more familiar in the pollution context": P.W. Birnie and A.E. Boyle, *International Law and the Environment* (Oxford: Clarendon Press, 1992) p.455

Status of Precaution at International Law

Having ascertained that the precautionary principle is well entrenched within the fabric of contemporary international environmental law, and sketched its development up to the present, the next question is the status of the principle in international law. More directly, it is necessary to determine what obligations are upon States to apply a precautionary approach to their activities. This in turn gives rise to two further issues: has the precautionary principle become a norm of customary international; and, where precaution is required of States in instruments, both binding and non-binding, what is the nature of this obligation and how is it to be met?

Precaution as part of customary international law has been an issue much discussed by publicists during the 1990s. The elements of custom were considered in Chapter 2⁶⁴, and there are essentially two requirements: that there be almost uniform and universal State practice complying with the norm, and that State practice be accompanied by *opinio juris*. As already noted, the former is always more easily demonstrated than the latter, because the latter depends upon the artificial notion that a State can possess a belief as to the content of international law, and that such a belief can be evidenced. Since that evidence usually is derived from State practice, the former requirement often tends to dominate in analyses of the content of custom.

⁶⁴ See Chapter 1 at p.18

A number of publicists had grave reservations about the existence of precaution as a norm of custom in international law.⁶⁵ These reservations centred on two principal objections. The first focussed upon the relatively recent arrival of the principle, and questioned whether the requisite State practice had yet formed to permit the crystallisation of a rule of custom. The second objection was directed at the nature of the precautionary principle itself. It was contended that the principle was too vague and amorphous in its nature to give rise to easily definable positive obligations on the part of States, and that this prevented the treatment of the rule as one of custom.

These objections can be met in a number of ways. First, significantly most of the challenges to the legitimacy of precaution as a rule of custom took place prior to UNCED. At that Conference, support for the precautionary principle was almost universal, and it was incorporated into the instruments that were produced there. Further, since UNCED large numbers of States have become parties to, or have expressed their support for, these principles, in resolutions within the UN General

⁶⁵ For example see Bodansky, *supra* note 22, p.5; L. Gündling, "The Status in International Law of the Principle of Precautionary Action" in D. Freestone and T. IJlstra (eds), *The North Sea: Perspectives on Regional Environmental Co-operation* (London: Graham and Trotman, 1990) p.23; also see the criticism of Nollkaemper on the application and nature of precaution: A. Nollkaemper, "The Precautionary Principle in International Environmental Law: What's New Under the Sun?" (1991) 22 *Marine Pollution Bulletin* p.107

Assembly⁶⁶, and through the enactment of domestic legislation. All of these actions suggest that the level of State practice in support of the precautionary principle in international environmental law has probably reached the point where it can be safely assumed to have become a norm of custom.

Secondly, the precautionary principle is amorphous, because it is an aid to decision-making, rather than a directive determining how decisions ought to be made. To this extent, it resembles structures described by Chinkin as "soft law".⁶⁷ While traditionally soft law is described as *de lege ferenda*⁶⁸, it can also encompass obligations which are lacking in some degree of clarity, or which cannot be described with complete precision.⁶⁹ It would be wrong however to conclude that the nature of precaution would preclude it from being regarded as custom. Both Chinkin and Gruchalla-Wesierski separately note that certain types of *treaty*

⁶⁶ See *Military and Paramilitary Activities in and Against Nicaragua (Merits)* ICJ Reports 1986 p.14 at pp.99-103 and pp.106-109. For a recent example of a UNGA Resolution supporting precaution and the implementation of Agenda 21 objectives see Doc. A/RES/S-19/2, 19 September 1997.

⁶⁷ C.M. Chinkin, "The Challenge of Soft Law: Development and Change in International Law" (1989) 38 *International and Comparative Law Quarterly* p.850 at p.851

⁶⁸ Cameron and Abouchar were prepared to accord the precautionary principle this status as an "emerging rule of customary international law" in 1991: Cameron & Abouchar, *supra* note 12, p.20

⁶⁹ For example see T. Gruchalla-Wesierski, "A Framework for Understanding 'Soft Law'" (1984) 30 *McGill Law Journal* p.37 at p.44; M. Virally, "La distinction entre textes internationaux ayant une portée juridique dans les relations mutuelles entre leurs auteurs et textes qui en sont dépourvus" (1983) 60-I *Institut de Droit International Annuaire* p.166 at pp.328-330

obligations may be described as soft law.⁷⁰ Since a precautionary approach can be sought in a treaty, and yet still be more poorly defined than more discreet obligations, it is not logical that it could be excluded from forming a norm of custom.⁷¹ The key to the character of soft law is the creation of expectations that a State will behave in a particular fashion, even in the absence of a legal compulsion, or the exposition of a precise programme of action.⁷² Obviously a lack of clarity in terms of what might be necessary to discharge an international obligation will be creative of difficulties in the event a State is alleged not to have met its duty, but that would be better described as an evidentiary problem, or a difficulty in the application of, rather than the content of the law.

⁷⁰ On this point, Chinkin discusses the views of the obligations under the UNESCO World Heritage Convention discussed by the High Court of Australia in *Commonwealth v Tasmania* (1983) 158 CLR 1: Chinkin, *supra* note 67, pp.863-864; Gruchalla-Wesierski, *supra* note 69, p.44. Johnston also takes this view with respect to the provisions of the Law of the Sea Convention that impose upon States duties to cooperate, conserve or negotiate: D.M. Johnston, "The Driftnetting Problem in the Pacific Ocean: Legal Considerations and Diplomatic Options" (1990) 21 *Ocean Development and International Law* p.5 at p.22

⁷¹ On this point see Bothe and the status of the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space: M. Bothe, "Legal and Non-Legal Norms - A Meaningful Distinction in International Relations" (1980) 11 *Netherlands Yearbook of International Law* p.65 at pp.78-79. cf. Chinkin who suggests that soft law cannot represent custom as it will lack the requisite *opinio juris*, as States will assume they are not bound by soft law "obligations": Chinkin, *supra* note 67, p.857

⁷² Bothe, *supra* note 71, pp.85-86; Gruchalla-Wesierski, *supra* note 69, pp.46-48

The adoption of the principles contained within the Rio Declaration also recently received the implicit support of the International Court of Justice in its judgment in the *Gabcikovo-Nagymaros Project (Hungary v Slovakia)*:

The Court is mindful that, in the field of environmental protection, vigilance and prevention are required on account of the often irreversible character of damage to the environment and of the limitations inherent in the very mechanism of reparation of this type of damage.

Throughout the ages, mankind has, for economic and other reasons, constantly interfered with nature. In the past, this was often done without consideration of the effects upon the environment. Owing to new scientific insights and to a growing awareness of the risks for mankind — for present and future generations — of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development.⁷³

A more pertinent issue to the study at hand is the extent of the duty in terms of living resource management. While the above discussion makes it clear that the precautionary principle does exist within the framework of international environmental law, the extent to which a precautionary approach is required in the management of fisheries is a more specific question, that requires a more detailed

⁷³ *Gabcikovo-Nagymaros Project (Hungary v Slovakia)* ICJ Reports 1997 at para. 140. See also the dissenting judgments of Judge Weeramantry and Judge *ad hoc* Palmer in *Request for an Examination of the Situation in Accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the Nuclear Tests (New Zealand v France) Case* ICJ Reports 1995 p.288 at pp.342-344 (per Judge Weeramantry) and pp.407-409 and p.412 (per Sir Geoffrey Palmer)

examination of the emergence of precaution in living resource management instruments in the post-UNCLOS III world.

The Emergence of the Precautionary Approach in Fisheries Management

Introduction

Precaution as a concept is a relatively recent arrival within the sphere of international environmental law. Its appearance within the fabric of international fisheries management is even more recent, and significantly more contentious. In order to better appreciate the nature, scope and applicability of the concept within the international law pertaining to marine living resource management, it will be necessary to chart its emergence within that law between the present, and the conclusion of UNCLOS III.

Challenges to Traditional Management

As discussed in Chapter 2, the international community took many years to arrive at the legal structure contained in the 1982 Law of the Sea Convention. The negotiations that took place at UNCLOS III, as well as the accumulated international law that preceded it, were the product of much effort on the part of States, and consequently there was no real incentive to revisit them. However, in the years following the signing of the Law of the Sea Convention, a number of new problems began to manifest themselves, and that it was apparent that the

Convention was ill-suited to address these issues.

The problems that arose were twofold. The first was related to a new and destructive fishing practice, that was quickly perceived as environmentally destructive.⁷⁴ Oceanic fishing vessels began to deploy large drift nets in the catching of many species of fish. These nets were vast in size, and were extremely effective in catching not merely targeted species, but anything that crossed their path.⁷⁵ Such nets would be periodically lost at sea, and would continue to drift about the ocean, catching and killing fish and marine mammals, for months or even

⁷⁴ For the background on the placing of the topic of driftnets into discussion at the 1984 FAO World Conference on Fisheries Management see R. Eisenbud, "Problems and Prospects for the Pelagic Driftnet" (1985) 12 *Boston College Environmental Affairs Law Review* p.473 at p.474; see also UN Secretary-General, *Large-Scale Pelagic Driftnet Fishing and its Impact on the Living Marine Resources of the World's Oceans and Seas*, 26 October 1990, UN General Assembly Doc. A/45/663: reprinted in United Nations, *The Law of the Sea: Annual Review of Ocean Affairs - Law and Policy - Main Documents*, (New York: United Nations, 1993) p.242; FAO, *Report of the Expert Consultation on Large-Scale Pelagic Driftnet Fishing*, Rome 2-6 April 1990: reprinted in (1990) 6 *International Organizations and the Law of the Sea Documentary Yearbook* p.192

⁷⁵ See J. Carr & M. Gianni, "High Seas Fisheries, Large-Scale Drift Nets, and the Law of the Sea" in J.M. Van Dyke, D. Zaelke and G.J. Hewison (eds), *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony* (Washington: Island Press, 1993) p.272 at pp.272-277; for a less sympathetic discussion of the damaging characteristics of driftnets see W.T. Burke, M. Freeberg & E.L. Miles, "United Nations Resolutions on Driftnet Fishing: An Unsustainable Precedent for High Seas and Coastal Fisheries Management" (1994) 25 *Ocean Development and International Law* p.127 at pp.128-134

years afterwards (also known as "ghost fishing").⁷⁶

The response of the international community to the problem of driftnets was manifest in a number of ways. Firstly, the UN General Assembly adopted a series of resolutions which were directed towards driftnet fishing. In November 1989, a number of States in both the North and South Pacific⁷⁷ introduced a draft resolution seeking the banning of driftnet fishing by 30 June 1992 "unless or until it is agreed that the unacceptable impact of such a practice can be prevented and that the conservation of the world's resources can be ensured".⁷⁸ Although the sponsors of this draft resolution were ultimately compelled to compromise⁷⁹, the

⁷⁶ See FAO, *Report of the Expert Consultation on Large-Scale Pelagic Driftnet Fishing*, Rome 2-6 April 1990, (1990) 6 *International Organizations and the Law of the Sea Documentary Yearbook* p.192 at pp.192-214; see generally Johnston, *supra* note 70, pp.5-11; J.K. Jenkins, "International Regulation of Driftnet Fishing: The Role of International Environmental Activism and Leverage Diplomacy" (1994) 4 *Indiana International and Comparative Law Review* p.197 at pp.206-208

⁷⁷ As well as Mauritania, Sweden, Zaire and Zambia.

⁷⁸ UN Doc. A/C.2/44/L.30/Rev.1, 15 November 1989; see also Jenkins, *supra* note 76, p.212; K. Sumi, "The International Legal Issues Concerning the Use of Drift Nets, with Special Emphasis on Japanese Practices and Responses" in J.M. Van Dyke, D. Zaelke and G. Hewison (eds), *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony* (Washington: Island Press, 1993) p.292 at pp.292-302; see also V.M. Walsh, "Eliminating Driftnets from the North Pacific Ocean: U.S.-Japanese Cooperation in the International North Pacific Fisheries Commission, 1953-1993" (1998) 29 *Ocean Development and International Law* p.295 at pp.315-316

⁷⁹ The final text of the resolution called for a review of available scientific data to determine the impact of driftnetting on the environment: UN General Assembly Resolution 44/225, 22 December 1989: reprinted in 29 ILM 1555

resolution ultimately adopted still retained a precautionary character. Resolution 44/225 provided that a moratorium on pelagic driftnetting on the high seas should be introduced by 30 June 1992, unless or until a State could demonstrate effective conservation and management measures to prevent the unacceptable impact of such practices.⁸⁰ It is clear that the core of this resolution was the adoption of a precautionary approach to the issue of driftnetting, as the onus of proving that the activity would not cause environmental harm was thrust upon those who were undertaking the activity.⁸¹ The resolution was reaffirmed in 1990.⁸² In 1991, when it was clear that the onus placed upon driftnetting States had not been discharged, the General Assembly resolved to recommend a moratorium⁸³, which was reaffirmed in 1992, 1993 and 1994.⁸⁴ All of the resolutions were adopted by

(1990)

⁸⁰ Paragraph 4(a), UN General Assembly Resolution 44/225. The moratorium date for the South Pacific was set as 1 July 1991, and immediately for the North Pacific: Paragraphs 4(b) and (c)

⁸¹ The precautionary nature of the resolution is noted by Freestone and by Hewison: Freestone, *supra* note 9, p.214; G.J. Hewison, "The Precautionary Approach to Fisheries Management: An Environmental Perspective" (1996) 11 *International Journal of Marine and Coastal Law* p.301 at pp.305-308

⁸² UN General Assembly Resolution 45/197, 21 December 1990

⁸³ UN General Assembly Resolution 46/215, 20 December 1991

⁸⁴ UN General Assembly Resolutions 47/443, 22 December 1992; 48/445, 21 December 1993; 49/436, 19 December, 1994; and 50/25, 5 December 1995. Note also UN General Assembly Resolution 49/118, 19 December 1994 which invited FAO and the Straddling and Highly Migratory Stocks Conference to consider the adverse environmental impacts of bycatch: reprinted (1994) 10 *International Organizations and the Law of the Sea Documentary Yearbook* p.360

consensus.⁸⁵ Further resolutions have followed on an annual basis⁸⁶, as well as annual reports to the Assembly by the Secretary-General on the state of drift-net fishing.⁸⁷

Interestingly, although there was growing international concern over driftnet fishing,

⁸⁵ Burke, Freeberg and Miles are highly critical of the process that led to the various UN General Assembly Resolutions on driftnetting, reaching the conclusion that the Resolutions were not based on scientific data, and the issue was pushed through the unfamiliar forum of the General Assembly for political reasons and to minimise the sort of scrutiny that might have been forthcoming from the FAO: Burke, Freeberg & Miles, *supra* note 75, pp.167-180

⁸⁶ See Un General Assembly Resolutions 50/25, 5 December 1995; 51/36, 9 December 1996; 52/29, 26 November 1997; and 53/33, 24 November 1998.

⁸⁷ See UN Secretary-General, *Environment and Sustainable Development: Sustainable Use and Conservation of the Marine Living Resources of the High Seas - Large-Scale Pelagic Drift-Net Fishing and its Impact on the Living Resources of the World's Oceans and Seas*, 12 October 1995, UN General Assembly Doc. A/50/553: reprinted <gopher://gopher.un.org:70/00/LOS/SGREPORTS/A_50_553.TXT>; UN Secretary-General, *Law of the Sea: Large-Scale Pelagic Drift-Net Fishing and its Impact on the Living Marine Resources of the World's Oceans and Seas; Unauthorized Fishing in Zones of National Jurisdiction and its Impact on the Living Marine Resources of the World's Oceans and Seas; and Fisheries By-catch and Discards and their Impact on the Sustainable Use of the World's Living Marine Resources*, 25 September 1996, UN General Assembly Doc. A/51/404: reprinted <gopher://gopher.un.org:70/00/LOS/SGREPORTS/A_51_404.TXT>; UN Secretary-General, *Oceans and the Law of the Sea: Large-Scale Pelagic Drift-Net Fishing, Unauthorized Fishing in Zones of National Jurisdiction, and Fisheries By-catch and Discards*, 31 October 1997, UN General Assembly Doc. A/52/557: reprinted <http://www.un.org/Depts/los/a_52_557.htm>; UN Secretary-General, *Large-Scale Pelagic Drift-Net Fishing, Unauthorized Fishing in Zones of National Jurisdiction and on the High Seas, Fisheries By-catch and Discards and other Developments*, 8 October 1998, UN General Assembly Doc. A/53/473: reprinted <http://www.un.org/Depts/los/a53_473.htm>

this did not translate to a call for a review or rejection of the provisions of Law of the Sea Convention with respect to high seas fisheries or environmental protection.

The FAO, in a report directed at problems engendered by driftnetting stated:

It was noted that the present International Law of the Sea as reflected in UNCLOS should not be considered deficient but that further analysis and elaboration of certain of its principles was desirable.⁸⁸

This amounts to recognition of that the Convention was not coping with the problem of driftnetting, and also that some fine tuning of the Convention was necessary.⁸⁹

The status of the moratorium has been the subject of some discussion among publicists.⁹⁰ The texts of the resolutions make it clear that the General Assembly

⁸⁸ FAO, *Report of the Expert Consultation on Large-Scale Pelagic Driftnet Fishing*, Rome 2-6 April 1990, (1990) 6 *International Organizations and the Law of the Sea Documentary Yearbook* p.192 at p.212

⁸⁹ Compare this conclusion to the statement by the FAO in 1992, in the context of the use of maximum sustainable yield (MSY) in the Law of the Sea Convention:

Although the MSY concept figures prominently in UNCLOS and has been referred to by the UN Conference on Environment and Development (UNCED), it has become clear that this concept leads also to high instability, that it is not compatible with sustainable development of a multi-species resources [sic] or in an ecosystem context and that it fails to account for socio-economic properties of fisheries.

FAO, *Papers presented at the Technical Consultation on High Seas Fishing*, Rome 7-15 September 1992 (Rome: FAO, 1992) Fisheries Report No.484 Supplement, p.39

⁹⁰ For example see W.T. Burke, "Unregulated High Seas Fishing and Ocean Governance" in J.M. Van Dyke, D. Zaelke and G. Hewison (eds), *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony* (Washington: Island Press, 1993) p.235 at pp.252-265; Hewison,

does not presume to compel States to comply with the moratorium, although some States, most notably the United States, have taken a more expansive view of the ability of coastal States to implement a ban on driftnetting on the high seas.⁹¹ In the South Pacific, where the problem was most prevalent, a regional convention was adopted to explicitly ban the use of driftnets, avoiding any question of illegality in the applicability of any moratorium to convention parties.⁹²

These measures were all significant, as they were addressing an issue not recognised within the Law of the Sea Convention's provisions on fisheries.⁹³ Those articles encouraged States to seek the maximum sustainable yield of a stock, and for States to be able to regulate, on vessels in their EEZ or flying their flag on the high seas, *inter alia* the manner in which that fishing might take place. The Law of the Sea Convention's provisions do not outlaw particular types of fishing that might be

supra note 81, pp.307-308; Johnston, *supra* note 70, pp.19-24; Sumi, *supra* note 78, pp.292-306; Burke, Freeberg & Miles, *supra* note 75, pp.135-180; E. Hey, "Global Fisheries Regulations in the First Half of the 1990s" (1996) 11 *International Journal of Marine and Coastal Law* p.459 at pp.465-467; M.R. Islam, "Coastal States' Control over Driftnet Fishing in the South Pacific and the Freedom of Fishing on the High Seas" (1989) 17 *Melanesian Law Journal* p.81

⁹¹ On this point see Burke, *supra* note 90, pp.256-261

⁹² *Convention on the Prohibition of Fishing with Long Driftnets in the South Pacific*, done at Wellington on 24 November 1989, entered into force 17 May 1991: reprinted 29 ILM 1454 (1990). The initial approach in the South Pacific did involve the use of a non-binding declaration: *Declaration of Tarawa*, adopted at Tarawa on 11 July 1989: reprinted in (1989) 14 *Law of the Sea Bulletin* p.24

⁹³ See the discussions of these provisions in Chapter 2.

regarded as environmentally damaging, or address the issue of damage caused to other non-commercially fished species by environmentally damaging practices.

The significance of the measures is underscored by their precautionary character. Although Burke, Freeberg and Miles are highly critical of the final resolutions, arguing that there was not a balanced or even thoughtful consideration of the scientific evidence⁹⁴, it is clear that the onus of proving driftnetting was not environmentally damaging was thrust onto fishing States. These States were not able to conclusively demonstrate that the method of fishing employed could be done in such a way to minimise harm to a satisfactory level, and accordingly a resolution seeking a moratorium on driftnetting resulted.⁹⁵ Such a process is clearly in close accord with that advocated by general principles of international environmental law to give effect to the precautionary principle.

⁹⁴ Burke, Freeberg & Miles, *supra* note 75, pp.127-180 esp. at p.137

⁹⁵ It is interesting to note that although Burke, Freeberg and Miles are scathing in their criticism of the driftnet resolutions they state:

What of comments made regarding the impending ecological disaster that continued operation of the driftnet fisheries posed for the Central North Pacific? Perhaps they are true. Equally likely, however, is that the driftnet fisheries had no significant impact on ecosystem functioning.

Burke, Freeberg & Miles, *supra* note 75, pp.164-165. Given the ramifications of an ecological disaster, the application of a precautionary approach would compel the closure of the fishery in the absence of evidence the disaster was at least unlikely to occur. This is what UN General Assembly Resolutions attempted to do.

The second problem was slower in forming, but was a direct consequence of the Law of the Sea Convention. The Convention confirmed what to that time had been increasingly occurring in State practice, the enclosure of ocean space in an EEZ or exclusive fishing zone. By the 1980s, the bulk of the world's fishing grounds had been subjected to national jurisdiction.⁹⁶ States that were able, began to increase the fishing capacity of their domestic fishing fleets in order to better exploit what were now waters subject to national jurisdiction.⁹⁷ As these fleets came on line, foreign fishing vessels were gradually excluded, and were forced into other waters.⁹⁸ When compounded to a substantial overcapitalisation in the world's

⁹⁶ See FAO Committee on Fisheries, *UNCED and its Implications for Fisheries*, FAO Doc. COFL/93/Inf/8, January 1993: reprinted (1993) 9 *International Organizations and the Law of the Sea Documentary Yearbook* p.665 at pp.674-675; Para. 17.69, Agenda 21; for an analysis of trends in maritime claims up to the mid-1980s see R.W. Smith, *Exclusive Economic Zone Claims: An Analysis and Primary Documents*, (Dordrecht: Martinus Nijhoff, 1986) pp.3-58

⁹⁷ This phenomenon is described by Elisabeth Mann Borgese and Krishan Saigal by the delightfully apt phrase "the industrialization of hunting and gathering" and stress the unviability of situation: E.M. Borgese and K. Saigal, "Managerial Implications of Sustainable Development in the Ocean" (1996) 12 *Ocean Yearbook* p.1 at p.10

⁹⁸ See generally FAO, *World Review of Highly Migratory Species and Straddling Stocks*, (Rome: FAO, 1994) Fisheries Technical Paper No.337; see also O. Thébaud, "Transboundary Marine Fisheries Management. Recent Developments and Elements of Analysis" (1997) 21 *Marine Policy* p.237 at pp.238-239. There is also some likelihood that the increase in driftnet fishing is also related to the enclosure of many of the fisheries in the Pacific. Johnston notes that from 1984 there was an increase in the scale of the driftnet fishery, and that the principal driftnetting States were Japan, South Korea and Taiwan. Vessels of these States had been excluded from EEZ areas where they previously fished: Johnston, *supra* note 70, pp.12-13

fishing fleet, and a growing over-capacity in harvesting power of that fleet, a serious problem was developing.⁹⁹

By the end of the 1980s, high seas fishing had increased substantially¹⁰⁰, and many stocks which had previously not been under pressure were subjected to uncontrolled fishing, on a massive scale.¹⁰¹ The consequence of this movement was overfishing, and in many cases, collapse. As the crisis developed, a number of States began to call for a re-evaluation of the environmental parameters used in fisheries management, and to re-examine the question of high seas fisheries and straddling stocks.¹⁰²

⁹⁹ For example, in the 1992 the FAO noted there was an annual shortfall in fisheries revenue in 1989 of US\$48 billion FAO, and that between 1980 and 1989 there was an increase in the gross registered tonnage of the world's fishing fleet of 5.7 million tonnes or 29%: *Papers presented at the Technical Consultation on High Seas Fishing*, Rome 7-15 September 1992 (Rome: FAO, 1992) Fisheries Report No.484 Supplement, pp.1-2

¹⁰⁰ The FAO noted that prior to the widespread extension of maritime jurisdiction, fish catches taken beyond 200 nautical miles were estimated to be 5% of total marine production. In 1994, this had climbed to 8-10% principally attributable to increased effort by DWFNs: see FAO, *Some High Seas Fisheries Aspects relating to Straddling Fish Stocks and Highly Migratory Fish Stocks*, (Rome: FAO, 1994) Fisheries Circular No.879 p.1; FAO, *Papers presented at the Technical Consultation on High Seas Fishing*, Rome 7-15 September 1992 (Rome: FAO, 1992) Fisheries Report No.484 Supplement, p.21

¹⁰¹ See the discussion of the Bering Sea pollock fishery, where this pattern was closely followed see Chapter 4 at p.335

¹⁰² For example, concern was expressed by Canada, and supported by fifteen other States, over the increasing pressure of high seas fishing on straddling stocks in September 1990: FAO, *Report of the Conference on the Conservation and Management of the Living Resources of the High Seas*, St

The increasing pressure on certain fisheries arising out of the national enclosure of previously high seas fisheries was tackled in a variety of ways in a number of distinct fora. Each forum will be considered separately, in order to examine how they approached the question of the management of fisheries both within and beyond national jurisdiction, and to observe when, and in what fashion, the precautionary principle began to be a factor. The three fora, the UNCED Conference, the work of FAO and the UN Conference on Highly Migratory and Straddling Fish Stocks, do overlap to some extent, but for convenience each will be considered separately.

UNCED

Background

As already noted above, the United Nations Conference on Environment and Development held in Rio de Janeiro in June 1992 marked the widespread adoption of the precautionary principle by States into international environmental law. UNCED generated a number of instruments, both binding and non-binding, dealing

John's 5-7 September 1990, (FAO: Rome, 1991) Annex II, pp.1-3; see also M. Hayashi, "United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks: An Analysis of the 1993 Sessions" (1994) 11 *Ocean Yearbook* p.20 at pp.26-27; F. Orrego Vicuña, "Towards an Effective Management of High Seas Fisheries and the Settlement of Pending Issues of the Law of the Sea: The View of Developing Countries Ten Years After the Signature of the Law of the Sea Convention" in E.L. Miles and T. Treves (eds), *The Law of the Sea: New Worlds, New Discoveries*, (Honolulu: Law of the Sea Institute, 1993) p.415 at p.423; see also United Nations, *The Law of the Sea: Annual Review of Ocean Affairs - Law and Policy: Main Documents*, (New York: United Nations, 1993) pp.211-212

with a wide variety of subjects.¹⁰³ A significant portion of time and effort at UNCED was devoted to ocean issues, and within that, marine living resource management.

Yet it is evident from the outcomes of UNCED that the acceptance of precaution in the context of ocean pollution did not extend to fisheries management. A number of States, including States that had championed the use of a precautionary approach to marine pollution, were uneasy over the application of such an approach to the regulation of fishing. This unease can be attributed to a number of factors.

Firstly, a number of States were of the view that the impact of precaution on fishing would be akin to the imposition of a moratorium. Such a viewpoint was fostered by the UN General Assembly Resolutions on driftnetting¹⁰⁴, where the failure to obtain data vindicating the practice led to resolutions demanding an end to large-scale pelagic driftnetting altogether.¹⁰⁵ Essentially, the absence of clear criteria on how precaution ought to be applied allowed States to assume that a range of responses were possible. Potentially fisheries would only be open to

¹⁰³ The formal outcomes of UNCED include the Rio Declaration on Environment and Development, Agenda 21, the Convention on Biological Diversity and the Climate Change Convention, as well as expanding international consideration of a range of environmental issues, most notably in forestry.

¹⁰⁴ See above at p.206

¹⁰⁵ Hewison, *supra* note 81, pp.307-308

exploitation after costly, possibly uneconomic, and complex scientific investigations and data collection had taken place. This was repugnant to national fishing industries in a number of DWFNs, and consequently these States were not willing to have precaution associated with fisheries management.¹⁰⁶

Secondly, there was a strong perception that the Law of the Sea Convention was the primary policy instrument with respect to ocean affairs, including the utilization and conservation of living resources.¹⁰⁷ Newer developments within international law had to be couched in such terms as to ensure "full harmony and complementarity".¹⁰⁸ While the provisions of the Law of the Sea Convention

¹⁰⁶ See Hewison, *supra* note 81, p.307; Burke, *supra* note 90, p.258

¹⁰⁷ On this point see the discussion by Nandan: S.N. Nandan, "The Efforts Undertaken by the United Nations to Ensure Universality of the Convention" in E.L. Miles and T. Treves (eds), *The Law of the Sea: New Worlds, New Discoveries*, (Honolulu: Law of the Sea Institute, 1993) p.349; see also I.K. Kolossovski, "Prospects for Universality of the United Nations Law of the Sea Convention" in E.L. Miles and T. Treves (eds), *The Law of the Sea: New Worlds, New Discoveries*, (Honolulu: Law of the Sea Institute, 1993) p.431. It is notable that a submission to the Preparatory Committee of UNCED, made by a number of States who were ultimately to be sympathetically disposed to the use of precaution in marine living resource management, contained references to the promotion of optimum utilization, closely reflecting the Law of the Sea Convention. The document contained no reference to precaution: *Conservation and Management of Living Resources of the High Seas: Principles and Measures for an Effective Regime Based on the UN Convention on the Law of the Sea*, 15 August 1991, Doc. No.: A/CONF.151/PC/ WG.II/L.16: reprinted in (1991) 7 *International Organizations and the Law of the Sea Documentary Yearbook* p.454 at pp.454-456

¹⁰⁸ For example, this was evident during the first preparatory meeting for UNCED held in Nairobi between 6 and 31 August 1990: Joint Preliminary Contribution of the UNOALOS, UNEP, ECA, ECLAC, ESCAP, FAO,

concerning environmental protection were drafted to be consistent with international standards set in other instruments, the same was not true of living resource exploitation, where the criteria for management were clearly spelled out. The Law of the Sea Convention contains no reference to precaution, largely because international attention directed at precaution post-dated UNCLOS III.¹⁰⁹ The Convention was far better able to cope with the emergence of precaution in the context of environmental protection, as much of the early development of the principle was in the context of pollution control, and the Convention's approach to principles of environmental protection was to leave the setting of standards to the international community in other fora. In contrast, little early consideration of precaution was directed at living resource management, and the principles by which exploitation of marine resources was to take place were incorporated into the Law of the Sea Convention itself.

Finally, the focus of the Rio Conference was not fishing, nor even the law of the sea, but rather the broad sweep of international environmental law. The ambitious agenda for UNCED did not permit the kind of extended negotiations that had seen

UNESCO, IOC, WMO, IMO and IAEA, *Protection of the Oceans and All Kinds of Seas, Including Enclosed and Semi-Enclosed Seas, and of Coastal Areas and the Protection, Rational Use and Development of their Living Resources*, 20 June 1990: reprinted (1990) 6 *International Organizations and the Law of the Sea Documentary Yearbook* p.149 at pp.149-151

¹⁰⁹ Elisabeth Mann Borgese takes the view that precaution is "a step forward from the Convention": E.M. Borgese, *Ocean Governance and the United Nations*, (Halifax: Centre for Foreign Policy Studies, 1995) p.53

UNCLOS III stretch out for years, and consequently the primary effort of the Conference was to seek a consensus on issues. Given the reluctance and opposition of a number of States to the use of a precautionary approach to fisheries management, no consensus on this subject was likely to emerge, and this reflected in UNCED's outcomes.¹¹⁰ In the context of marine living resource management, the effort was to fill what were perceived to be gaps in international law, not to reconsider the appropriateness of existing provisions, including management principles.¹¹¹

Agenda 21

The Rio Conference produced a number of outcomes, but the bulk of these were not directed at oceans matters. The Rio Declaration on Environment and Development, already noted above, was a statement of general principles, applicable to the environment and human activity as a whole. The Convention on Biological Diversity too had a much wider scope than marine living resources, and although it

¹¹⁰ The decision taken at Rio to hold a conference on straddling fish stocks and high migratory fish stocks is consistent with this approach: see B. Cicin-Sain, "Earth Summit Implementation: Progress Since Rio" (1996) 20 *Marine Policy* p.123 at pp.127-128

¹¹¹ Preparatory Committee for the United Nations Conference on Environment and Development, *Protection of Oceans, All Kinds of Seas including Enclosed and Semi-Enclosed Seas, Coastal Areas and the Protection, Rational Use and Development of their Living Resources: Report of the Secretary-General of the Conference*, 30 January 1991, Doc No.: A/CONF.151/PC/30 + Corr.1: reprinted (1991) 7 *International Organizations and the Law of the Sea Documentary Yearbook* p.302 at pp.308-309

is germane in the consideration of ecosystem management, it is only tangentially relevant to a discussion focused on the precautionary principle.¹¹² As such the principal instrument produced at UNCED with implications for marine living resource management and precaution was Agenda 21.

Agenda 21 was intended to be a comprehensive plan of action devoted towards sustainable development for the twenty-first Century. As an instrument, it was not intended to be binding upon States, but rather to establish a declaratory template for States to follow in planning, development and legislative structures.¹¹³

Within Agenda 21, Chapter 17 was devoted to the use and protection of the oceans, and has seven distinct programme areas.¹¹⁴ Each programme notes why

¹¹² That is not to say that the Biodiversity Convention is not relevant to marine living resource management, or more particularly a precautionary approach. However given its content, the Biodiversity Convention is more extensively discussed in the context of ecosystem management: see below at p.296

¹¹³ Hanson notes the non-binding nature of Agenda 21, and the fact is not linked to the two conventions that were agreed at UNCED are a significant weakness: A.J. Hanson, "Sustainable Development and the Oceans: Navigating our Way from Rio" in S-Y. Hong, E.L. Miles & Choon-ho Park (eds), *The Role of the Oceans in the 21st Century*, (Honolulu: Law of the Sea Institute, 1995) p.636 at p.640

¹¹⁴ The seven programme areas in Chapter 17 of Agenda 21 are:

- A. Integrated management and sustainable development of coastal areas, including exclusive economic zones.
- B. Marine environmental protection.
- C. Sustainable use and conservation of marine living resources of the high seas.
- D. Sustainable use and conservation of marine living resources under national jurisdiction.

action in its field is required, and what the objectives of that action ought to be. It then specifies what activities should be implemented by States to achieve the objectives, and the means of implementation that should be available to do so. Programmes C and D provide for marine living resource management, outside and within areas subject to national jurisdiction.¹¹⁵

The two programmes represent general measures that States could implement, in order to improve the management of fisheries subject to national jurisdiction, and beyond the EEZ. Each programme is organised so as to indicate why remedial action is necessary, and what the objectives of such action should be. More detail is then provided by listing the activities to be undertaken, and how these are to be implemented. The key element in both programmes is the commitment of States to conservation and sustainable use of marine living resources.¹¹⁶ To achieve this,

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- E. Addressing critical uncertainties for the management of marine environment and climate change.
 - F. Strengthening international, including regional, cooperation and coordination.
 - G. Sustainable development of islands.

¹¹⁵ Scully notes that it was a necessary compromise to separate marine living resource issues into those subject to national jurisdiction and those beyond national jurisdiction. The compromise meant that conservation obligations were expressed in virtually identical terms in both programmes: T. Scully, "Report on UNCED" in E.L. Miles and T. Treves (eds), *The Law of the Sea: New Worlds, New Discoveries*, (Honolulu: Law of the Sea Institute, 1993) p.97 at p.99

¹¹⁶ Paras. 17.46 and 17.74, Agenda 21

both programmes seek the restoration of depleted populations¹¹⁷, the development and use of selected fishing gear designed to limit waste and bycatch¹¹⁸, the end of environmentally destructive practices¹¹⁹, and the enhancement of their research and data collection capabilities.¹²⁰

As no consensus on a precautionary approach to fisheries management was present at UNCED, the two marine living resource management programmes contain no reference whatsoever to precaution. Sustainability of the resources, the promotion of research, and efforts to assist the recovery of depleted stocks are all referred to, but these are coupled with the objective to:

Maintain or restore populations of marine species at levels that can produce the maximum sustainable yield as qualified by relevant environmental and economic factors, taking into consideration relationships among species.¹²¹

This amounts to a continuing affirmation of the management principles of the Law of the Sea Convention, although they have been annexed to some of the broader terminology of UNCED. This is confirmed in the high seas fishing programme,

¹¹⁷ Paras. 17.46(a) and (e), and 17.74(c) and (e), Agenda 21

¹¹⁸ Paras. 17.46(c), 17.50 and 17.74(d), Agenda 21

¹¹⁹ Dynamiting and poisoning receive special mention: Paras. 17.53 and 17.84, Agenda 21

¹²⁰ Paras. 17.46(g), 17.48, 17.56, 17.64, 17.65, 17.79(f), 19.92, 17.94 and 17.95; see generally E. Meltzer, "Global Overview of Straddling and Highly Migratory Fish Stocks: The Nonsustainable Nature of High Seas Fisheries" (1994) 25 *Ocean Development and International Law* p.255 at p.323

¹²¹ Paras. 17.46(b) [Programme C] and 17.74(c) [Programme D], Agenda 21

where States are expressly urged to manage fisheries in a manner consistent with the provisions of the Law of the Sea Convention, and to negotiate appropriate international organizations to assist in the task.¹²²

While the two programmes dealing with marine living resource management in Agenda 21 are both directed at the same form of activity, there are important differences between them. Programme C, which deals with high seas fisheries, places far greater stress on the importance of international cooperation in fisheries management.¹²³ Within Programme D, which deals with fisheries under national jurisdiction, the references to international cooperation are principally directed at technical and financial cooperation¹²⁴ and capacity-building¹²⁵, rather than substantive management obligations. The exceptions are in the context of the management of marine mammals, where States are urged to cooperate with the IWC and other appropriate bodies¹²⁶, and for those States with waters forming part of enclosed or semi-enclosed seas.¹²⁷ This division perhaps reflects the continuing

¹²² Para. 17.49, Agenda 21

¹²³ Paras. 17.49, 17.56-17.62, and 17.67, Agenda 21

¹²⁴ Para. 17.87, Agenda 21

¹²⁵ Para. 17.95, Agenda 21

¹²⁶ Para. 17.89, Agenda 21

¹²⁷ Para. 17.88, Agenda 21

emphasis of States on jurisdiction.¹²⁸

The most significant outcome of Agenda 21, and of UNCED generally, in the context of marine living resource management, was the recommendation that a conference be held into the issue of straddling and highly migratory fish stocks.¹²⁹ That conference, and the convention which it produced will be discussed below, however it is more appropriate to next consider the work of the United Nations Food and Agriculture Organization in the period following the conclusion of the Law of the Sea Convention.

FAO

1984 World Fisheries Strategy

Following the conclusion of UNCLOS III, the FAO occupied a central position in coordinating international discussion with regard to the management of fisheries. As noted in Chapter 2, FAO assisted in the operation of a number of international fisheries bodies, and acted as a conduit for discourse between other international fisheries organizations, as well as being the principal clearing house for the

¹²⁸ In this regard, there is much greater emphasis on the development of fisheries under national jurisdiction for the benefit of particular groups, notably artisanal fishers, indigenous people and small scale fishworkers: Paras. 17.81(a) and (b) and 17.82, Agenda 21

¹²⁹ Paras. 17.49(e) and 17.78, Agenda 21

dissemination of fisheries data in the world.¹³⁰ Consequently, fisheries management policy documents produced by FAO are significant, as they do not merely give an insight into the attitude of member States, but they also have a normative influence on State behaviour.

In June 1984, it convened the World Conference on Fisheries Management and Development in Rome. The Conference was attended by delegations from 147 States, 14 UN agencies, 24 intergovernmental agencies and 29 NGOs¹³¹, with the objective of promoting the development of world fisheries under the new framework put in place by the Law of the Sea Convention, and to agree on a recommendatory strategy to achieve this aim.¹³²

The Conference ran over 10 days and its direction was heavily oriented towards development, particularly increasing the fishing capacity of developing States.¹³³ This emphasis is borne out by the Strategy for Fisheries Management and

¹³⁰ See generally S.M. Garcia, "Ocean Fisheries Management: The FAO Programme" in P. Fabbri, *Ocean Management in Global Change*, (London: Elsevier Applied Science, 1992) p.381

¹³¹ FAO, *Report of the FAO World Conference on Fisheries Management and Development*, Rome 27 June - 6 July 1984 (Rome: FAO, 1984) p.1

¹³² See the statement of the Conference Chairman: FAO, *Report of the FAO World Conference on Fisheries Management and Development*, Rome 27 June - 6 July 1984 (Rome: FAO, 1984) Appendix B

¹³³ J. Madeley, "World Fisheries Crisis Looms" (1985) 9 *Marine Policy* p.77 at pp.77-78

Development ultimately adopted at the Conference.¹³⁴ The Strategy occupied a central place in the FAO's coordination of fisheries management around the world, and therefore some discussion of its content is worthwhile.

The Strategy is a sizeable document, and was adopted by resolution at the 1984 Conference. It consists of 26 articles, divided into eight subject-oriented parts, and accompanied by a series of five related Programmes of Action designed to assist States to implement the Strategy. Within the Strategy's eight parts, seven were directed at matters designed to facilitate fishery capacity-building, improve the international trade in fish products, and allow for technology transfer to permit greater fishing activity by developing States.¹³⁵ The Programmes of Action are uniformly directed at regional capacity-building, facilitating trade and provision of funding to developing States.¹³⁶

¹³⁴ *Strategy for Fisheries Management and Development*, adopted at Rome on 6 July 1984: reprinted FAO, *Report of the FAO World Conference on Fisheries Management and Development*, Rome 27 June - 6 July 1984 (Rome: FAO, 1984) p.11

¹³⁵ The subject areas within the Strategy oriented towards development were: *I. The Contribution of Fisheries to National Economic, Social and Nutritional Goals; II. Improved National Self-Reliance in Fisheries Management and Development; IV. The Special Role and Needs of Small-Scale Fisheries and Rural Fishing and Fish-Farming Communities; V. International Trade in Fish and Fishery Products; VI. Investment in Fisheries Management and Development; VII. Economic and Technical Cooperation in Fisheries Management and Development.* The remaining section was entitled: *III. Principles and Practices for the Rational Management and Optimum Use of Fish Resources.*

¹³⁶ Programmes of Action I-V, *Strategy for Fisheries Management and Development*; see also Madeley, *supra* note 133, pp.77-78

In contrast only one section of the Strategy could be properly said to address environmental concerns and the operation of fisheries management systems. Within this section some 29 principles and guidelines directed at the improvement of fisheries management were set down. Among the principles provided States were urged to improve research facilities, since meaningful harvest quotas had to be based on evaluations of the stock harvested.¹³⁷ With improved research facilities more accurate evaluations could be made, diminishing the risk of depletion through overharvesting. Similarly, the Strategy urged governments to be proactive in the introduction of management systems, and to actively canvass the benefits of such systems with all stakeholders.¹³⁸ Measures introduced by States were to take into account the costs of enforcement and implementation, and measures designed to secure compliance should be both practical and cost-effective, making use of technological advances where appropriate. States exploiting common stocks were also extolled to act cooperatively in the management of such stocks.¹³⁹

These measures are by and large unremarkable, and are entirely consistent with the provisions of the Law of the Sea Convention. Much of the same language used in the Convention is also used in the Strategy, including "optimum utilization" as the appropriate goal for any managed stock, and the call for cooperation in the

¹³⁷ Article 14(i), Strategy for Fisheries Management and Development

¹³⁸ Articles 14(iii), (v), (vi) and (vii), Strategy for Fisheries Management and Development

¹³⁹ Articles 23-26, Strategy for Fisheries Management and Development

management of common stocks. The Strategy amounts to an affirmation of the principles agreed at UNCLOS, as well as an attempt by the FAO and developing States to assist such States with moves to develop the huge maritime zones so recently confirmed as under their jurisdiction. What is perhaps notable in the Strategy is no substantial consideration of the consequences of overharvesting, or questioning of the appropriateness of the optimum sustainable yield as the goal of living marine resource management. Where stock depletion is mentioned, it is treated almost as a byproduct of poor research.¹⁴⁰

Change in Direction: Declaration of Cancun

The international concerns over driftnetting, which had been raised with the FAO's Committee on Fisheries (COFI) by Greenpeace as early as 1985¹⁴¹, and greater pressure on high seas fisheries gradually began to impact upon FAO policy by the end of the 1980s. COFI considered the issue of high seas fisheries at its annual meeting in April 1991.¹⁴² At that meeting it was determined that, in cooperation

¹⁴⁰ The same emphasis on development is also evident in the "follow-up" to the Strategy made by COFI at its meeting in 1985. The only environmental matter discussed at the 1985 meeting was a brief item concerning the entanglement of marine animals in fishing nets. While this item was to ultimately assume far greater importance in the context of driftnets in the near future, in 1985 development issues remained paramount: see FAO, *Report of the Sixteenth Session of the Committee on Fisheries*, Rome 22-26 April 1985, (Rome: FAO, 1985) pp.1-13

¹⁴¹ See Eisenbud, *supra* note 74, p.474

¹⁴² FAO, *Report of the 19th Session of the Committee on Fisheries*, Rome 8-12 April 1991 (Rome: FAO, 1991) Fisheries Report No.459

with the UN Office of Ocean Affairs and the Law of the Sea (OALOS)¹⁴³, it would stage another international conference to augment the Strategy with a "code for responsible fishing".¹⁴⁴ Titled the International Conference on Responsible Fishing, it was held in Cancun in May 1992. This conference was held just prior to UNCED, and the issues raised at the Cancun conference were taken to Rio for discussion there.¹⁴⁵

The principal outcome of the conference was the Declaration of Cancun.¹⁴⁶ The Declaration itself was divided into three parts. The first part contained a Preamble, which noted there were serious problems facing world fisheries, and that various steps were already in train to try to improve cooperation and sustainability. The second part of the Declaration contained 20 measures which States were urged to implement, covering a range of matters directly and indirectly affecting the regulation of high seas fisheries. The third part contained six measures which

¹⁴³ Now the Division of Ocean Affairs and the Law of the Sea (DOALOS).

¹⁴⁴ See FAO, *Report of the 19th Session of the Committee on Fisheries*, Rome 8-12 April 1991, (Rome: FAO, 1991) FAO Fisheries Report No.459, p.14. The proposal for holding the conference was formally endorsed by the membership of the FAO in November 1991: FAO, *Report of the Conference of the FAO*, Rome 9-27 November 1991, para.239

¹⁴⁵ *Infra* note 147; see also Edeson, who stresses the importance of the Declaration as the forerunner of the Code of Conduct for Responsible Fisheries: W.R. Edeson, "The Code of Conduct for Responsible Fisheries" (1996) 11 *International Journal of Marine and Coastal Law* p.233 at p.233

¹⁴⁶ The Declaration is reproduced in FAO, *Technical Papers presented at the Technical Consultation on High Seas Fishing*, Rome 7-15 September 1992, (Rome: FAO, 1992) Fisheries Report No.484 Supplement, p.70

States pledged to initiate, and consequently were binding rather than declaratory in nature, although in content they chiefly sought to encourage further cooperative discussion of the issue of high seas fisheries.¹⁴⁷

In terms of its content, the second portion of the Declaration is of the most interest. Firstly, there is no reference to the precautionary principle, or the adoption of a precautionary approach in any of the 20 measures. This reflects the distrust of some portions of the international community in the applicability of precaution to fishery management. However, it is important to note that the absence of precaution does not indicate a continuation of the overwhelming emphasis on development found in the Strategy.

Instead of development, the touchstone of the Declaration is sustainability, and the mechanisms necessary to achieve it.¹⁴⁸ The provisions of the Declaration do

¹⁴⁷ Specifically, the measures call on FAO to draft an International Code for Responsible Fishing; to recommend the UN proclaim a Decade of Responsible Fishing; to promote international cooperation towards the achievement of rational and sustainable management and conservation of high seas living resources; call on States to resolve differences over a proposal at UNCED for a conference on high seas fisheries; seek agreement on the improvement of trade in fish products under the Uruguay Round of the GATT; and to have the Declaration relayed to the UN Secretary-General, the Director-General of the FAO, and the Secretary-General of UNCED: Provisions I-VI, Declaration of Cancun

¹⁴⁸ Principles 1 and 2, Declaration of Cancun; see also J.A. de Yturriaga, *The International Regime of Fisheries: From UNCLOS 1982 to the Presential Sea* (The Hague: Martinus Nijhoff, 1997) p.184

emphasise the importance of data collection and scientific research into fisheries¹⁴⁹, and the need to target particular species with specialised gear, to minimise bycatch levels.¹⁵⁰ There are also provisions linking the quality of the marine environment with the viability of marine living resource exploitation.¹⁵¹ In addition, the Declaration recognised the need for States to balance the freedom of fishing on the high seas with conservation¹⁵², and to take effective action to combat the reflagging of vessels to avoid domestic regulation of high seas fishing.¹⁵³ States are also encouraged to act cooperatively in research¹⁵⁴, and in combating illicit fishing¹⁵⁵, but implementation of all the principles is to be in a manner consistent with the exercise of sovereign rights, jurisdiction and duties of coastal States.¹⁵⁶

The reluctance of States to adopt a precautionary approach in 1992 was evident not merely in its absence from the Declaration of Cancun, or its limited impact on the

¹⁴⁹ Principles 3 and 4, Declaration of Cancun

¹⁵⁰ Principles 5 and 6, Declaration of Cancun

¹⁵¹ Principles 7 and 8, Declaration of Cancun

¹⁵² Principle 12, Declaration of Cancun

¹⁵³ Principle 13, Declaration of Cancun

¹⁵⁴ Principles 16 and 17, Declaration of Cancun

¹⁵⁵ Principle 18, Declaration of Cancun

¹⁵⁶ Principle 20, Declaration of Cancun

provisions directed at marine living resource exploitation in Agenda 21.¹⁵⁷ In September 1992, shortly after the conclusion of UNCED, the FAO held a Technical Consultation on High Seas Fisheries designed to initiate the process towards the development of a code for responsible fishing, as indicated in the Declaration of Cancun.¹⁵⁸ The Consultation participants¹⁵⁹ noted that a cautious approach to precaution was appropriate, and that the harvesting of living resources was fundamentally different to dumping toxic waste and industrial poisoning.¹⁶⁰

However, it would be wrong to suggest that States were entirely dismissive of precaution. It was noted that fisheries ought to be managed in a cautious way, although the introduction of precautionary management did "not necessarily mean a moratorium on fishing".¹⁶¹ Essentially the participants proposed to examine the practical implications of a precautionary approach to avoid "unnecessarily restrictive practices" and "the relevant precautionary measures and practices currently applied

¹⁵⁷ See above at p.221

¹⁵⁸ Article I, Declaration of Cancun. See also FAO Committee on Fisheries, *Conservation and Rational Utilization of Living Marine Resources with Special Reference to Responsible Fishing*, FAO Doc. COFI/93/5, January 1993: reprinted in (1993) 9 *International Organizations and the Law of the Sea Documentary Yearbook* p.621 at pp.622-623

¹⁵⁹ 70 States and the European Community, as well as several intergovernmental organizations and NGOs participated as observers.

¹⁶⁰ FAO, *Report of the Technical Consultation on High Seas Fishing*, Rome 7-15 September 1992 (Rome: FAO, 1992) Fisheries Report No.484, p.9; see also Hewison, *supra* note 81, p.310

¹⁶¹ *Ibid.*, p.8

in relation to living resources should be identified and, if valid, be reflected as appropriate in the code of conduct".¹⁶² These statements demonstrate that although precaution had been placed on the agenda by UNCED, there was still deep scepticism that it had any place in the management of fisheries.¹⁶³

High Seas Fisheries Compliance Agreement

By the end of 1992, other fora than the FAO had, or were about to consider the merits of a precautionary approach to fisheries management. Within the FAO work continued towards the drafting of a code for responsible fishing. The magnitude of concern over unregulated high seas fishing, and a perceived increase in the problem of the reflagging of vessels to avoid flag State regulation¹⁶⁴, led to the speedy

¹⁶² *Ibid.*, pp.8-9

¹⁶³ This is confirmed by the statement, drawn from the papers presented at the Consultation:

In the absence of agreement on acceptable levels of uncertainty and impacts, on which the principle does not provide any guidance, it would be of little practical value and unlikely to gain general acceptance.

FAO, *Papers presented at the Technical Consultation on High Seas Fishing*, Rome 7-15 September 1992 (Rome: FAO, 1992) Fisheries Report No.484 Supplement, p.42; that this was the position in 1992 is also confirmed by Garcia: Garcia, *supra* note 8, p.8

¹⁶⁴ The problem had also been specifically identified at UNCED:

States should take effective action consistent with international law, to deter reflagging of vessels by their nationals as a means of avoiding compliance with applicable conservation and management rules for fishing activities on the high seas.

Para. 17.52, Agenda 21

adoption within FAO¹⁶⁵ of the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas.¹⁶⁶

The Compliance Agreement's objective is to combat vessels avoiding flag State domestic regulation of their high seas fishing activities by reflagging. Since the Law of the Sea Convention does not permit other States apart from the flag State to interfere with a vessel on the high seas except in very specific circumstances¹⁶⁷, there was a concern that the efficacy of high seas fishing arrangements were being undermined.¹⁶⁸ Recalcitrant vessel owners were avoiding conservation measures agreed to by their flag State within international fisheries arrangements, by changing the vessel's flag to that of a State that was not a participant in the

¹⁶⁵ The Compliance Agreement was adopted at the FAO meeting by Resolution 15/93 in November 1993.

¹⁶⁶ *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*, done at Rome on 24 November 1993, yet to enter into force: reprinted (1993) 9 *International Organizations and the Law of the Sea Documentary Yearbook* p.698 [hereafter referred to as the Compliance Agreement]

¹⁶⁷ See discussion in Chapter 2 at p.163

¹⁶⁸ United States Senate Committee on Foreign Relations, *Report on the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*, 103rd Congress 2nd Session, Executive Report 103-32, pp.1-5; see also E.H. Buck, "Agreements to Promote Fishery Conservation Management in International Waters", *Congressional Research Service Report*, 96-56, 5 January 1996: reproduced at <<http://www.cnie.org/nle/mar-8.html>>

arrangements.¹⁶⁹

The Compliance Agreement tackles the problem of reflagging by having member States keep records of fishing vessels¹⁷⁰, and to provide that only vessels authorised to do so be permitted to fish on the high seas.¹⁷¹ If a vessel fails to comply with fisheries measures, its authorisation would be withdrawn.¹⁷² Should such a vessel then seek to adopt the flag of another State party to avoid regulation, it would not receive an authorisation for high seas fishing.¹⁷³ Registers and data concerning vessels fishing on the high seas would be provided by States to the FAO, which would act as a conduit for all such information.¹⁷⁴

While in theory the Compliance Agreement addresses the problem of reflagging, in practice it can be no more effective than the international high seas fishing

¹⁶⁹ G. Moore, "The Food and Agriculture Organisation of the United Nations Compliance Agreement" (1995) 10 *International Journal of Marine and Coastal Law* p.412 at pp.414-415

¹⁷⁰ The Compliance Agreement can apply to vessels of less than 24 metres in length if the State party indicates it: Article II, Compliance Agreement

¹⁷¹ P. Birnie, "Are Twentieth-Century Marine Conservation Conventions Adaptable to Twenty-First Century Goals and Principles?: Part 1" (1997) 12 *International Journal of Marine and Coastal Law* p.307 at p.317; Moore, *supra* note 169, p.412

¹⁷² Article III(8), Compliance Agreement

¹⁷³ Articles III(4) and III(5), Compliance Agreement

¹⁷⁴ Article VI, Compliance Agreement

arrangements it is designed to support. Obviously, to work effectively, the Compliance Agreement should have a large number of State parties, making it difficult for recalcitrant vessels to find a flag which they can use to avoid fisheries regulations. In practice, there are currently only 11 parties¹⁷⁵, and none of these include the States that have been generous in the granting of their flag to vessels.¹⁷⁶ Moore notes that efforts to negotiate an agreement that provided criteria specifying the genuine link between a State and vessels authorised to fly its flag quickly broke down, thus explaining the use of the authorisation system in the Compliance Agreement.¹⁷⁷

Further, although the Compliance Agreement encourages States to cooperate in the provision of data¹⁷⁸, and in investigating breaches of fisheries regulation¹⁷⁹, enforcement remains solely within the control of the flag State.¹⁸⁰ Although each

¹⁷⁵ These are Argentina, Canada, the European Union, Georgia, Madagascar, Myanmar, Namibia, Norway, St Kitts and Nevis, Sweden, and the United States.

¹⁷⁶ Such States include Panama, Belize and Vanuatu.

¹⁷⁷ Moore, *supra* note 169, p.413

¹⁷⁸ The provision of data on high seas fishing operations to the FAO is the among the more positive outcomes of the Compliance Agreement, as obtaining reliable data concerning such fishing has been problematic: Moore, *supra* note 169, p.416

¹⁷⁹ Article V, Compliance Agreement

¹⁸⁰ Only where a fishing vessel is *voluntarily* in a port of a State party that is not the flag State does the Compliance Agreement provide for other State enforcement. Even in such a situation, the port State is obliged to notify the

State party does promise that it has the capacity to meet its obligations under the Agreement¹⁸¹, it means that for vessels far from home waters, there may be little the flag State can do to enforce its domestic law on the high seas, at least until, or if, the vessel returns to its home State.¹⁸²

The Emergence of Precaution

As the Compliance Agreement addresses the issue of reflagging, it does not refer to the principles by which such fishing might take place. Accordingly, there is no mention anywhere within the Agreement of precaution. That this is so is not surprising, as at the time the Agreement was concluded, there was still no consensus among FAO member States as to whether a precautionary approach to fisheries management was desirable.

In 1994, the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks requested that the FAO prepare a paper to consider the

flag State and cooperate on investigatory action: Article V(2), Compliance Agreement

¹⁸¹ Article III(3), Compliance Agreement provides:

No Party shall authorize any fishing vessel entitled to fly its flag to be used for fishing on the high seas unless the Party is satisfied that it is able, taking into account the links that exist between it and the fishing vessel concerned, to exercise effectively its responsibilities under this Agreement in respect of that fishing vessel.

¹⁸² This is particularly true of States like Namibia, St Kitts and Nevis and Georgia, which have little or no domestic capacity to monitor vessels flying their flag fishing on the high seas. See also Chapter 2 at p.164

ramifications of the adoption of a precautionary approach in fisheries management.¹⁸³ As will be noted below, a consensus on precaution was emerging at the Conference, and this in turn is reflected in the paper prepared by the Director of the FAO's Fishery Resources and Environment Division, Dr Serge Garcia.¹⁸⁴

The paper prepared by the FAO outlines the implications of the adoption of precaution in fisheries management.¹⁸⁵ Garcia noted that a precautionary approach in fisheries management would be part of States' efforts towards the achievement of sustainable development, and stressed that precaution as a concept was not new. His paper listed twelve measures that States would be obliged to adopt to effectively implement a precautionary approach. These included the improvement of information systems, and the use of best scientific evidence available¹⁸⁶, adoption of a broader range of reference points, management benchmarks, and "action-triggering thresholds", agreement on acceptable levels of

¹⁸³ See Resolution A/48/479, para.17(c), 30 July 1993; see also Garcia, *supra* note 8, p.3 and p.ii

¹⁸⁴ Garcia, *supra* note 8. The document was submitted to the Conference's third session in New York on 14 March 1994 as Doc. A/CONF.164/ INF/8; see also D. Symes, "The Ecosystem Approach: A Challenge for Co-management", *Wadden Sea Newsletter*, <<http://cwss.www.de/WSNL97-2/97-2-03Symes.html>>

¹⁸⁵ Hewison notes that the paper "was one of the first to seriously consider the limits of the precautionary approach to fishing": Hewison, *supra* note 81, p.311

¹⁸⁶ This would include investing in emergency research while interim measures to avoid irreversible damage are taken: Garcia, *supra* note 8, p.15

impact and appropriate management criteria *before* the advent of a crisis, as well as pre-agreement on an appropriate course of action in a crisis, and integration of coastal area management with that of fisheries. The paper also indicates that decision-making procedures should be improved, made more accountable and transparent, and there be more consultations with other non-fishing interests. There are also calls for monitoring and enforcement capacities to be improved, and to encourage the use of research and environmental impact assessments in the development of new projects.¹⁸⁷

Clearly some of these measures are not derived from a precautionary approach. Improving decision-making procedures, and introducing wider consultation and management transparency may be sound suggestions, but they are not contingent upon the utilization of a precautionary approach. Garcia recognises as much, noting that not all the measures are necessary all of the time, although even this concession implies that each measure might be needed periodically. However, they are consistent with calls for greater dialogue between stakeholders in Agenda 21.¹⁸⁸ Similarly, measures to improve enforcement capacity will improve compliance with any fisheries management system, regardless of its theoretical basis, although Garcia

¹⁸⁷ Garcia, *supra* note 8, pp.16-17. This is consistent with para. 17.79, Agenda 21

¹⁸⁸ See para. 17.81 and 17.82, Agenda 21. Transparency of decision-making is also promoted in Article 6.13, Code of Conduct for Responsible Fisheries, and Article 13, SS/HMS Agreement

does not make it clear that the success of management based on precaution will require a higher level of enforcement capacity than that traditionally employed in MSY-based systems.¹⁸⁹

Through 1995, the FAO's official position on precaution went from implicit support, to being expressly incorporated into FAO policy. This can be illustrated by the various outcomes of international meetings coordinated by the FAO during that year. In March 1995, a meeting of fisheries ministers in Rome adopted the Rome Consensus on World Fisheries.¹⁹⁰ The Consensus urged States to, *inter alia*, fish sustainably, review fishing capacity with a view to reduction if necessary, reduce bycatch and strengthen support of fisheries organizations and their conservation measures.¹⁹¹ The Consensus does not refer directly to precaution, although it is implicit in States being urged to "keep under review the effectiveness of conservation and management measures for ensuring the long term sustainability of fisheries and aquatic ecosystems".¹⁹² This can be contrasted to the Kyoto

¹⁸⁹ This raises the question whether the effectiveness of a particular marine living resource management system can be attributed to its underlying management principles, or to a failure to implement the regime, whether through the lack of sufficient resources or effective cooperation between the parties. This issue will be addressed in some detail in Chapter 6.

¹⁹⁰ *Rome Consensus on World Fisheries*, adopted at Rome on 15 March 1995: reproduced at <<http://www.fao.org/WAICENT/FAOINFO/FISHERY/agreem/consensu/conc.html>>. Some 63 Ministers and representatives from a further 70 States adopted the Consensus.

¹⁹¹ Para. 10, *Rome Consensus on World Fisheries*

¹⁹² Para. 10, *Rome Consensus on World Fisheries*

Declaration adopted by the 95 States participating in the International Conference on the Sustainable Contribution of Fisheries to Food Security in December 1995.¹⁹³ The Kyoto Declaration not only expressly supported the adoption of precaution¹⁹⁴, but also referred to the maintenance of ecosystems, and of inter- and intra-generational equity in access to fish resources.¹⁹⁵

The Code of Conduct for Responsible Fisheries

The Code for Responsible Fisheries, for which the process of negotiation had begun with the Declaration of Cancun, was finally adopted by the parties to the FAO on 31 October 1995.¹⁹⁶ Although expressed to be a code, it was always intended by the FAO to be a non-binding instrument¹⁹⁷, and was designed to operate in a manner in conformity with existing international law, as reflected in the Law of the

¹⁹³ *Kyoto Declaration and Plan of Action on the Sustainable Contribution of Fisheries to Food Security*, adopted in Kyoto on 9 December 1995: reprinted (1997) 12 *International Journal of Marine and Coastal Law* p.99

¹⁹⁴ Principle 10, Kyoto Declaration

¹⁹⁵ Principle 9, Kyoto Declaration

¹⁹⁶ *Code of Conduct for Responsible Fisheries*, adopted at Rome on 31 October 1995: reprinted in (1995) 11 *International Organizations and the Law of the Sea Documentary Yearbook* p.700. A short narrative on the origins and elaboration of the Code is provided in Annex 1, Code of Conduct for Responsible Fisheries.

¹⁹⁷ Article 1, Code of Conduct for Responsible Fisheries. Although the Code is non-binding, it is worth noting Article 4.2, which states that the FAO will monitor the application and implementation of the Code, and report to the Committee on Fisheries.

Sea Convention.¹⁹⁸ However, there are suggestions that while the Code will not derogate from the Law of the Sea Convention, other elements of international law will be relevant. The Code is to be interpreted and applied:

- a) in a manner consistent with the relevant provisions of the Agreement for the Implementation of the United Nations Convention on Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks;
- b) in accordance with other applicable rules of international law, including the respective obligations of States pursuant to international agreements to which they are party; and
- c) in the light of the 1992 Declaration of Cancun, the 1992 Rio Declaration on the Environment and Development, and Agenda 21 adopted by the United Nations Conference on Environment and Development (UNCED), in particular Chapter 17 of Agenda 21, and other relevant declarations and international instruments.¹⁹⁹

This is suggestive that while the Law of the Sea Convention is still perceived as the principal international instrument with respect to ocean affairs, that other elements of international law, particularly international environmental law, have become directly relevant to fisheries management.²⁰⁰ By necessity this includes a precautionary approach, as such an approach is expressly approved of in instrument in paragraphs (a) and (c) above.

The Code itself is a substantial document, with some twelve articles, which are in

¹⁹⁸ The Code is expressed to be without prejudice to the "rights, jurisdiction and duties of States under international law as reflected in the Convention. Article 3(1), Code of Conduct for Responsible Fisheries

¹⁹⁹ Article 3(2), Code of Conduct for Responsible Fisheries

²⁰⁰ Edeson refers to this as "a hierarchy of provisions": Edeson, *supra* note 145, pp.235-236

turn divided into numerous sub-articles. Its objectives are set out in Article 2, and essentially these are to provide States with a frame of reference for responsible fisheries, and to establish guidelines on how to structure their fishery legislation, and institutional structures.²⁰¹

These objectives are significant in the identification of customary international law in the long term. Although not binding, the Code clearly is intended to act as a template for State practice.²⁰² In time, as the level of State practice surrounding the Code accretes, States may no longer use the Code as a voluntary guide, but feel compelled by the volume of State practice to adopt its principles. Once this threshold is reached, it can be argued that the Code has attained the status of custom, as it will have generated both a large volume of consistent State practice, and the requisite *opinio juris*. This would mean although the Code is not intended to bind States, it is certainly *de lege ferenda*, and in time may have crystallised custom.²⁰³

The core of the Code is its exposition of general principles, contained in Article 6. There are some 19 in all, dealing with such matters as ensuring safe and

²⁰¹ Article 2, Code of Conduct for Responsible Fisheries

²⁰² Edeson notes that the Code is "intended to be based on international law": Edeson, *supra* note 145, p.235; see also de Yturriaga, *supra* note 148, pp.185-186

²⁰³ See the discussion of soft law above at p.201

environmentally friendly fishing gear is used²⁰⁴, that critical habitats for marine ecosystems receive special protection²⁰⁵, that the world trade in fish products be conducted in a manner consistent with the World Trade Agreement²⁰⁶, and encouragement of States to assist in the development of aquaculture²⁰⁷, education²⁰⁸ and special assistance of artisanal fishers.²⁰⁹ Of most relevance to the present study are those provisions directed at fisheries management, wherein States are encouraged promote the quality and sustainability of fishery resources for present and future generations.²¹⁰

The general principles of the Code also strongly endorse a precautionary approach.

Article 6.5 provides:

States and subregional and regional fisheries management organizations should apply a precautionary approach widely to conservation, management and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment, taking into account the best scientific evidence available. The absence of adequate scientific information should not be used as a reason for postponing or failing to take measures to conserve target species, associated or dependent species and non-target

²⁰⁴ Article 6.6, Code of Conduct for Responsible Fisheries. This includes ensuring that working conditions of those working in the industry are safe and healthy: Article 6.17, Code of Conduct for Responsible Fisheries

²⁰⁵ Article 6.8, Code of Conduct for Responsible Fisheries

²⁰⁶ Article 6.14, Code of Conduct for Responsible Fisheries

²⁰⁷ Article 6.19, Code of Conduct for Responsible Fisheries

²⁰⁸ Article 6.16, Code of Conduct for Responsible Fisheries

²⁰⁹ Article 6.18, Code of Conduct for Responsible Fisheries

²¹⁰ Article 6.2, Code of Conduct for Responsible Fisheries

species and their environment.²¹¹

As is evident, this is a substantial advance over earlier statements and instruments produced under the auspices of the FAO. It also clearly overturns the view that precaution as a concept should be limited to the sphere of marine pollution, and had no place in the management of living resources.

Having endorsed precaution at a general level, the Code then seeks to apply the principles to more specific fields²¹², including the management of fisheries. In this, the Code provides guidance in particular fields including the gathering of data and the supply of management advice, the framing of management measures, how management measures and structures are to be implemented, and the role of financial institutions. There are also general guidelines for management, and an exposition on the overall objectives of a management system.

The sections dealing with general management measures, and the objectives of management have an over-arching theme of sustainable development of fishery resources.²¹³ Cooperation between States²¹⁴, the work of fisheries

²¹¹ Article 6.5, Code of Conduct for Responsible Fisheries

²¹² The articles following Article 6 of the Code are entitled Fisheries Management (Article 7); Fishing Operations (Article 8); Integration of Fishing into Coastal Area Management (Article 10); Post-Harvest Practices and Trade (Article 11); Fisheries Research (Article 12)

²¹³ Article 7.1.1, Code of Conduct for Responsible Fisheries; see also Hey, *supra* note 90, p.483

organizations²¹⁵, the institution of effective enforcement²¹⁶, monitoring and surveillance²¹⁷, and the elimination of excess fishing capacity²¹⁸ should all be directed at this overall goal. In terms of management objectives, the same is true with recognition that the "long-term sustainable use of fisheries resources is the *overriding objective* of conservation and management".²¹⁹ Yet even referring to sustainable use as an "overriding" objective is not to be viewed as a rejection of MSY as reflected in the Law of the Sea Convention. Article 7.2.1 notes that the measures adopted should be designed to achieve MSY, as qualified by relevant factors, which is in exactly the same terms as Article 61(3) of the Law of the Sea Convention.

Article 7.5 of the Code deals in detail with the adoption of a precautionary approach in fisheries management.²²⁰ Unlike references to precaution elsewhere, both within the Code and without, there is a significant effort to try to provide

²¹⁴ Articles 7.1.3, 7.1.4 and 7.1.5, Code of Conduct for Responsible Fisheries

²¹⁵ Articles 7.1.3, 7.1.4, 7.1.5, 7.1.6, 7.1.9, and 7.1.10, Code of Conduct for Responsible Fisheries

²¹⁶ Article 7.7, Code of Conduct for Responsible Fisheries

²¹⁷ Article 7.7.3, Code of Conduct for Responsible Fisheries

²¹⁸ Articles 7.1.8 and 7.4.3, Code of Conduct for Responsible Fisheries

²¹⁹ Article 7.2.1, Code of Conduct for Responsible Fisheries (my emphasis)

²²⁰ Article 7.5.1 amounts to a restatement of Article 6.5, with only minor differences between the two texts: Article 7.5.1, Code of Conduct for Responsible Fisheries

detail on how a precautionary approach can be implemented. The necessity of spelling out the mechanics of a precautionary approach in this context is obvious, especially given the initial suspicions of some fishing States that precaution equalled moratorium.²²¹ Firstly, States are urged to take into account uncertainties inherent in the calculation of fishery management targets. These include uncertainties in such matters as stock size and productivity, in selected stock reference points, levels and distribution of fishing mortality and the impact of fishing activities on non-target and associated species.²²² These uncertainties are to be considered together with environmental and socio-economic conditions.²²³

The implication of a precautionary approach requires the interested parties, be they States or international regional fisheries organizations, to calculate, on the best scientific information available, two types of reference points of specific stock

²²¹ See above at p.215

²²² Article 7.5.2, Code of Conduct for Responsible Fisheries provides:
In implementing the precautionary approach, States should take into account, *inter alia*, uncertainties relating to size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality and the impact of fishing activities, including discards, on non-target and associated or dependent species as well as environmental and socio-economic conditions.

²²³ Reference to climatic conditions as a relevant factor in this context was removed from the 1994 draft of the Code. This can be in part explained by the addition of Article 7.5.5, which had no equivalent in the 1994 draft Code: Committee on Fisheries, *Written Comments on Principles of the Code of Conduct for Responsible Fisheries Dealing with High Seas Issues*, FAO Doc. No.: COFI/95/Inf.5, December 1994: reprinted (1995) 11 *International Organizations and the Law of the Sea Documentary Yearbook* p.755 at p.764

fisheries.²²⁴ States must determine stock specific target reference points, and to detail what appropriate action ought to be taken if these reference points are exceeded. Stock specific limit reference points should also be calculated, and what action should be taken in the eventuality that they are exceeded. In keeping with a precautionary approach, in the case of limit reference points, measures ought to be introduced to ensure that these are not exceeded.²²⁵

The critical portions of this provision are the references to plans of action in the event that limits are exceeded. The principal difficulty some States had with the application of precaution to fisheries management was the possibility that fisheries could be closed in circumstances where they were of the view they ought not be terminated. The institution of definite and pre-determined courses of action

²²⁴ The use of two types of reference point reflects the concern of Japan that a broad statement directed a reference points generally was apt to lead to confusion: see Committee on Fisheries, *Written Comments on Principles of the Code of Conduct for Responsible Fisheries Dealing with High Seas Issues*, FAO Doc. No.: COFI/95/Inf.5, December 1994: reprinted in (1995) 11 *International Organizations and the Law of the Sea Documentary Yearbook* p.755 at p.765

²²⁵ Article 7.5.3, Code of Conduct for Responsible Fisheries provides:
States and subregional or regional fisheries management organizations and arrangements should, on the basis of the best scientific evidence available, *inter alia*, determine:

- a) stock specific target reference points, and, at the same time, the action to be taken if they are exceeded; and
- b) stock specific limit reference points and, at the same time, the action to be taken if they are exceeded; when a limit reference point is approached, measures should be taken to ensure that it will not be exceeded.

provided these States with a sufficient level of certainty in the application of the precautionary principle. The circumstances of when a fishery might be closed could be the subject of agreement, and States could work to ensure fishing by vessels under their jurisdiction would not create the circumstances where closure would be an option.

Special consideration is given to new or exploratory fisheries. Recognising that such fisheries typically have limited data from which accurate estimates of appropriate levels can be made, the Code recommends that States "as soon as possible" adopt cautious conservation and management measures, and these remain in force until sufficient data has been collected to provide meaningful advice on long term sustainability.²²⁶ States are urged to utilise measures that permit the gradual development of such fisheries.²²⁷

²²⁶ This is consistent with the approach used within the Commission on the Conservation for Antarctic Marine Living Resources for new or exploratory fisheries: see Chapter 5 at p.436

²²⁷ Article 7.5.4, Code of Conduct for responsible Fisheries provides:
In the case of new or exploratory fisheries, States should adopt as soon as possible cautious conservation and management measures, including, *inter alia*, catch limits and effort limits. Such measures should remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment should be implemented. The latter measures should, if appropriate, allow for the gradual development of the fisheries.

In addition, the Code attempts to deal with the fluctuations in stocks as a result of natural phenomena. States are extolled to take emergency action to ensure that naturally-generated adverse impacts upon fisheries are not exacerbated by fishing activity. Similarly, States should be prepared to institute emergency measures on a temporary basis where warranted by scientific evidence.²²⁸

The Code has now assumed a central position in the FAO's efforts to coordinate and advise on world fisheries. It has devoted considerable energy to the promotion of the Code among member States, and to assist in the Code's application, has prepared a series of explanatory memoranda. These are designed to assist States overcome some of the practical difficulties of implementation.²²⁹

²²⁸ Article 7.5.5, Code of Conduct for Responsible Fisheries provides:

If a natural phenomenon has a significant adverse impact on the status of aquatic living resources, States should adopt conservation and management measures on an emergency basis to ensure that fishing activity does not exacerbate such adverse impact. States should also adopt such measures on an emergency basis where fishing activity presents a serious threat to the sustainability of such resources. Measures taken on an emergency basis should be temporary and should be based on the best scientific evidence available.

²²⁹ Technical guidelines have been prepared on the following subjects:

1. Fishing operations
2. Precautionary Approach to Capture Fisheries and Species Introductions
3. Integration of Fisheries into Coastal Area Management
4. Fisheries Management
5. Aquaculture Development
6. Inland Fisheries

The guidelines are reprinted at <<http://www.fao.org/WAICENT/FAOINFO/FISHERY/agreem/codecond.codecon.html>>

UN Conference on Straddling and Highly Migratory Fish Stocks

Background

The UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks convened in April 1993 and ran over six sessions held at the UN Headquarters in New York until August 1995. The Conference was initiated pursuant to General Assembly Resolution 47/192²³⁰, itself based on a consensus reached at UNCED.²³¹ Some 148 States²³², with numerous UN and other international agencies including international fisheries bodies, and numerous NGOs as observers, spent over 2 years attempting to negotiate an additional agreement on straddling and highly migratory fish stocks.²³³

While the objective of the Conference was to negotiate an agreement to clarify

²³⁰ UN General Assembly Resolution 47/192, 22 December 1992; see also UN General Assembly Resolutions 48/194, 21 December 1993 and 49/121, 19 December 1994 which reaffirmed international commitment to the Conference

²³¹ Para. 17.49(e), Agenda 21 urged States to convene an intergovernmental conference "with a view to promoting effective implementation of the provisions of the United Nations Convention on the Law of the Sea on straddling fish stocks and highly migratory fish stocks".

²³² The European Community was permitted to participate in the Conference, but did not have a right to vote: Rule 2, Conference Rules of Procedure, Doc. A/Conf.164/6: reprinted in (1996) 12 *Ocean Yearbook* p.466

²³³ A list of the participants, as well as additional background information, is contained in the Secretary-General's Report to the UN General Assembly: *United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks - Report of the Secretary-General*, UN Doc No.: A/50/550: reprinted (1995) 11 *International Organizations and the Law of the Sea Documentary Yearbook* p.349

rights and responsibilities with respect to highly migratory species and straddling stocks, an important issue quickly raised was what management principles ought to be required of States harvesting such stocks, and whether a precautionary approach to management ought to be included. The wholesale adoption of a precautionary approach was viewed with caution by some States, and outright opposition by others.

The opposition at UNCED to the adoption of a precautionary approach was maintained during the initial sessions of the Straddling Fish Stocks Conference. The reticence towards the concept essentially stemmed from a concern that a precautionary approach might lead to the closure of fisheries where data was lacking.²³⁴ There was also concern voiced by a number of States that precaution had developed out of international environmental law, and that it ought not to be translated automatically to marine living resource management.²³⁵ Such views were championed by States with strong fisheries interests, such as Poland, the Philippines, Korea, Japan and the European Community, while support for the inclusion of the precautionary principle drew support from a diverse collection of

²³⁴ de Fontaubert notes that a number of DWFNs equate precaution with a moratorium on high seas fisheries: C. de Fontaubert, "The United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks: Another Step in the Implementation of the Law of the Sea Convention" (1996) 12 *Ocean Yearbook* p.82 at p.84

²³⁵ For example see Doc. A/CONF.164/INF.2, 15 July 1993, sponsored by the European Community

States, including the United States, Australia, Papua New Guinea, Russia, Trinidad, Norway and Indonesia²³⁶. The adoption of a precautionary approach was also incorporated into the "five-power" draft convention submitted to the Conference by Argentina, Canada, New Zealand, Iceland and Chile.²³⁷

In such an environment, it was obvious that a negotiated solution would have to be found, and efforts towards a compromise led to the formation of a working group to consider the implications of precautionary approaches to the management of high seas and straddling fish stocks.²³⁸ To assist the working group, the Conference resolved to seek an information paper from the FAO²³⁹, and by March 1994, the working group was charged with the preparation of a draft text for the practical implementation of a precautionary approach.²⁴⁰

²³⁶ See the summary of views expressed at the Conference at the July 1993 session in <<http://www.mbnet.mb.ca/linkages/vol07/0705004e.html>>. Similar views were also expressed by a number of small South Pacific States: Hayashi, *supra* note 102, p.37

²³⁷ The application of appropriate precautionary measures was required in Article 5 of the five-power draft convention: UN Doc. A/Conf.164/L.11/Rev.1, 28 July 1993

²³⁸ See the statement made by the Conference Chairman at the conclusion of the second session of the Conference: UN Doc. A/Conf.164/15, 10 August 1993: reprinted (1993) 9 *International Organizations and the Law of the Sea Documentary Yearbook* p.201 at p.202. An additional working group on reference points for fisheries management was also established.

²³⁹ See discussion above at p.237; see also Garcia, *supra* note 8

²⁴⁰ See the statement made by the Conference Chairman at the opening of the third session of the Conference: UN Doc. A/Conf.164/17, 16 March 1994: reprinted (1994) 10 *International Organizations and the Law of the Sea*

While the inclusion of precaution in the 1994 draft text of the straddling stocks and highly migratory stocks agreement indicate a general acceptance of the concept of precaution²⁴¹, the mechanics of what that might entail were by no means agreed. This is evident in the differences between the 1994 draft convention and the final agreement concluded in 1995. However to effectively discuss these differences it is perhaps preferable to consider the Straddling Stocks and Highly Migratory Stocks Agreement itself.

Precaution and the Straddling and Highly Migratory Stocks Agreement

The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and High Migratory Fish Stocks was effectively concluded in August 1995, after five substantive sessions and negotiations stretching back over the preceding 2 years.²⁴² As its name suggests, the Agreement was designed to augment the Law of the Sea Convention, by indicating the scope of some of the rights and duties in respect of fish stocks on the

Documentary Yearbook p.306 at p.307. The report of the working group on the precautionary approach in fisheries management was produced during the 3rd session of the Conference: see Doc. No.: A/CONF.164/WP.1; see also Meltzer, *supra* note 120, p.326

²⁴¹ This accords with the view of Hewison, *supra* note 81, p.311

²⁴² The Conference had a total of six sessions, however the first session dealt only with procedural questions and lasted only 4 days. After adopting a text for the Agreement in August 1995, the sixth session reconvened in December 1995 so the Agreement could be placed open for signature.

high seas. The Agreement is a sizeable document, comprising some 50 articles and two annexes. Given the focus of this chapter is the precautionary approach, the portion of the Agreement dealing with precaution shall be considered first, with brief consideration of the remainder following.

The general principles under which the SS/HMS Agreement is to operate stress sustainability and a precautionary approach, as well as the mechanisms necessary to provide for such an approach.²⁴³ Of the twelve elements listed as the Agreement's objectives, three directly relate to improving data sharing and collection²⁴⁴, two relate to maintaining or assessing the impact of activities on the associated ecosystem²⁴⁵, two are directed at sustainability²⁴⁶, and one calls for the application of a precautionary approach.²⁴⁷

Article 6 of the Agreement provides for the application of a precautionary approach to straddling and highly migratory fish stocks. Significantly, the Agreement requires that Article 6 be applied to such stocks even in waters subject to national

²⁴³ Article 5, SS/HMS Agreement

²⁴⁴ Articles 5(b), 5(j) and 5(k), SS/HMS Agreement

²⁴⁵ Articles 5(d) and 5(e), SS/HMS Agreement. In addition Article 5(g), SS/HMS Agreement calls for the protection of biodiversity in the marine environment.

²⁴⁶ Articles 5(a) and 5(h), SS/HMS Agreement

²⁴⁷ Article 5(c) provides States shall:
apply the precautionary approach in accordance with Article 6;

jurisdiction, whereas virtually all other provisions only have application to the high seas.²⁴⁸ This is recognition that the implementation of such an approach could be substantially undermined by States if they chose to utilise an alternative approach within waters subject to their jurisdiction.

Consideration of precaution in the Agreement commences with a general duty, and progressively becomes more specific. States are obliged under the Agreement to give effect to a precautionary approach in the conservation, management and exploitation of straddling and highly migratory fish stocks.²⁴⁹ The scope of the duty is then clarified, noting that the level of available information determines the appropriate degree of caution to be exercised by the State.²⁵⁰ Linked to this is a requirement that States improve and enhance their data handling and research capabilities, as well as their techniques for dealing with risk and uncertainty.²⁵¹

²⁴⁸ Article 7 is the other exception: Article 2(1), SS/HMS Agreement

²⁴⁹ Article 6(1) SS/HMS Agreement provides:
States shall apply a precautionary approach widely to conservation, management and exploitation of straddling fish stocks and highly migratory fish stocks in order to protect the living marine resources and preserve the marine environment.

²⁵⁰ Article 6(2), SS/HMS Agreement provides:
States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation or management measures.

²⁵¹ Article 6(3)(a), SS/HMS Agreement; on this point see E. deLone, "Improving the Management of Atlantic Tuna: The Duty to Strengthen the ICCAT in the Light of the 1995 Straddling Stocks Agreement" (1998) 6 *New York University Environmental Law Journal* p.656 at pp.664-667

The juxtaposition of these elements indicates something of the tension between the States who were initially for or against the inclusion of precaution. On the one hand, caution is directly linked to science, while on the other science and dealing with risk and uncertainty are to be improved, presumably to minimise the impact of precautionary decision-making.²⁵²

The practical implications of utilising a precautionary approach are faced in Article 6(3) and its associated annex.²⁵³ This is accomplished through the use of stock-specific reference points, and action plans in the event of the points being exceeded.²⁵⁴ The advantage of such a system is States participating in a fishery agree on their behaviour in the event of a decline in the stock, rather than negotiating in the face of the decline. While potentially no more effective, pre-agreed plans can be implemented with much greater rapidity, preventing additional

²⁵² Notably, the juxtaposition of these requirements did not change between the 1994 draft and the final text: cf. Articles 2 and 3(a), Draft Agreement and Articles 2 and 3(a), SS/HMS Agreement

²⁵³ Hey notes that the substantial guidance provided within the Agreement to reaching its goals is its "most significant contribution": Hey, *supra* note 90, p.472

²⁵⁴ Article 6(3)(b), SS/HMS Agreement provides States shall:
 ...apply the guidelines set out in Annex II and determine, on the basis of the best scientific evidence available, stock-specific reference points and the action to be taken if they are exceeded;
 See generally H. Gherari, "L'Accord du 4 Août 1995 sur les Stocks Chevauchants et les Stocks de Poissons Grands Migrateurs" (1996) 100 *Revue Générale de Droit International Public* p.367 at pp.373-374; M. Christopher, "Toward a Rational Harvest: The United Nations Agreement on Straddling Fish Stocks and Highly Migratory Species" (1996) 5 *Minnesota Journal of Global Trade* p.357 at pp.368-369

damage while negotiations drag on.

Two types of precautionary reference point are to be used: conservation reference points²⁵⁵, and management reference points.²⁵⁶ The former category ought to be set within safe biological limits designed to produce the MSY, while the latter are fixed with reference to other management objectives.²⁵⁷ Management strategies should be designed to ensure that risk of exceeding conservation reference points is very low.²⁵⁸ Reference points are intended to be stock-specific, taking into account a wide range of factors.²⁵⁹ If in the course of harvesting a species, a precautionary reference point, is approached, there ought to be a series of pre-agreed conservation and management measures to implement.²⁶⁰ In the case of a conservation reference point, the action must be directed at stock recovery. Ideally strategic management of stock should mean that management reference points are

²⁵⁵ Also referred to as limit reference points: Para.2, Annex II, SS/HMS Agreement

²⁵⁶ Also referred to as target reference points.

²⁵⁷ Para.2, Annex II, SS/HMS Agreement

²⁵⁸ Para.5, Annex II, SS/HMS Agreement

²⁵⁹ These include, *inter alia*, "reproductive capacity, the resilience of the stock and the characteristics of the fisheries exploiting the stock, as well as other sources of mortality and major sources of uncertainty": Para.3, Annex II, SS/HMS Agreement

²⁶⁰ Para.4, Annex II, SS/HMS Agreement

not exceeded on average.²⁶¹ In the absence of data, provisional reference points can be set, established by analogy to other similar and better-known stocks, although States are obliged to enhance monitoring to rectify the deficiencies in data.²⁶²

The use of reference points for single species does not preclude the application of a precautionary approach to a wider field of application. Article 6(5) notes that where the status of non-target, associated or dependent species is of concern, States ought to take steps to institute enhanced monitoring of these species, and review the efficacy of conservation and management measures in the light of the results of that monitoring.²⁶³ In addition, special measures for new or exploratory fisheries²⁶⁴, and arising out of the adverse impact of natural phenomenon are also

²⁶¹ Para.5, Annex II, SS/HMS Agreement

²⁶² Para.6, Annex II, SS/HMS Agreement

²⁶³ Article 6(5) SS/HMS Agreement provides:

Where the status of target stocks or non-target or associated or dependent species is of concern, States shall subject such stocks and species to enhanced monitoring in order to review their status and the efficacy of conservation and management measures. They shall revise those measures in the light of new information.

²⁶⁴ Article 6(6) SS/HMS Agreement provides:

For new and exploratory fisheries, States shall adopt as soon as possible cautious conservation and management measures, including, *inter alia*, catch limits and effort limits. Such measures shall remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment shall be implemented. The latter measures shall, if appropriate, allow for the gradual development of the fisheries.

authorised.²⁶⁵

Much of Article 6 is substantially the same as paragraph 7.5 of the Code of Conduct for Responsible Fisheries, with the general statement calling on States to adopt a precautionary approach²⁶⁶, the impact of natural phenomenon²⁶⁷ and those in relation to new and exploratory fisheries being virtually identical.²⁶⁸ The derivation of these provisions can be seen in the 1994 draft text, with the exception of that directed at natural phenomenon, which was added to the draft.²⁶⁹

²⁶⁵ Article 6(7) SS/HMS Agreement provides:

If a natural phenomenon has a significant adverse impact on the status of straddling fish stocks or highly migratory fish stocks, States shall adopt conservation and management measures on an emergency basis to ensure that fishing activity does not exacerbate such adverse impact. States shall also adopt such measures on an emergency basis where fishing activities present a serious threat to the sustainability of such stocks. Measures taken on an emergency basis shall be temporary and shall be based on the best scientific evidence available.

See generally de Yturriaga, *supra* note 148, p.205

²⁶⁶ cf. Para. 7.5.1, Code of Conduct for Responsible Fisheries and Article 6(1), SS/HMS Agreement

²⁶⁷ cf. Para. 7.5.5, Code of Conduct for Responsible Fisheries and Article 6(7), SS/HMS Agreement

²⁶⁸ cf. Para. 7.5.4, Code of Conduct for Responsible Fisheries and Article 6(6), SS/HMS Agreement

²⁶⁹ See Article 6, Draft SS/HMS Agreement, UN Doc. No.: A/CONF.164/22.22, 14 October 1994: reprinted (1994) 10 *International Organizations and the Law of the Sea Documentary Yearbook* p.311. The similarity of the provisions has been remarked upon by Davies and Redgwell: P.G.G. Davies and C. Redgwell, "The International Legal Regulation of Straddling Fish Stocks" (1996) 67 *British Yearbook of International Law* p.199 at p.260

Similarly, both the Code and the Agreement advocate the use of reference points and the establishment of agreed courses of action in the event of reference points being exceeded.²⁷⁰

Interestingly, both in the setting of reference points, and in the Agreement's objectives, there are references to MSY. Although MSY is retained as the target for fisheries²⁷¹, in much the same fashion as in the Law of the Sea Convention²⁷², there is recognition that it should be sought as the ideal. It is used as the limit passed which no fishery is permitted to go, and yet in terms of data gathering and assessment, it is the target for which managers are to aim.²⁷³ In this way, the Agreement preserves the link to the Law of the Sea Convention, yet through the application of precaution, is able to move forward to a more progressive and practical situation.²⁷⁴

²⁷⁰ cf. Para. 7.5.3, Code of Conduct for Responsible Fisheries and para. 4, Annex II, SS/HMS Agreement

²⁷¹ Paras. 2 and 7, Annex II, SS/HMS Agreement

²⁷² cf. Article 5(b), SS/HMS Agreement which uses identical terms to Article 119, Law of the Sea Convention, and paras. 2 and 7, Annex II, SS/HMS Agreement, which refers to MSY *simpliciter*.

²⁷³ For example, in the case of depleted stocks, a stock level which could sustain the MSY is to be used as the rebuilding target: Para. 7, Annex II, SS/HMS Agreement

²⁷⁴ See H.L. Brown, "The United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks: An Analysis of International Environmental Law and the Conference's Final Agreement" (1996) 21 *Vermont Law Review* p.547 at p.577

Ultimately, the SS/HMS Agreement provides not merely support for the adoption of a precautionary approach in the management of marine living resources, but also a template for the implementation of such an approach.²⁷⁵ Certainly, this was necessary given the distrust of some States of precaution; that it might be used as a mechanism to shut down fisheries. By indicating precaution was to be used with pre-agreed strategies, fixed upon reference points determined by States in cooperation, the Agreement not only neutralised some of the suspicions of States, but, together with the Code of Conduct for Responsible Fisheries, gave greater certainty to a concept which had previously struggled for definition and consensus.²⁷⁶

Cooperative Management Measures

While the introduction of precaution into an instrument intended, ultimately, to become binding was a significant step forward, it was not the only development of significance in the SS/HMS Agreement.²⁷⁷ The Agreement also seeks to ensure

²⁷⁵ See Hey, *supra* note 90, pp.473-474

²⁷⁶ Davies and Redgwell use a "traffic light" analogy to note that there is no "red light" in the SS/HMS Agreement designed to halt fishing, only "amber" and "green": Davies & Redgwell, *supra* note 269, pp.261-262. While this the case, pre-agreed strategies implemented when reference points are approached can include moratoria once certain levels are exceeded. This is the case in the Bering Sea Doughnut Hole Convention, although the provision there is not intended to reflect a precautionary approach: see Chapter 4 at p.364

²⁷⁷ In fact, de Yturriaga in his discussion of the negotiation of the Agreement contrives not to refer to precaution at all - although he does consider it briefly in discussing the content of the text: de Yturriaga, *supra* note 148,

that measures implemented to assist a particular stock, will be consistent throughout the range of the stock. Recognising that effective management requires management of an entire stock rather than different measures adopted in a piecemeal fashion, Article 7 provides that States cooperate to agree upon suitable measures that are compatible throughout the range of the stock.²⁷⁸ Compatibility in this context is determined by a number of factors, including the content of measures within areas under national jurisdiction²⁷⁹, previously agreed measures for high seas areas between States and/or regional organizations²⁸⁰, biological unity of the stock²⁸¹, relative dependence of States upon the fishery²⁸², and ensuring there is no harmful impact.²⁸³ Both coastal and fishing States are obliged to cooperate directly, or through an appropriate regional entity²⁸⁴, and if no agreement can be reached within a reasonable time, the matter falls under the

pp.204-205

²⁷⁸ See Davies & Redgwell, *supra* note 269, pp.262-263; Brown, *supra* note 274, pp.574-576

²⁷⁹ Article 7(2)(a), SS/HMS Agreement. This appears to continue the paramountcy of jurisdiction and control, in that the first factor relevant to compatibility listed does not relate to biological or socio-economic concerns, but rather the sovereign rights of coastal States.

²⁸⁰ Articles 7(2)(b) and (c), SS/HMS Agreement

²⁸¹ Article 7(2)(d), SS/HMS Agreement

²⁸² Article 7(2)(e), SS/HMS Agreement

²⁸³ Article 7(2)(f), SS/HMS Agreement

²⁸⁴ Article 7(1), SS/HMS Agreement

dispute resolution provisions of Part XV of the Law of the Sea Convention.²⁸⁵ To ensure the effectiveness of the process is not diminished over time coastal States, and States fishing on the high seas must advise other interested States of the measures they have put in place.²⁸⁶

This is a significant step forward, in that States are obliged to coordinate the management of a common stock, and if a participant State refuses to cooperate to reach agreement on the coordination of its management efforts, it can be compelled into dispute resolution. This has substantial advantages over the *pactum de contrahendo* and *pactum de negotiando*, contained in the Law of the Sea Convention²⁸⁷, in that failure to conclude an agreement within a reasonable time leads to definite consequences, rather than the breach of an ill-defined duty, with no clear course of action in its not being met. The Agreement even encourages States to institute provisional measures of a practical nature²⁸⁸, pending the reaching of a final resolution, all of which emphasises the objective to secure sustainable fisheries.

²⁸⁵ Articles 7(3) and 7(4), SS/HMS Agreement

²⁸⁶ Articles 7(7) and 7(8), SS/HMS Agreement; see also de Yturriaga, *supra* note 148, p.206

²⁸⁷ See Chapter 2 at p.124

²⁸⁸ Articles 7(5) and 7(6), SS/HMS Agreement. This provision is reminiscent of Articles 74(3) and 83(3) of the Law of the Convention, which also urge States to conclude provisional arrangements of a practical nature to assist in maritime delimitation disputes.

Cooperation is by no means limited to ensuring the compatibility of existing measures, but also includes the establishment of new measures, and the mechanisms by which they are agreed. For both straddling stocks and highly migratory stocks, coastal States and States fishing on the high seas are obliged to cooperate to ensure the effective management and conservation of the stocks.²⁸⁹ Where the stocks are threatened, or a new fishery is being developed, this cooperation is translated to an obligation to enter into consultations in good faith and without delay.²⁹⁰ The principal mechanism to provide for cooperation is envisaged to be a regional fisheries management organization, membership of which must be open to all States with a "real interest in the fisheries concerned".²⁹¹ Where no organization exists, States are obliged to create one, for both straddling or highly migratory stocks²⁹², or else initiate an alternative arrangement to fulfil the same function.²⁹³ The incentive to compel participation of States in regional fisheries organizations is a

²⁸⁹ Article 8(1), SS/HMS Agreement

²⁹⁰ Article 8(2), SS/HMS Agreement. While negotiations are ongoing, States are obliged to act with "due regard for the rights, interests and duties of other States".

²⁹¹ Article 8(3), SS/HMS Agreement

²⁹² This reflects Articles 64(1) and 118, Law of the Sea Convention, with respect to highly migratory species; cf. Article 63(2), Law of the Sea Convention where no such obligation exists. See A. Tahindro, "Conservation and Management of Transboundary Fish Stocks: Comments in Light of the Adoption of the 1995 Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks" (1997) 28 *Ocean Development and International Law* p.1 at p.20

²⁹³ Article 8(5), SS/HMS Agreement

denial of access to the high seas fisheries the organization has responsibility for.²⁹⁴

Clearly under the Agreement, the role of the regional fisheries organization is significant, and it reinforces this role with additional provisions.²⁹⁵ Existing organizations are to be strengthened, to improve their effectiveness in tackling conservation and management of straddling and high migratory stocks.²⁹⁶ States are obliged, through the medium of the regional organization, to cooperate on a plethora of initiatives designed to further conservation and effective management of fish stocks. These include:

- * conservation and management measures
- * participatory rights
- * adoption and application of generally recommended international standards for responsible fishing
- * collection and evaluation of scientific advice
- * standard setting for data collection, verification and exchange
- * compilation and dissemination of data
- * promotion and conduct of stock assessments
- * establishment of appropriate cooperative mechanisms for effective

²⁹⁴ Article 8(4), SS/HMS Agreement

²⁹⁵ See deLone, *supra* note 251, pp.663-664; Christopher, *supra* note 254, p.370

²⁹⁶ Article 13, SS/HMS Agreement

- monitoring, surveillance and enforcement
- * means for participation of new members
 - * decision-making designed to facilitate the adoption of conservation and management measures in a timely and effective manner²⁹⁷
 - * promotion of peaceful dispute settlement
 - * cooperation of national agencies to implement the organization's decisions
 - * due publicity to conservation and management measures²⁹⁸

In addition, in recognition of the importance of data collection and scientific research to the viability of a successful management system utilising a precautionary approach, the Agreement sets standard requirements for data collection and dissemination.²⁹⁹ These requirements, contained in a separate annex to the Agreement, indicate that effective and timely reporting of activities from fishing vessels, as well as verification of such data by a variety of means are key elements to the meaningful provision of data.³⁰⁰ Both the FAO, on a global level, and

²⁹⁷ Such decision-making is also to have transparency: Article 12, SS/HMS Agreement. See discussion above at p.238

²⁹⁸ Article 10, SS/HMS Agreement

²⁹⁹ Article 14, SS/HMS Agreement

³⁰⁰ See Articles 1-6, Annex I, SS/HMS Agreement; see also Brown, *supra* note 274, pp.577-579

regional organizations are to be the hubs for cooperation in data exchange.³⁰¹

The Agreement also deals with new participants in a high seas fishery. Within the regional fisheries organization structure, existing parties are obliged to consider a series of factors in determining the nature and extent of the new participant.³⁰² These include the status of the stocks and the existing level of fishing, the respective interests and fishing patterns of existing and the new participant, the respective contributions of new and existing members to management and data collection, the needs of coastal communities which are mainly dependent upon the fisheries, the interests of developing States which has the stocks in areas subject to its national jurisdiction, and the interests of coastal States whose economies are overwhelmingly dependent upon the stocks.³⁰³ This mix of conservation and economic-based factors provides a new participant without any guarantee of access, but at least prevents arbitrary exclusion. However, given one of the factors is the existing level of fishing effort, and the bulk of the world's fisheries are presently

³⁰¹ Article 7, Annex I, SS/HMS Agreement. On scientific data and the Agreement generally see Christopher, *supra* note 254, p.369

³⁰² At a basal level, the new participant must have a "real interest" in the fishery: Article 8(3), SS/HMS Agreement. See P. Örebech, K. Sigurjonsson and T.L. McDorman, "The 1995 United Nations Straddling and Highly Migratory Fish Stocks Agreement: Management, Enforcement and Dispute Settlement" (1998) 13 *International Journal of Marine and Coastal Law* p.113 at pp.122-123; see also Tahindro, *supra* note 292, p.20

³⁰³ Article 11, SS/HMS Agreement; see generally J.R. Mack, "International Fisheries Management: How the U.N. Conference on Straddling and Highly Migratory Fish Stocks Changes the Law of Fishing on the High Seas" (1996) 26 *California Western International Law Journal* p.313 at p.327

exploited at or beyond the appropriate maximum effort³⁰⁴, the ability of a new member to force acceptance of its participation would seem problematic.

The Agreement does contain special provisions in respect of enclosed and semi-enclosed seas³⁰⁵, and areas of the high seas surrounded by areas under the jurisdiction of a single State.³⁰⁶ However these do not appear to place a coastal State in any more advantageous position than it would otherwise be in. In the case of the former seas, the Agreement retains the limited impact of Part IX of the Law of the Sea Convention. For high seas surrounded by a single State, there is a duty of cooperation between the coastal State and States wishing to fish, but nothing more.³⁰⁷ Geography has largely limited this provision's application to the area in the centre of the Sea of Okhotsk, known as the "peanut hole".³⁰⁸

³⁰⁴ See FAO, "World Fish Production Shows Slight Increase in 1996", FAO Press Release 97/35, 24 September 1997: in <http://www.fao.org/waicent/ois/press_ne/presseng/1997/pren9735.htm>

³⁰⁵ Article 15, SS/HMS Agreement

³⁰⁶ Article 16, SS/HMS Agreement

³⁰⁷ See Hey, *supra* note 90, pp.474-475; Tahindro, *supra* note 292, p.31

³⁰⁸ See J.K. Goltz, "The Sea of Okhotsk Peanut Hole: How the United Nations Draft Agreement on Straddling Stocks Might Preserve the Pollack Fishery" (1995) 4 *Pacific Rim Law and Policy Journal* p.443; A.G. Oude Elferink, "The Sea of Okhotsk Peanut Hole: *De Facto* Extension of Coastal State Control" (1997) 2 *Polar Oceans Reports* pp.1-21; Mack, *supra* note 303, p.328. A small high seas area may be surrounded by the New Zealand EEZ by virtue of the location of the Bounty and Chatham Islands, but the area is both too small and remote to make high seas fishing there a useful prospect for vessels from States other than New Zealand.

A more contentious provision in the Agreement deals with the rights of States who refuse to participate in regional schemes of management. States which are not members of any relevant regional organization, and which do not choose to cooperate in existing management measures, are deemed not to have discharged their obligation to cooperate.³⁰⁹ In such a circumstance, such States may not authorise vessels flying their flag from fishing in high seas areas that are the subject of cooperative regulation.³¹⁰ States that are members of such regional organizations undertake to request any recalcitrant State to participate, and failing that to cooperate on information-gathering on the fishing activities of such States, and to:

...take measures consistent with this Agreement and international law to deter activities of such vessels which undermine the effectiveness of subregional or regional conservation and management measures.³¹¹

³⁰⁹ Article 17(1), SS/HMS Agreement provides:

A State which is not a member of a subregional or regional fisheries management organization or is not a participant in a subregional or regional fisheries management arrangement, and which does not otherwise agree to apply the conservation and management measures established by such organization or arrangement, is not discharged from the obligation to cooperate, in accordance with the Convention and this Agreement, in the conservation and management of the relevant straddling fish stocks and highly migratory fish stocks.

³¹⁰ Article 17(2), SS/HMS Agreement provides:

Such State shall not authorize vessels flying its flag to engage in fishing operations for the straddling fish stocks or high migratory fish stocks which are subject to the conservation and management measures established by such organization or arrangement.

³¹¹ Article 17(4), SS/HMS Agreement. This is in similar form to Article XXI of CCAMLR: see Chapter 5 at p.413; see also Article IV, *Convention for the Conservation of Anadromous Fish Stocks in the North Pacific Ocean*, done at Moscow on 11 February 1992, entered into force 16 February 1993:

This measure is contentious because its potential impact is to compel the cooperation of third States with regional fisheries bodies. It is based on the assumption that all States have a duty to cooperate with respect to measures directed at the conservation of the marine living resources of the high seas.³¹² Since such a duty exists only in Articles 117 and 118 of the Law of the Sea Convention, it follows that the Agreement assumes that at least that portion of the Law of the Sea Convention has become part of customary international law. Further, it assumes that the *pactum de negotiando* required under Articles 117 and 118 have not been discharged if a State refuses to participate in the regional arrangement, and chooses not to implement conservation measures in similar terms to those of the organization.³¹³

The former of these two assumptions is sound. The widespread participation of the international community in the Law of the Sea Convention, and the reasons for non-participation expressed by those States that are not parties, indicate the bulk of

reprinted as Title VIII of P.L. 102-567

³¹² Davies and Redgwell state:

A serious question remains whether these provisions are consistent with the freedom of fishing on the high seas, and the extent to which the Agreement's further elaboration of the duty to co-operate is reflected in customary international law on the point.

Davies & Redgwell, *supra* note 269, p.265; see also Gherari, *supra* note 254, p.379

³¹³ In the context of high seas fisheries. See discussion in Chapter 2 at p.171; see also D.A. Balton, "Strengthening the Law of the Sea: The New Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks" (1996) 27 *Ocean Development and International Law* p.125 at pp.138-139

the Convention has become custom.³¹⁴ However, the second assumption is not without difficulties. Essentially a State while obliged to seek an agreement, is deemed not to cooperate if it does not apply the conservation measures of the organization with whom it is to negotiate. This would place the State in a very weak position during the currency of its negotiation. Presumably, if those measures completely allocate the total allowable catch to vessels from member States, the new participant State is banned from fishing. It must rely completely on the effectiveness of Article 11 of the SS/HMS Agreement to hope for any allocation of fishery catch at all.³¹⁵ If it chooses to join the regional fisheries organization, its position becomes no better, as it is still ultimately dependent upon Article 11, which, as considered above³¹⁶, might operate to exclude the participation of new players where the fishery is at or near its sustainable productive capacity.³¹⁷

Enforcement

The FAO's Compliance Agreement was an attempt by the international community

³¹⁴ See the discussion in Chapter 2 at p.126

³¹⁵ de Yturriaga frames his difficulties with the provisions in terms of *pacta tertiū nec nocent nec prosunt*: de Yturriaga, *supra* note 148, pp.223-224. With respect, the Agreement does not seek to do this, as it does not purport to bind third States to regional arrangements, merely to indicate what the scope of a binding obligation to cooperate is.

³¹⁶ See above at p.268

³¹⁷ W.T. Abel, "Fishing for an International Norm to Govern Straddling Stocks: The 1995 Canada-Spain Dispute of 1995" (1996) 27 *University of Miami Inter-American Law Review* p.553 at p.580

to address the problem of enforcement of fisheries regulations on the high seas. Enforcement under the SS/HMS Agreement is also a substantial advance over the reliance on flag State regulation that is the basis of high seas regulation under the Law of the Sea Convention. As with the elements of the Agreement directed at cooperation, the principal means utilised to achieve the objective is the regional fisheries organization.

However, it would be wrong to suggest that the SS/HMS Agreement rejects flag State enforcement. Rather, the flag State is still obliged to undertake enforcement of fisheries regulations on vessels flying its own flag, including failure to provide data, and to detain and prosecute vessels where appropriate.³¹⁸ Flag States are also obliged to set up a comprehensive licensing scheme, to ensure that only those vessels authorised to do so, fish on the high seas.³¹⁹ Similarly, flag States are encouraged to cooperate with other States in the investigation of possible breaches of conservation measures³²⁰, and this is achieved in such a way as to be entirely consistent with the paramountcy of flag State control over its vessels on the high

³¹⁸ Article 19, SS/HMS Agreement. These obligations substantially reflect those in the FAO Compliance Agreement. See Davies & Redgwell, *supra* note 269, p.266

³¹⁹ Article 18, SS/HMS Agreement. Licensing systems include the maintenance of a national register of high seas authorised vessels, detailed reporting requirements on fishing activities, and the implementation of vessel monitoring systems. See Tahindro, *supra* note 292, pp.33-35

³²⁰ Article 20, SS/HMS Agreement

seas.³²¹ Use is also made of port State control to give effect to conservation and management measures³²², but these are expressly framed to be entirely in accord with international law, and rights of inspection are applicable only to vessels that have entered the port voluntarily.³²³

There is a substantial change in approach when cooperation is considered at a regional level. Under Article 21, State parties to a regional fisheries arrangement effectively authorise other State parties to board and inspect their fishing vessels while fishing on the high seas, in the area covered by that arrangement.³²⁴ If the inspectors boarding vessel uncover a violation of any regional conservation

³²¹ See Örebech, Sigurjonsson & McDorman, *supra* note 302, pp.130-131; Brown, *supra* note 274, p.582; Mack, *supra* note 303, pp.330-331

³²² Article 23(1), SS/HMS Agreement provides:
A port State has the right and the duty to take measures, in accordance with international law, to promote the effectiveness of subregional, regional and global conservation and management measures. When taking such measures a port State shall not discriminate in form or in fact against the vessels of any State.

Note also Article 23(3), SS/HMS Agreement which provides that a port State can exclude any vessels or transshipments where the catch has been taken in a manner to undermine conservation measures.

³²³ Article 23(3), SS/HMS Agreement. See also D.M. Grzybowski, J.M. Deitch, S.E.A. Dwyer, D.S. Eichhorn, B.E. Lutness and C.H. Ternieden, "A Historical Perspective Leading Up to and Including the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks" (1995) 13 *Pace Environmental Law Review* p.49 at p.65

³²⁴ Articles 21(1) and 21(2), SS/HMS Agreement; see also Brown, *supra* note 274, p.583; Davies & Redgwell, *supra* note 269, pp.266-268; Tahindro, *supra* note 292, pp.37-38; Hey, *supra* note 90, pp.478-479

measures, they are authorised to secure any evidence and notify the flag State.³²⁵ The flag State then has a limited period in which to initiate an investigation itself, or to authorise the inspecting State to do so.³²⁶

Where the violation is deemed a serious breach of the conservation measures, and the flag State has not responded, nor taken action to investigate the matter itself, the inspectors can initiate their own investigation, and direct the master to the nearest appropriate port.³²⁷ The term "serious violation" is defined to include nine offences, including: fishing without a valid authorization from the flag State; failing to maintain accurate records of the catch as required by the regional fisheries organization; fishing in a closed area, during a closed season, or without or beyond an authorised quota; fishing for a stock which is prohibited or subject to a moratorium; using prohibited gear; falsifying or concealing the markings, identity or registration of the vessel; concealing, tampering with, or disposing of evidence relating to an investigation; multiple violations which constitute a serious disregard of conservation and management measures; and, other violations specified as such by the regional organization.³²⁸

³²⁵ Article 21(5), SS/HMS Agreement

³²⁶ The period is three working days: Article 21(6), SS/HMS Agreement

³²⁷ Article 21(8), SS/HMS Agreement

³²⁸ Article 21(10), SS/HMS Agreement. de Yturriaga notes that the European States were critical of this provision during negotiations: de Yturriaga, *supra* note 148, p.212

This amounts to a substantial diminution of flag State jurisdiction on the high seas, even though the flag State can reassert its jurisdiction if it chooses to initiate an investigation³²⁹, and inspecting States are liable for damages flowing from unlawful or disproportionate actions.³³⁰ Essentially, the regional fisheries organization has become a forum where State parties have introduced cooperative inspection, and to a more limited degree enforcement. The provisions are an attempt to deal with the situation where a flag State may be unwilling or unable, whether permanently or in a particular instance, to enforce the arrangements to which it has agreed to uphold. As such, States that are unable to effectively police vessels flying their flag ought not become a haven for those vessels unwilling to comply with conservation measures, as the energy of all the regional organization member States can be brought to bear over the relevant high seas area.

The impact of the provision is safeguarded from the impact of an intransigent or ineffective regional fisheries organization by Articles 21(3) and 22. The former provides that where a regional organization has not put in place procedures to permit State party investigation on the high seas within a 2 year period, then the basic boarding and inspection set out in Article 22 come into effect.³³¹ These

³²⁹ Article 21(12), SS/HMS Agreement

³³⁰ Article 21(18), SS/HMS Agreement

³³¹ Article 21(3), SS/HMS Agreement provides:

If, within two years of the adoption of this Agreement, any organization or arrangement has not established such procedures, boarding and inspection pursuant to paragraph 1, as well as any

basic procedures include simple rules to permit investigations to be as brief and unobtrusive as possible³³², have access to the entire relevant sections of the vessel³³³, and that the flag State be obliged to order a vessel to comply under pain of revocation of its authorisation to fish.³³⁴

The success of the scheme will obviously be contingent upon participation in both the SS/HMS Agreement and in regional fisheries organizations. Were the entire international community to adopt the Agreement, then all States would be obliged to cooperate with, and ultimately become a party to, the relevant regional body. Once this had occurred, all States fishing in an area could be monitored by any fisheries patrol vessel from any regional State party. A flag of convenience would be of no benefit, as States that were generous in the granting of their flag would be obliged to cooperate with regional bodies, and ultimately permit other States to undertake the enforcement activities which to the present they have not pursued.³³⁵

subsequent enforcement action, shall, pending the establishment of such procedures, be conducted in accordance with this Article and the basic procedures set out in article 22.

³³² Article 22(1), SS/HMS Agreement

³³³ Articles 22(2) and 22(3), SS/HMS Agreement

³³⁴ Article 22(4), SS/HMS Agreement

³³⁵ D.R. Teece, "Global Overfishing and the Spanish-Canadian Turbot War: Can International Law Protect the High-Seas Environment?" (1997) 8 *Colorado Journal of International Environmental Law and Policy* p.89 at p.121; Balton, *supra* note 313, pp.140-141

By placing such emphasis on regional fisheries organization, the SS/HMS Agreement has thrust these bodies back into a central role in fisheries management, perhaps more akin to that envisaged for such bodies in the late 1950s before the widespread extension of coastal State jurisdiction. The Agreement relies heavily upon the effectiveness of these bodies³³⁶, and this has caused Davies and Redgwell to express reservations over the possible use of objection procedures with regional bodies to undermine their effectiveness.³³⁷ Clearly, the implementation of the SS/HMS Agreement will require many fisheries bodies to reassess their own practices and structures, to ensure the viability of the wider scheme.³³⁸

Other Provisions

The remaining provisions of the SS/HMS Agreement have created less controversy, and are only tangentially relevant in the context of this work. Express assistance for developing States to participate in all facets of the Agreement is to be

³³⁶ See Örebech, Sigurjonsson & McDorman, *supra* note 302, p.120; de Yturriaga, *supra* note 148, p.209

³³⁷ Davies & Redgwell, *supra* note 269, p.271. Örebech, Sigurjonsson and McDorman also note the potential impact of the retention of objection procedures: Örebech, Sigurjonsson & McDorman, *supra* note 302, pp.125-126

³³⁸ There is some evidence that this is occurring. Note the work of the General Fisheries Commission of the Mediterranean to revise its own instrument: *Report of the Twenty-second Meeting of the General Fisheries Council for the Mediterranean*, Rome 13-16 October 1996: reprinted in <<http://www.fao.org/WAICENT/FAOINFO/FISHERY/meetings/gfcm/gfcm22/reportE.htm#APPG>>

provided³³⁹, as well as adoption of the Part XV dispute resolution procedures of the Law of the Sea Convention, applied on a *mutatis mutandis* basis.³⁴⁰ This will mean that disputes concerning high seas fisheries and the application of the Agreement will be subject to compulsory dispute resolution.³⁴¹ Non-parties to the Agreement are to be encouraged to participate, and deterred from undermining the effectiveness of it, but in a manner consistent with international law.³⁴²

The Agreement itself is to enter into force 30 days after receipt by the UN Secretary-General of the thirtieth instrument of ratification. As at 1 January 1999, some 19 States had deposited ratifications³⁴³, and some 59 States³⁴⁴ had signed the Agreement. Provisional implementation of the Agreement is possible under Article 41, but as at 1 January 1999, no States had availed themselves of this option.³⁴⁵

³³⁹ Articles 24-26, SS/HMS Agreement

³⁴⁰ Article 30, SS/HMS Agreement; see also Gherari, *supra* note 254, pp.386-390; Örebech, Sigurjonsson & McDorman, *supra* note 302, pp.133-140; Tahindro, *supra* note 292, pp.44-49

³⁴¹ See above in Chapter 2 at p.178

³⁴² See discussion of Article XXI, CCAMLR in Chapter 5 at p.413

³⁴³ These are the Bahamas, Fiji, Iceland, Iran, the Maldives, Mauritius, the Federated States of Micronesia, Namibia, Nauru, Norway, Russia, St Lucia, Samoa, Senegal, the Seychelles, Solomon Islands, Sri Lanka and the United States.

³⁴⁴ Including the European Union, and some of its member States.

³⁴⁵ Article 41, SS/HMS Agreement

Customary International Law and the Precautionary Approach to Fisheries Management

Having considered the principal areas of development of a precautionary approach in marine living resource management, it is possible to draw a number of conclusions. The above discussions make it clear that there have been substantial advances in the employment of precaution in fisheries management, from a virtual complete absence in the 1980s, to a substantial body of material in the present. However, it is also clear that although much progress has been made, none of the instruments discussed advocating a precautionary approach is binding of its own force. Agenda 21 and the FAO Code of Conduct for Responsible Fisheries are recommendatory measures that were never intended to bind States. The Straddling Stocks and Highly Migratory Stocks Agreement is ultimately intended to bind parties to it, but at the present time the Agreement is yet to enter into force, and may not commence for some years. Even when it does achieve the requisite 30 ratifications, it is clear that it is not intended to function as an objective regime. While the identification of such regimes is problematic to say the least, there appears to be agreement that the initiating parties to an objective regime must intend that it bind the international community as a whole.³⁴⁶ There can be no

³⁴⁶ On this point see the separate opinion of Judge McNair in *International Status of South West Africa Advisory Opinion* ICJ Reports 1950 p.132 at pp.150-155. McNair also required the participation of the great powers, which would also appear to be lacking in this instance: *Ibid.*; see also the discussion by Sir Humphrey Waldock: (1964) 2 *Yearbook of the International Law Commission* pp.27-34; A. Wyrozumska, "Erga Tertios Effect of the Antarctic Treaty" (1993) 6 *Antarctic and Southern Ocean Law*

such intention deduced from the content or *travaux préparatoires* in the case of the Straddling Stocks and Highly Migratory Stocks Agreement³⁴⁷, and such a conclusion is completely at odds with Article 33, which obliges State parties to encourage non-parties to join.³⁴⁸ The critical issue is therefore whether a precautionary approach to fisheries management has obtained the requisite support to be regarded as a norm of customary international law.

At the present point in time, it is not possible to say that precaution in marine living resource management has crystallised into customary international law, although certainly it may be regarded as *de lege ferenda*. Firstly, State practice with respect to precaution has not yet reached a level of uniformity that is sufficiently widespread to meet the first limb of the traditional test of custom. Only a small number of States have ratified the Straddling Stocks and Highly Migratory Stocks Agreement³⁴⁹, and given that some of the provisions create

and Policy Occasional Papers p.25

³⁴⁷ The closest the SS/HMS Agreement comes to having an *erga tertios* effect is the imputation of a duty on third States to cooperate on high seas fisheries. The Agreement itself does not purport to be the source of such a duty, but rather indicates the standard by which the duty may be discharged. cf. the view of Örebech, Sigurjonsson & McDorman, where they assert the impact of Article 8(3) is to apply to all States fishing on the high seas - not merely State parties: Örebech, Sigurjonsson & McDorman, *supra* note 302, p.124

³⁴⁸ If the Agreement were an objective regime, such a provision would clearly be unnecessary, as non-parties would be bound by virtue of the nature of the Agreement itself.

³⁴⁹ As at 1 January 1999, only 19 States had ratified the Agreement.

substantial additional obligations to traditional high seas rights and duties, it cannot be said to represent custom³⁵⁰, at least in the short term.³⁵¹ Agenda 21, while certainly intended to have a normative character, has not attracted universal international support in all its aspects, and as was noted above, does not refer to precaution in the context of fisheries management in any case.³⁵² The arrangements concluded by the FAO, particularly the Code of Conduct for Responsible Fisheries, also cannot be said to represent custom. The Code is both non-binding and very recent, and although the FAO has devoted a substantial amount of time, effort and resources towards its adoption on a world-wide basis, it would be premature to submit it represented custom.

³⁵⁰ That the States participating in the UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks were of the view that the SS/HMS Agreement did not embody custom is evident from Resolution I adopted during the sixth session. Paragraph 3 of Resolution I:

Calls upon States and other entities referred to in paragraph 2 of the present resolution to apply the Agreement provisionally."

Were the SS/HMS Agreement widely regarded as embodying custom, such a provision in the resolution would be unnecessary.

³⁵¹ For example Hyvarinen, Wall and Lutchman have grave doubts over the transition of the SS/HMS Agreement into customary international law, noting the practical difficulties for some States to meet the criteria contained in it: J. Hyvarinen, E. Wall and I. Lutchman, "The United Nations and Fisheries in 1998" (1998) 29 *Ocean Development and International Law* p.323 at p.329

³⁵² Juda takes the view that the Declaration of Cancun, Agenda 21 and the Rio Declaration are all soft law instruments: L. Juda, "The 1995 United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks: A Critique" (1997) 28 *Ocean Development and International Law* p.147 at p.151

Most significantly, this plethora of instruments not creating binding obligations of themselves mitigates against the conclusion that the requisite *opinio juris* has formed. While States might express support for these principles, if they restrict themselves to the expression of that support only in fora where no consequences flow, it is difficult to infer that State practice is being modified by a belief that international law compels that practice. It may be unrealistic to expect all States to become parties to international binding arrangements before customary international law might crystallise, however it would seem strange to deduce the existence of a rule of custom without at least a proportion of States having sought to give substance to the rule in treaties.³⁵³ This is emphasised by the relatively recent development of precaution in international law, where the International Court of Justice has indicated widespread treaty participation would be necessary to found a rule of custom whose crystallisation would have taken place in a short period of time.³⁵⁴

³⁵³ Such reasoning explains the practice in human rights law of the UN General Assembly sponsoring declarations prior to the negotiation of substantive treaty obligations in certain subject areas: see the tables reproduced in R. August, *Public International Law: Text, Cases and Readings*, (Englewood Cliffs: Prentice Hall, 1995) pp.268-269

³⁵⁴ The ICJ stated:

Although the passage of only a short space of time is not necessarily, or of itself, a bar to the formation of a new rule of customary international law on the basis of what was originally a purely conventional rule, an indispensable requirement would be that within the period in question, short though it might be, State practice, including that of States whose interests are specifically affected, should have been both extensive and virtually uniform in the sense of the provision invoked...It might be that, even without the passage of

There are strong indications however that although precaution in fisheries management has yet to reach the status of customary international law, it is proceeding rapidly towards that status. In addition to the international support voiced within the FAO for the concept in the Code of Conduct for Responsible Fisheries³⁵⁵, a number of regional fisheries bodies, both associated with the FAO and otherwise, have moved to restructure their terms of reference to take into account changing perceptions of conservation and fisheries management.³⁵⁶ These organizations have either moved to expressly endorse precautionary management

any considerable period of time, a very widespread and representative participation in the convention might suffice of itself, provided that it included that of States whose interests were specifically affected.

North Sea Continental Shelf Cases ICJ Reports 1969 p.3 at pp.42-43; see also R. Piotrowicz, "The Time Factor in the Creation of Rules of Customary International Law" (1994) 21 *Polish Yearbook of International Law* p.69 at pp.73-74

³⁵⁵ For example, during the Committee on Fisheries Management of the General Fisheries Council for the Mediterranean's meeting in June 1997, Algeria, Egypt, France, Italy, Japan, Malta, Morocco and Spain expressed support for the Code and reported domestic measures taken for its implementation. In addition, the European Union indicated that the objectives of the Code, including the precautionary principle, were incorporated into the EU Common Fishery Policy: General Fisheries Council for the Mediterranean, *Report of the Tenth Session of the Committee on Fisheries Management*, Rome 17-20 June 1997, (Rome: FAO, 1997) pp.10-11; see also FAO, *Report of the Twenty-Second Session of the Committee on Fisheries*, Rome 17-20 March 1997, (Rome: FAO, 1997) Fisheries Report No.562, p.4

³⁵⁶ The FAO's Committee on Fisheries noted that the Fishery Committee for the Eastern Central Atlantic (CECAF) had revised its terms of reference, while the Asia-Pacific Fishery Commission (APFIC) and the Indian Ocean Fishery Commission (IOFC) had embarked upon a restructuring exercise: see FAO, *Report of the Twenty-First Session of the Committee on Fisheries*, Rome 10-13 March 1995, (Rome: FAO, 1995) p.5

and/or the Code of Conduct, or actively have that prospect under consideration.³⁵⁷

This process is certainly aided by the substantial contiguity between the Code of Conduct and the SS/HMS Agreement, where in expressing support for either instrument, a State gives its support to the same structure for a precautionary approach to marine living resource management.

Other sources of international support for precaution in fisheries management also exist. A precautionary approach received the explicit support of the Commission for Sustainable Development (CSD), once again indicating international approbation for the concept in a setting which did not generate binding obligations.³⁵⁸ Similarly, thirteen South Pacific Island States gave express support to the SS/HMS Agreement within the Oceanic Fisheries Management component of the Strategic

³⁵⁷ For example CCAMLR has expressly recognised that precaution is at the heart of its approach to marine living resource management: see Chapter 5 at p.390; the General Fisheries Commission (formerly Council) for the Mediterranean during its 1997 meeting sought an amendment to its constituent document to expressly incorporate a precautionary approach in a new Article III(2): see *Report of the Twenty-second Meeting of the General Fisheries Council for the Mediterranean*, Rome 13-16 October: reprinted in <<http://www.fao.org/WAICENT/FAOINFO/FISHERY/meetings/gfcm/gfcm22/reportE.htm#APPG>>; further examples appear below.

³⁵⁸ Commission for Sustainable Development, *Report of the Fourth Session*, New York: 18 April - 3 May 1996, UN Doc.: E/CN.17/1996/38: reprinted in <[gopher://gopher.un.org:70/00/esc/cn17/1996/96-38.EN](http://gopher.un.org:70/00/esc/cn17/1996/96-38.EN)>; Note the criticism of Hyvarinen, Wall and Lutchman that the work of the CSD was unduly politicised and did not amount to an advance over existing provisions in the SS/HMS Agreement: Hyvarinen, Wall & Lutchman, *supra* note 351, p.327

Action Programme for international waters for Pacific Islands³⁵⁹, as did a group of South and South-East Asian States meeting to discuss mutual fisheries issues in the Bay of Bengal.³⁶⁰

A growing amount of State practice in support of the Code and/or the SS/HMS Agreement can also be observed. The UN Secretary-General in his annual reports on the Law of the Sea, and on drift-net and unauthorised fishing has noted that a large number of States have taken affirmative action to address the General Assembly resolutions on driftnetting.³⁶¹ A number of regional fisheries organizations have moved to actively consider or adopt a precautionary approach

³⁵⁹ *Strategic Action Programme for International Waters for Pacific Islands*, adopted at Rarotonga on 19 September 1997: <<http://www.sndp.undp.org/siocam/projects/ras96g42.html>>; see discussion in A.A. Verlaan and G. Miles, "New Developments in Marine Resource Management for Pacific Islands" (1998) 13 *International Journal of Marine and Coastal Law* p.237 at pp.241-244

³⁶⁰ Government of Bangladesh, "Signing on to the Code of Conduct for Responsible Fisheries: Experiences from the Bay of Bengal" 25 October 1998: reprinted at <<http://www.fao.org/WAICENT/FAOINFO/FISHERY/agreem/codecond/codbobp.htm>>

³⁶¹ UN Secretary-General, *Large-Scale Pelagic Drift-Net Fishing, Unauthorized Fishing in Zones of National Jurisdiction and on the High Seas, Fisheries By-catch and Discards and other Developments*, 8 October 1998, UN General Assembly Doc. A/53/473: reprinted <http://www.un.org/Depts/los/a53_473.htm>. The States referred to include the Colombia, Switzerland, Oman, Cape Verde, Russia, Iran, Japan, the Maldives, Norway, Indonesia, Mexico, the United States, Burkina Faso and European Union.

specifically, or the Code of Conduct for Responsible Fisheries generally.³⁶² The Northwest Atlantic Fisheries Organization and the International Council for the Exploration of the Sea have devoted considerable time and energy to the statistical representation of precaution within mathematical models used to calculate appropriate catch levels³⁶³, preparing the way for the possible practical introduction of precaution in the future.

All this indicates a sizeable amount of favourable support for precaution and with burgeoning international State practice, it seems clear that a new norm of marine living resource management is emerging. Exactly how long before the international community comes to accept that precaution represents customary international law is a moot point, but certainly that development must be seen to be in the

³⁶² See *Report of the Fishery Committee for the Eastern and Central Atlantic*, Lome 8-11 December 1997, paras 13-15: reprinted in <<http://www.fao.org/WAICENT/FAOINFO/FISHERY/agreem/codecond/cecaf.htm>>; *Report of the Committee for the Development and Management of Fisheries in the Southwest Indian Ocean of the Indian Ocean Fishery Commission*, Mahé 29 September - 2 October 1997: reprinted in <<http://www.fao.org/WAICENT/FAOINFO/FISHERY/agreem/codecond/swiosumf.html>>; *Report of the Southeast Asian Fisheries Development Centre Thirtieth Council Meeting*, Bandar Seri Begawan 17-21 March 1998: reprinted in <<http://www.seafdec.org/proj/stra141.htm>>. The International Council on the Exploration of the Sea Advisory Committee on Fisheries also has established a Study Group on the Precautionary Approach to Fisheries Management which met during 1998: reprinted in <<http://www.ices.dk/committe/acfn.html>>

³⁶³ Northwest Atlantic Fisheries Organization, *Report of Scientific Council Workshop on the Precautionary Approach to Fisheries Management*, Dartmouth 17-27 March 1998, NAFO SCR Doc. 98/76

foreseeable future.

Ecosystem Management

Introduction

Ecosystem management is a relatively recent phenomenon. One of the earliest references to it, in a legal context, can be found in the positions advanced by Chile, Ecuador and Peru while participating in the "Santiago Negotiations" in 1955.³⁶⁴ The 3 South American delegations submitted a document to the United States' delegation which:

...advanced a theory of 'eco-systems' and 'biomas'[sic] according to which the interdependence of life on the coastal land with the living communities of the sea, plus the geographic, hydrographic, climatic, and other environmental factors influencing both, were said to create a relationship of such unity as to serve as a scientific basis for the legal claim of coastal states to preferential rights over adjacent waters.³⁶⁵

While clearly the document was self-serving, in that it was an attempt to justify the proclamation of a 200 mile exclusive fishing zone by linking the ecosystem of the adjacent ocean with that of the littoral, the content of the document is interesting.

³⁶⁴ These negotiations were held to attempt to procure a regional fisheries agreement for the southeastern Pacific in the wake of the unilateral extension of jurisdiction by the three South American States. The meetings, which included the United States, took place in Santiago between 14 September and 5 October 1955.

³⁶⁵ United States Department of State, *Santiago Negotiations on Fishery Conservation Problems*, Santiago, Chile 14 September - 5 October 1955: reprinted (1955) XXXIII *Department of State Bulletin* pp.1025-1030; also reprinted in M.M. Whiteman (ed.), *Digest of International Law*, (Washington: Department of State, 1965) Vol.4, p.1107

This marks one of the earliest attempts to consider fisheries as part of an ecosystem, rather than a series of single commercial stocks, that were to be thought of, and regulated, as discreet and individual units.

The juridical basis for using such a system is also relatively recent, and cannot be derived from a single point of origin. The reasons for this lie in the approach international law has taken to questions of resource management. Essentially, international law is State-centred, and consequently States are vested with complete control over resources within their jurisdiction.³⁶⁶ While the limits of some States reflect natural boundaries³⁶⁷, where separate ecosystems exist independently, most States are separated by arbitrary boundaries that do not reflect divisions in nature. This is especially true in the oceans, where the joke is often made that fish do not know to swim within the jurisdiction of a single State's EEZ, or the location of maritime boundaries.

Since the focus of regulation has traditionally been the State, and the State and ecosystem rarely correspond, international law has been ill-suited to the

³⁶⁶ In fact the ability to demonstrate such control is an indicia of sovereignty and Statehood: see J. Crawford, *The Creation of States in International Law*, (Oxford: Clarendon Press, 1979) pp.42-71

³⁶⁷ Essentially island States are the only ones to fall into this category.

implementation of management systems designed to manage an entire ecosystem.³⁶⁸ Since the implementation of a system based around an ecosystem would usually require a diminution of State sovereignty or sovereign rights³⁶⁹, there was little incentive for the promotion of such a system, and consequently such systems are rare.³⁷⁰ Nevertheless, as awareness of ecological relationships increases, and pressure on natural resources becomes greater, a number of international instruments have at least raised the issue of ecosystem management. The remainder of this chapter will seek a definition of ecosystem management, consider in what contexts the concept has been used in recent years, and finally consider whether it has emerged as a principle of international environmental law.

Ecosystem Management as a Concept

The term "ecosystem" is seldom defined in international instruments, or even by

³⁶⁸ M.H. Belsky, "Management of Large Marine Ecosystems: Developing a Rule of Customary International Law" (1985) 22 *San Diego Law Review* p.733 at pp.759-760

³⁶⁹ On the other hand, Belsky notes that the extension of fisheries jurisdiction to 200 nautical miles substantially increased the possibility of a single State having jurisdiction over an entire ecosystem: M.H. Belsky, "Marine Ecosystem Model: The Law of the Sea's Mandate for Comprehensive Management" in L.M. Alexander, S. Allen and L. Carter Hanson (eds), *New Developments in Marine Science and Technology: Economic, Legal and Political Aspects of Change*, (Honolulu: Law of the Sea Institute, 1989) p.115 at p.116

³⁷⁰ CCAMLR is the only contemporary marine living resource management agreement which utilises an ecosystem approach. It is the subject of detailed examination in Chapter 5.

publicists who refer to the concept. At a general level, the word "ecosystem" is certainly a 20th Century creation, being derived from the fusion of "ecology" and "system". Inherent in the definition is the interaction of a particular ecology in a systematic way - that the elements of the ecology are interacting, and are associated with each other, either directly, or through network of inter-relationships. While most easily described in the context of the biological environment, it is also intended to include the physical environment where biological interaction takes place.³⁷¹

While a general definition is useful, it is necessary to consider what is encompassed by an ecosystem with a greater degree of specificity. Saigal notes that scholars from different disciplines may have differing perceptions of what an ecosystem might entail.³⁷² Given the concept of an ecosystem is derived from ecology, the viewpoint of an ecologist may be most appropriate. Using the definition given by Odum:

³⁷¹ The Oxford English Dictionary notes that the first published use of the term "ecosystem" was by A.G. Tansley in 1935, and that it was intended to cover both the physical environment and its associated biome: *Oxford English Dictionary*, (Oxford: Clarendon Press, 1989) Vol.5, p.61

³⁷² For example, Saigal notes from an economic perspective, an ecosystem is seen the environment in which economic activity takes place. It provides resources wherein economic benefit is derived, as well as an assimilator of waste, all of which can be expressed in terms of circular economic models: K. Saigal, "Sustainable Management of Ecosystems" (1998) 13 *Ocean Yearbook* p.56 at pp.59-63; see also the work of Pearce and Turner: D.W. Pearce and R.K. Turner, *Economics of Natural Resources and the Environment*, (New York: Harvester Wheatsheaf, 1990)

An ecosystem is a functional unit of physical and biological organization with characteristic trophic structure and material cycles, some degree of internal homogeneity, and recognizable boundaries.³⁷³

From this, an ecosystem can be viewed as a type of network, with individual living organisms as nodal points, linked to each other in complex patterns through interaction with each other. The network is an open system, commencing with energy introduced from the sun, and then circulating back through a chain of organisms. The relationships between organisms are never entirely stable, making the system dynamic and subject to variation over time.³⁷⁴ The network consists of both physical and biological elements, and can be delimited from other ecosystems surrounding it.³⁷⁵ The boundaries of ecosystems often present great difficulties, as even where physical boundaries can be identified, there may be network relationships between biological elements in adjacent environments.³⁷⁶

It is submitted that most references to an ecosystem in a legal context are close to the definition used above, and consequently management systems employing such

³⁷³ E. Odum, "The Emergence of Ecology as a New Integrative Discipline" (1977) 195 *Science* p.1289 at p.1289; see also U. Lie, "Marine Ecosystems: Research and Management" in J.G. Richardson (ed.), *Managing the Ocean: Resources, Research, Law*, (Mt Airy: Lomond, 1985) p.311 at p.312

³⁷⁴ Saigal, *supra* note 372, pp.63-65. A diagrammatic representation of a simple marine ecosystem in the Antarctic is reproduced in Chapter 5 at p.386

³⁷⁵ Lie, *supra* note 373, pp.312-313

³⁷⁶ This is most clearly seen in ecological role of amphibians, and other creatures such as seabirds, that can live in one defined physical environment, such as the land, but draw sustenance from another, the marine environment.

an approach are seeking to ensure that the basic ecological relationships within an ecosystem are maintained. The Biodiversity Convention defined an ecosystem as:

...a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.³⁷⁷

It is evident that this is closely related to the ecological definition used above. Belsky has indicated the ecosystem management requires studies of the "whole ecologic mosaic in a region", and that procedures for conservation and exploitation, as well as those devoted toward the protection of ocean space, must be integrated to provide a holistic approach.³⁷⁸ In the Convention for the Conservation of Antarctic Marine Living Resources, the only marine living resource Convention which utilises ecosystem management, references to the ecosystem are accompanied by references to the maintenance of ecological relationships.³⁷⁹ In the context of marine living resource management, what is entailed is management consideration of more than a target-species, but also consideration of other related, or dependent, non-target species, in the making of decisions.³⁸⁰ A number of publicists have sought to consider ecosystem management for marine areas in terms of the large

³⁷⁷ Article 2, Biodiversity Convention

³⁷⁸ M.H. Belsky, "The Ecosystem Model Mandate for a Comprehensive United States Ocean Policy and Law of the Sea" (1989) 26 *San Diego Law Review* p.417 at p.448

³⁷⁹ Article II, CCAMLR

³⁸⁰ This is essentially what is envisaged in para. 17.45, Agenda 21:
...Emphasis should also be on multi-species management and other approaches that take into account the relationships among species, especially in addressing depleted species, but also in identifying the potential of underutilized or unutilized populations.

marine ecosystem (LME). These are extensive marine areas, greater than 200,000 square kilometres, with unique characteristics to distinguish them from adjacent areas, and which can be effectively managed as a single block.³⁸¹

Ecosystem Management and Precaution

There are linkages between the precautionary principle and the management of an ecosystem as a whole. Ecosystem management requires holistic decision-making. That is, the impact of an activity on one element in the ecosystem may have consequences on other components of the same system, and these need to be taken into account. Since an ecosystem consists of interconnected species, harvesting one species will necessarily affect others within the system. Precaution is essentially concerned with responses to uncertainty, and limiting freedom of action in the face of a risk, based on the possible consequences of that risk being realised. A link between the two concepts can be made, as decision-makers will rarely, if ever, have

³⁸¹ On LMEs see E. Okemwa and M. Ntiba, "Large Marine Ecosystems Concept applied to Managing Offshore Zones and Marine Resources" in E.L. Miles & T. Treves (eds), *The Law of the Sea: New Worlds, New Discoveries*, (Honolulu: Law of the Sea Institute, 1993) p.106; L. Hinds, "World Marine Fisheries: Management and Development Problems" (1992) 16 *Marine Policy* p.394 at pp.402-403; Belsky, *supra* note 368, pp.733-763; K. Sherman, "Biomass Yields of Large Marine Ecosystems" (1989) 8 *Ocean Yearbook* p.117 [hereafter cited as Sherman (1989a)]; J.R. Morgan, "Large Marine Ecosystems: An Emerging Concept of Regional Management" (1988) 29 *Environment* p.4; K. Sherman, "Large Marine Ecosystems: A Case Study" in L.M. Alexander, S. Allen and L. Carter Hanson (eds), *New Developments in Marine Science and Technology: Economic, Legal and Political Aspects of Change*, (Honolulu: Law of the Sea Institute, 1989) p.97 [hereafter cited as Sherman (1989b)]

meaningful data on all the elements, or relationships between those elements, of an ecosystem. As such, the impact on the ecosystem may be unclear, and the potentialities of the precautionary principle will come into play.³⁸²

While the link can be made between precaution and ecosystem management, it should not be over-emphasised. While data concerning the whole of an ecosystem may be sketchy, the likely consequences of not possessing the data may not always be significant. If fishing level is well within estimates for MSY, the impact of fishing one species on others within the ecosystem may not be great - this is evident in traditional fisheries, where the long term stability of the fisheries indicate stability in ecological relationships. However, as greater stress is placed upon a fishery, the potential impact of other factors upon it from within the ecosystem grow more significant, making their consideration in an exercise of precautionary decision-making more important.

International Law and Ecosystem Management

As noted above, only one marine living resource management agreement seeks to

³⁸² Certainly such linkages were identified by an expert consultation held under the auspices of the FAO: See FAO, *Report of the Expert Consultation on Guidelines for Responsible Fisheries Management*, (Rome: FAO, 1995) Wellington 23-27 January 1995, Fisheries Report No.519, p.19 and p.25. Similar links were apparent at the First Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice under the Biodiversity Convention: see Annex to Recommendation I/8 of the SBSTTA, Paris 4-8 September 1995, Doc. No.: UNEP/CBD/COP/2/12: reprinted in <<http://www.biodiv.org/sbstta/sb95seas.html>>

implement an ecosystem management, however a surprising range of instruments refer to, or even advocate, an ecosystem approach.³⁸³ In order to gauge the status of ecosystem management in international law, a brief survey of the use of these instruments is necessary. Such a survey will, by necessity, be less structured than the equivalent survey of instruments considering precaution, as there has been less uniformity in attitude and less cohesion in the advocacy of ecosystem management.

UNCED

At UNCED, ecosystem management certainly received some consideration. It received some limited support in the content of Chapter 17 of Agenda 21, although not to any significant extent. Multi-species management of stocks was advocated in the introductory section of the portion of Chapter 17 devoted to the use of marine living resources, but reference to ecosystem management elsewhere is lacking.³⁸⁴ It is in the Biodiversity Convention that ecosystem management was given greater

³⁸³ Sherman notes there are a number of States investigating LMEs with a view to management of these areas as a whole ecosystem: Sherman (1989b), *supra* note 381, pp.98-107

³⁸⁴ An earlier draft prepared by the Preparatory Committee of UNCED in 1991 does refer to desirability of managing high seas fisheries through "ecosystem, multi-species approaches", but this reference had disappeared by the preparation of the final text: Preparatory Committee for the United Nations Conference on Environment and Development, *Protection of Oceans, All Kinds of Seas including Enclosed and Semi-Enclosed Seas, Coastal Areas and the Protection, Rational Use and Development of their Living Resources: Report of the Secretary-General of the Conference*, 17 December 1991, Doc No.: A/CONF.151/PC/100/Add.21: reprinted (1991) 7 *International Organizations and the Law of the Sea Documentary Yearbook* p.407 at p.420. cf. Para. 17.45, Agenda 21

consideration.

The Biodiversity Convention does not focus directly upon marine living resources, but is of some relevance to the place of ecosystem management within international law. Under the Biodiversity Convention States are obliged to develop strategies for the sustainable use of biodiversity³⁸⁵ and biological resources.³⁸⁶ The definitions of both biological diversity and biological resources expressly include

³⁸⁵ Article 6, Biodiversity Convention provides:

Each Contracting Party shall, in accordance with its particular conditions and capabilities:

- (a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measures set out in this Convention relevant to the Contracting Party concerned; and
- (b) Integrate as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.

³⁸⁶ Article 10, Biodiversity Convention provides:

Each Contracting Party shall, as far as possible and as appropriate:

- (a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making;
- (b) Adopt measures relating to the use of biological resources to avoid or minimise adverse impacts on biological diversity;
- (c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;
- (d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and
- (e) Encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.

the variability of marine ecosystems³⁸⁷, and the biotic components of such ecosystems.³⁸⁸ This would seem to impose a duty upon State parties to the Biodiversity Convention to incorporate consideration of impacts upon the ecosystem into their decision-making structures. That said, the obligation itself is somewhat amorphous, as there is no real guidance on the content or implementation of appropriate measures.

This deficiency was recognised by the parties, and to a certain extent within the Convention itself. The Convention provided for regular Conferences of the Parties (COP) to, *inter alia*, review the Convention's implementation³⁸⁹, and the establishment of a multi-disciplinary Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), to provide detailed advice to assist the COP in its task.³⁹⁰ Although the Convention's ambit covers marine and terrestrial biodiversity, both the COP and the SBSTTA have addressed issues of marine living

³⁸⁷ Article 2, Biodiversity Convention defines "biological diversity" as:
...the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this diversity includes diversity within species, between species and of ecosystems.

³⁸⁸ Article 2, Biodiversity Convention defines "biological resources" as including:
...genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.

³⁸⁹ Article 23, Biodiversity Convention

³⁹⁰ Article 25, Biodiversity Convention

resource management and conservation. The most significant outcome in the field from these two bodies was the Jakarta Mandate on Marine and Coastal Biodiversity.

The Jakarta Mandate draws its name from the second Biodiversity COP meeting held in Jakarta in November 1995 (COP-2), where it was adopted, although it was, to a large extent, framed at the preceding SBSTTA meeting in Paris in September 1995.³⁹¹ SBSTTA presented five thematic areas dealing with what it perceived to be the most significant threats to the marine environment and biodiversity to the COP-2.³⁹² One of these theme areas was the sustainable use of coastal and marine living resources, and various recommendations on how to combat this threat were made. The recommendations made by SBSTTA to COP-2 were expressly supported by the States present in Jakarta.³⁹³

The Mandate expressly urges the adoption of ecosystem based approaches to the

³⁹¹ A general background and discussion of the Jakarta Mandate is provided by Goote: M.M. Goote, "Convention on Biological Diversity: The Jakarta Mandate on Marine and Coastal Biological Diversity" (1997) 12 *International Journal of Marine and Coastal Law* p.377 at pp.377-389

³⁹² These are contained in Recommendation I/8 of the SBSTTA, Paris 4-8 September 1995, Doc. No.: UNEP/CBD/COP/2/12: reprinted in <<http://www.biodiv.org/sbstta/sb95seas.html>>

³⁹³ The Jakarta Mandate is reproduced in Annex 5 of Decision II/10 of the COP, Jakarta 6-17 November 1995, Doc. No.: UNEP/CBD/COP/2/19: reprinted in <<http://www.biodiv.org/sbstta2/sb214.html>> [hereafter cited as Jakarta Mandate]

management of marine living resources, in conjunction with precaution.³⁹⁴ LMEs were recommended as the appropriate units for the implementation of an ecosystem approach.³⁹⁵

Following COP-2, a roster of experts was prepared, and meetings held to provide further technical assistance to both SBSTTA and COP on a number of issues, including marine living resource management. The terms of reference for the report indicated the experts were to identify options for a pragmatic but comprehensive approach to marine living resource management, together with the use of, *inter alia*, a precautionary approach.³⁹⁶

The results of the efforts were recommendations for the adoption of a precautionary approach, that made much of the methodology used in the SS/HMS Agreement and the Code of Conduct for Responsible Fisheries.³⁹⁷ An ecosystem approach was

³⁹⁴ Para. 6, Jakarta Mandate provides, in part:
New models are needed to move planners towards multiple-use, system-oriented models of management, based on precautionary approaches and ecosystem management principles.

³⁹⁵ Para. 8, Jakarta Mandate

³⁹⁶ Para. 28, SBSTTA, *Conservation and Sustainable Use of Marine and Coastal Biological Diversity: Report of the Executive Secretary*, Montreal 1-5 September 1997, Doc. No.: UNEP/CBD/SBSTTA/3/4: reprinted in <<http://www.biodiv.org/sbstta3/sbstta3-4.html>>

³⁹⁷ Paras. 34-40, SBSTTA, *Conservation and Sustainable Use of Marine and Coastal Biological Diversity: Report of the Executive Secretary*, Montreal 1-5 September 1997, Doc. No.: UNEP/CBD/ SBSTTA/3/4: reprinted in <<http://www.biodiv.org/sbstta3/sbstta3-4.html>>

still advocated, but other than indicating the use of the definition of a "healthy ecosystem" as a type of reference point for remedial action, there was no substantive discussion as to how ecosystem management could be employed.³⁹⁸ The emphasis on precaution continued with the approval of a decision at COP-4 in Bratislava in May 1998, calling for the adoption of a precautionary approach in similar terms as in the SS/HMS Agreement.³⁹⁹

FAO

The FAO has considered the notion of ecosystem management, although never in the detailed fashion it did with precaution, and the report prepared by Garcia.⁴⁰⁰ Ecosystem management was advocated in the 1984 FAO Strategy for Fisheries Management and Development.⁴⁰¹ The Strategy, which was adopted by the 147 States participating in the Conference provided:

Owing to the need to better understand the natural fluctuations of fish stocks and the relationship between these fluctuations and environmental factors, the focus of management should be shifted towards entire ecosystems using

³⁹⁸ "A healthy ecosystem is one whose parameters do not vary outside predetermined limits, from a predetermined level, within a given period of time.": See paras. 45-49, SBSTTA, *Conservation and Sustainable Use of Marine and Coastal Biological Diversity: Report of the Executive Secretary*, Montreal 1-5 September 1997, Doc. No.: UNEP/ CBD/SBSTTA/3/4: reprinted in <<http://www.biodiv.org/sbstta3/sbstta3-4.html>>

³⁹⁹ Para.4, Decision IV/5 of the COP, Bratislava 4-15 May 1998: reprinted in <<http://www.biodiv.org/cop4/finalrep-/decisions/5.html>>

⁴⁰⁰ See above at p.237

⁴⁰¹ See above at p.223

experience gained in the management of single stocks.⁴⁰²

The limitations of such an approach were implicitly recognised by the FAO in 1992, in its consideration of appropriate reference points for species management. It was noted that more effort needed to be put into examine the use of other reference points, based on economic, multispecies and ecosystem management strategies, but that for the time being maximum sustainable yield would provide a valid reference point.⁴⁰³

Nevertheless, in the post-UNCED environment, a number of subsequent FAO-sponsored instruments have explicitly encouraged States to look to the preservation of ecosystems. Article 6 of the Code of Conduct for Responsible Fisheries, in part, provides:

6.1 States and users of living aquatic resources should conserve aquatic ecosystems. The right to fish carries with it the obligation to do so in a responsible manner so as to ensure effective conservation and management of the living aquatic resources.

6.2....Management measures should not only ensure the conservation of target species but also of species belonging to the same ecosystem or associated with or dependant upon the target species.⁴⁰⁴

In addition the Code urges States to utilise data concerning the ecosystem in

⁴⁰² Article 14(iii), Strategy for Fisheries for Fisheries Management and Development

⁴⁰³ FAO, *Report of the Technical Consultation on High Seas Fishing*, (Rome: FAO, 1992), Rome 7-15 September 1992, Fisheries Report No.484, p.8

⁴⁰⁴ See also para. 7.2.2(d), Code of Conduct for Responsible Fisheries

decision-making, to improve the quality of such data⁴⁰⁵, and to utilise fishing techniques and practices that minimise the impact on the ecosystem through the catch of non-target species.⁴⁰⁶ Similarly, the Kyoto Declaration and Plan of Action on the Sustainable Contribution of Fisheries to Food Security calls on States to base strategies and policies for resource management and utilization upon, *inter alia*, the maintenance of ecological systems.⁴⁰⁷

Straddling and Highly Migratory Stocks Agreement

Ecosystem management is present within the SS/HMS Agreement, although the references to it are by no means as extensive as those dealing with precaution.⁴⁰⁸

Ecosystem management appears within the exposition of general principles contained in Article 5. Articles 5(d) and 5(e) provide:

- (d) assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks;
- (e) adopt, where necessary, conservation and management measures for species belonging to the same ecosystem or associated with or dependent upon the target stocks, with a view to maintaining or restoring populations of such species above levels at which their reproduction may be seriously

⁴⁰⁵ Para 6.4, Code of Conduct for Responsible Fisheries

⁴⁰⁶ Para. 6.6, Code of Conduct for Responsible Fisheries

⁴⁰⁷ Principle 9, Kyoto Declaration

⁴⁰⁸ Support for ecosystem management was periodically raised during the negotiation of the SS/HMS Agreement: see statement made by the Conference Chairman at the opening of the fourth session of the Conference: UN Doc. A/Conf.164/ 21, 17 August 1994: reprinted (1994) 10 *International Organizations and the Law of the Sea Documentary Yearbook* p.322 at pp.322-323; see also Hayashi, *supra* note 102, p.35

threatened;

Other less direct references to ecosystem management can also be located⁴⁰⁹, including in respect of the compatibility of conservation and management measures under Article 7⁴¹⁰, and even in respect of the precautionary approach. While touched upon, there is no attempt in the Agreement to expand upon the nature of ecosystem management, or to provide guidance as to its practical implementation.

The Law of the Sea Convention itself also contains references to what Belsky suggests is an ecosystem approach. He infers a requirement for an ecosystem-based management system by the reference among the relevant factors to be taken into account as to consider environmental impacts upon habitat⁴¹¹ and the interrelationships of species.⁴¹² However, while these references certainly indicate the beginnings of such a model, it is difficult to reconcile an ecosystem approach

⁴⁰⁹ On this point see Tahindro, *supra* note 292, p.7; Davies & Redgwell, *supra* note 269, p.263; T.D. Smith, "United States Practice and the Bering Sea: Is it Consistent with a Norm of Ecosystem Management?" (1995) 1 *Ocean and Coastal Law Journal* p.141 at pp.150-155; de Fontaubert, *supra* note 234, p.86

⁴¹⁰ See Article 7(2)(d), SS/HMS Agreement

⁴¹¹ Article 194(5) Law of the Sea Convention provides:
The measures taken in accordance with this Part [ie. the protection of the marine environment] shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine environment.

⁴¹² See Articles 61(3) and (4), and 119 Law of the Sea Convention; Belsky, *supra* note 369, p.119

with the Convention's emphasis on maximising fishery yield. An ecosystem approach, by its very nature, would require decision-makers to ensure that the biological system remained in a state of balance. This aim will sometimes prevent the maximum yield of a particular stock, as an unbalanced system may see an over-abundance of the commercially sought species. For example, the removal of competing predators from the system, and replacing their effort with human exploitation, would be inconsistent with ecosystem management, yet would produce a higher yield.

Ecosystem Management as Custom

Ecosystem management may also be emerging as a norm of customary international law, and much of what was discussed in the context of precaution in that regard is relevant here. Certainly, it is present in the same documents: the SS/HMS Agreement; the Code of Conduct for Responsible Fisheries; and Agenda 21. In addition to these, the notion of ecosystem management is contained within the Biodiversity Convention. This is certainly a potent element in any case for arguing that ecosystem management has become custom, as the level of international commitment to the Biodiversity Convention is substantial. As at 15 January 1999, 175 States had ratified the Biodiversity Convention, in excess of the number of parties to the Law of the Sea Convention.

While these references to ecosystem management are encouraging, they can be

distinguished from references to precaution in the same documents in a most significant way. Whereas the most recent calls for a precautionary approach have been accompanied by more detailed expositions on exactly how the approach can be implemented, there are no corresponding expositions in respect of ecosystem management. This is most notable in the outcomes from the Biodiversity Convention, where, even though there has been explicit approval of the adoption of an ecosystem approach, little progress has been made in the identification of how such an approach should be implemented, beyond general calls to increase scientific data gathering.⁴¹³ This suggests that the precautionary approach has advanced further towards becoming a norm of custom than ecosystem management, simply because the international community is much closer to developing a uniform methodology of its application. Uniform application by States of precaution will greatly accelerate recognition of it as custom, whereas a lack of a similar standard for ecosystem management will necessarily retard this process.

This is emphasised by the fact that, with the exception of the Biodiversity Convention, ecosystem management draws its foundations from the same international instruments as the precautionary approach. If it cannot be said with

⁴¹³ This issue was noted as one where progress needed to be made by Garcia in 1994: Garcia, *supra* note 8, pp.12-13; The potential problems with lack of data in the context of the Biodiversity Convention have been flagged by Solow and Broadus: A.R. Solow and J.M. Broadus, "Issues in the Measurement of Biological Diversity" (1995) 28 *Vanderbilt Journal of Transnational Law* p.695 at pp.700-701

certainly that these instruments have crystallised custom for one, it must follow it is equally premature that the other represents custom. The impact of the Biodiversity Convention should also be limited. As Freestone notes, the negotiation of that Convention was not intended to closely address marine issues, and its focus was more driven by development and intellectual property issues rather than those affecting fisheries.⁴¹⁴ It may be unwise to manipulate custom through use of a Convention not designed to deal with the law of the sea, when a series of other instruments negotiated with that very purpose in mind do exist.

There has also been some international unease at the practical utility of an ecosystem approach to marine living resource management. During the negotiation of the SS/HMS Agreement, a number of delegates expressed the view that while ecosystem management might be desirable, it may be neither practical or attainable.⁴¹⁵ Similar concerns can be used to explain the removal of references to "associated ecosystems" from the draft Code of Conduct for Responsible Fisheries provision concerning new or exploratory fisheries.⁴¹⁶ Some scientists

⁴¹⁴ D. Freestone, "The Conservation of Marine Ecosystems Under International Law" in M. Bowman and C. Redgwell (eds), *International Law and the Conservation of Biological Diversity*, (London: Kluwer Law, 1996) p.91 at pp.106-107

⁴¹⁵ See (1994) 7 *Earth Negotiations Bulletin*: <<http://www.mbnet.mb.ca/linkage/vol07/0730024e.html>>. This took place during 14-31 March 1994 session of the Conference.

⁴¹⁶ The phrase was removed at the request of Japan. See *Written Comments on the Principles of the Code of Conduct for Responsible Fisheries dealing with High Seas Issues*, FAO Doc. No.: COFI/95/Inf.95, December 1994: reprinted

have expressed concerns as to whether a system based on ecosystem can be effectively implemented, simply by virtue of the complexity of the task.⁴¹⁷ Since it would be most irregular to compel States to comply with a norm that was unattainable, until these fears can be effectively dispelled, ecosystem management cannot be a norm of custom at this point in time.

Co-Management

Introduction

In Chapter 5, reference is made to the wholesale devastation wrought upon the seal, whale and sea-lion populations during the 19th and first half of the 20th Century.⁴¹⁸ This tale of destruction can be contrasted with the harvesting of seals, and various species of whale⁴¹⁹, for fur, meat and other products, by the Inuit of the North American Arctic. For the Inuit, this exploitation was necessary for survival, not as a commercial venture, and over-exploitation of the kind undertaken by Europeans would have resulted not merely in the collapse of an industry, but a substantial threat to their survival in at least the long term. While the Inuit did not

in (1995) 11 *International Organizations and Law of the Sea Documentary Yearbook* p.755 at p.766

⁴¹⁷ See Lie, *supra* note 373, pp.325-326; see Appendix A, interviews conducted with researchers at the Freshwater Institute, Winnipeg, Canadian Department of Fisheries and Oceans, June 1996; see also Burke, Freeberg & Miles, *supra* note 75, p.147

⁴¹⁸ See Chapter 5 at p.384

⁴¹⁹ For example bowhead, beluga and narwhal.

have the pressure of the market compelling them to seek to maximise profit, it is clear that they certainly had the capacity to destroy a species through over-exploitation, as a result of population growth or remaining in the one area beyond the carrying capacity of the region.

To prevent this over-exploitation, it is clear the Inuit and, in the context of other regions and species, other indigenous communities, did have systems of management in place, although the nature and structure of those systems were very different to the contemporary maximum yield system. These systems are rarely codified, but consist of the aggregation of generations of practice forming a great store of traditional ecological knowledge, and are maintained through social norms and cultural reinforcement.⁴²⁰ Such systems are of more than anthropological interest, as it is clear that some have operated over a far longer period than any existing management structure, and were, by the necessity of the communities that maintained them, essentially sustainable. Given that sustainability has become a requirement of any living resource management system, an examination of these traditional management techniques is a valuable exercise.

Co-management as a mode of marine living resource management has a different

⁴²⁰ G. Osherenko, "Sharing Power with Native Users: Co-Management Regimes for Native Wildlife" *Unpublished Paper prepared for the Canadian Arctic Resources Committee* (Ottawa: CARC, 1988) p.4 [Made available during a visit to CARC by the author in July 1996]

focus than the centralised management systems considered. Rather than being grounded in the scientific bases on which management decisions are to be made, this mode of management turns upon the decision-making structure and the participants in it. Instead of leaving management as a remote, bureaucratic and technical activity, it seeks to place some level of control in the hands of communities engaged in exploiting the resources. Accordingly it is best referred to as co-operative management, or more succinctly, co-management.

Co-management is usually considered a relatively recent phenomenon, with the first operational co-management system being established with the James Bay and Northern Quebec Agreement concluded in 1975. Roberts has suggested, however, that the first true co-management arrangement applied to the Lofoten Islands off the coast of Norway and was instituted in the 19th Century. The co-management structures were introduced in 1897, and sought cooperation between the Norwegian Government and the fishermen of the Islands in the management of the cod fishery.⁴²¹ While certainly displaying elements of what would be considered co-management in the contemporary sense, the Lofoten arrangements have rarely been referred to by publicists, and their influence upon subsequent co-management regimes appears to have been marginal at best.

⁴²¹ K. Roberts, *Circumpolar Aboriginal People and Co-management Practice* (Calgary: Riley's Reproductions & Printing, 1995) p.26

Accordingly, it is most useful to chart the origins of modern co-management from the James Bay and Northern Quebec Agreement of 1975. This agreement was concluded between the Quebec Provincial Government, the Canadian Government and the Cree of James Bay and the Inuit in Northern Quebec, and was designed to provide a comprehensive regime dealing not merely with living resource management, but also with control over land and environmental impact assessment. The agreement was concluded against a background of domestic litigation in indigenous land claims before the Supreme Court of Canada and the pressure of the James Bay hydro-electric development.⁴²² Since the agreement was designed to provide a final resolution to conflict over indigenous rights in northern Quebec, and what each of the affected indigenous groups were seeking was recognition and protection of their rights to traditionally harvest living resources, an accommodation that was both final and ongoing was deemed essential.

The solution was the creation of permanent management structures that directly involved the indigenous communities affected. Groups are given complete control over harvesting within certain specified reserve areas⁴²³, while outside these areas a Hunting, Fishing and Trapping Coordinating Committee (HFTCC) was

⁴²² F. Berkes, "Co-Management and the James Bay Agreement" in E. Pinkerton (ed.), *Co-Operative Management of Local Fisheries: New Directions for Improved Management and Community Development*, (Vancouver: University of British Columbia Press, 1989) p.189 at pp.190-192

⁴²³ Category II lands.

established. The Committee consisted of representatives of federal and provincial governments, together with those of the Inuit and Cree, each with three representatives. The HFTCC was given power over the regulation of moose, caribou and black bear kills, and an advisory capacity in relation to all other hunting, fishing and trapping in the Agreement area. Native communities were to be trained in enforcement techniques, and were to be hired to undertake government enforcement of management decisions.⁴²⁴

The James Bay and Northern Quebec Agreement ushered in a sea change in the negotiation of wildlife management agreements with North American indigenous communities. Negotiation was made necessary by a spate of Supreme Court cases, in both the United States and Canada, that required the rights of indigenous peoples to be respected. Indigenous communities, empowered by these decisions, fixed upon the model of cooperation established in the James Bay and Northern Quebec Agreement, and began to agitate for similar structures.

The result was that through the 1980s, a series of co-management agreements were concluded with indigenous communities, and also extended to other non-indigenous

⁴²⁴ T.M. Swerdferger, "Cooperative Wildlife Management: A Discussion Paper" Paper prepared under contract for the Canadian Wildlife Service, 1992, pp.30-31

fishing communities.⁴²⁵ As is evident from the table in the appendix, the subject matter varied between complete ecological management and the protection of specific species to control of fisheries, forestry or all the living resources of entire regions.

This rapid flow of support for co-management founded on the judicial recognition of the rights of indigenous communities led to the principle being taken up by other communities reliant upon natural resource exploitation. In the 1980s and 1990s, North American fishing communities were perceived to be coming under increasing pressure, and the protection of fisheries by government was seen to be ineffective. Concern that government was captive to sectional interests, and that government policy had led to over-capitalisation and over-participation led many fishery-dependent communities to lobby for greater input into the management of the resources upon which their communities relied. This translated itself into promotion of the same forms of co-management sought by indigenous communities, and while the numbers of indigenous co-management regimes far exceed those

⁴²⁵ For example, Cloutier notes the gradual extension of regional fishery management councils under the *Magnuson Fishery Conservation and Management Act* in the years since that Act's inception in 1976: T.M. Cloutier, "Conflicts of Interest on Regional Fishery Management Councils: Corruption or Cooperative Management" (1996) 2 *Ocean and Coastal Law Journal* p.101 at pp.113-134. Jentoft and McCay also note moves towards increasing user participation in fisheries decision-making in Sweden, Norway, Britain, Greenland, Iceland, and Spain: S. Jentoft and B. McCay, "User Participation in Fisheries Management: Lessons Drawn from International Experiences" (1995) 19 *Marine Policy* p.227 at pp.230-232

based around non-indigenous communities, it is clear that co-management has growing support from a widening core of interests. The use of co-management also quickly spread beyond North America, often building upon older traditional structures which had been supplanted by centralised government regulation.⁴²⁶

Definition

The origins of the expression co-management are unclear, although it clearly appears to be a corruption of the phrase "cooperative management" and began to appear in North American anthropological literature in the late 1970s and 1980s.⁴²⁷ The uncertainty surrounding the genesis of the term co-management is also reflected in the inexactitude in its use by publicists. It has been used to describe a surprisingly wide range of activities and management structures, and it is therefore appropriate to indicate which definition will be used in the context of this

⁴²⁶ Sen and Raakjær Nielsen note co-management systems operating in Denmark, Norway, Malawi, Zambia, Mozambique, the Philippines and Bangladesh: S. Sen and J. Raakjær Nielsen, "Fisheries Co-Management: A Comparative Analysis" (1996) 20 *Marine Policy* p.405 at pp.409-414

⁴²⁷ The Canadian House of Commons Standing Committee on Aboriginal Affairs and Northern Development noted that the term "co-management" was first coined in the United States to describe new arrangements between state and federal agencies and aboriginal communities: Canada, *Co-management: Report of the Standing Committee on Aboriginal Affairs and Northern Development*, (Ottawa: Canada Communications Group, 1995) p.3; Winn states the earliest references to the term he could locate were from 1982: S.N. Winn, *Co-Management under the Inuvialuit Final Agreement: Bridging the Gap between Indigenous Self-Regulation and State-Based Resource Management in the Western Arctic?* (MA Thesis, Carleton University, 1991) p.89

work, and why the definition selected is the most appropriate.

A number of publicists have put forward varying definitions of co-management. Evelyn Pinkerton, who has undertaken much of the recent work on co-management in North America, uses a particularly wide definition, to ensure coverage of the full range of management systems that have been concluded. Her starting point defines co-management as a multi-party administrative arrangement in which decision-making powers on the level and allocation of resource exploitation are shared between government agencies and community bodies.⁴²⁸

In a definition focusing on the cooperative element of the concept, McCay defines co-management to refer to cooperation in the management of the affected resource. Her definition is unusual in that she extends it not merely to include cooperation between communities, stakeholders and government, but also between scientists, bureaucrats and fishermen. This cooperation may be institutionalised, or *ad hoc*, and can include all management activities extending from that required by statute

⁴²⁸ E. Pinkerton, "Introduction: Attaining Better Fisheries Management through Co-Management - Prospects, Problems and Propositions" in E. Pinkerton (ed.), *Co-Operative Management of Local Fisheries: New Directions for Improved Management and Community Development*, (Vancouver: University of British Columbia Press, 1989) p.3 at p.4; see also Department of Indian Affairs and Northern Development, *Understanding Co-management as It Exists in the Department of Indian Affairs and Northern Development: The First Step*, (Ottawa: DIAND, 1993) p.4

right through to voluntary participation and "grassroots activism".⁴²⁹

Osherenko takes a more conventional view, identifying a number of salient elements. She defines a co-management regime as one which applies to the resources of a particular region and sets out: (1) the rights and obligations of interested individuals in respect of those resources; (2) a collection of rules indicating appropriate action in certain circumstances; and (3) procedure for the making of collective decisions affecting the interests of government, user groups and individuals. She also makes the significant point that government need not transmit legal responsibility for management to a collective body for a co-management regime to exist, as in practice the cooperation of interested individuals and user groups is necessary to ensure the effective operation of the system.⁴³⁰ While the point is well made, it does assume that a community whose wishes are overruled by government, after having expressed them during the consultation process, will necessarily reject the validity of decisions made. It also assumes that in a multi-community region where a co-management regime applies there will always be agreement between the various communities, which does not always

⁴²⁹ B.J. McCay, "Co-Management of a Clam Revitalization Project: The New Jersey 'Spawner Sanctuary' Programme" in E. Pinkerton, *Co-Operative Management of Local Fisheries: New Directions for Improved Management and Community Development* (Vancouver: University of British Columbia Press, 1989) p.103 at pp.103-104

⁴³⁰ Osherenko, *supra* note 420, p.13

follow.⁴³¹

Kearney, writing in the context of community input into the management of the lobster fisheries in Southwest Nova Scotia, has fixed upon a threefold definition of co-management. He notes the term has been applied to management systems that typically fall into one of three categories: systematic community consultation by government, where government retains sole decision-making power; community participation in the monitoring and enforcement of regulations, where decision-making is still essentially retained by government; and comprehensive participation in the decision-making, monitoring and enforcement processes by the relevant stakeholders within a community.⁴³²

⁴³¹ As in the case of the allocation of beluga whale quotas in the Eastern Canadian Arctic in 1990. In spite of the Minister adopting the recommendations of the Nunavut Wildlife Management Advisory Board, a co-management body with Inuit representation, 3 Inuit communities were hostile to the decision. Quotas were ignored, and the likely catch exceeded the quota by over 300%: P.R. Richard & D.G. Pike, "Small Whale Co-management in the Eastern Canadian Arctic: A Case History and Analysis" (1993) 46 *Arctic* p.138 at p.141. Similar difficulties occurred with the allocation of a bowhead whale to a community in the Eastern Canadian Arctic in 1995. There was substantial disagreement between the different communities over the selection of one community, but support for the co-management process: Discussions with P. Richard and R. Mosherenko, Department of Fisheries and Oceans, Freshwater Institute, Winnipeg, 25 June 1996.

⁴³² J.F. Kearney, "Co-Management or Co-Option? The Ambiguities of Lobster Fishery Management in Southwest Nova Scotia" in E. Pinkerton, *Co-Operative Management of Local Fisheries: New Directions for Improved Management and Community Development*, (Vancouver: University of British Columbia Press, 1989) p.85 at pp.85-87

Pinkerton and Weinstein also note a gradation in definitions of co-management, and prefer to place co-management on a continuum of systems, somewhere between government management and complete community control and management, on a ten point scale indicating levels of government involvement.⁴³³ While the mechanics of developing a continuum are potentially problematic⁴³⁴, the concept is certainly useful in dealing with the width of definitions posed by different publicists. In a distinct but related approach, Berkes, George and Preston, describe co-management as the combination of State-level and local-level management. The former describes government regulation, which is typically centralised, based upon enforcement by authority substantiated by law and regulation, and where decisions are based upon scientific data. The latter is decentralised, informal, enforced through social pressure and where decisions are based upon cultural tradition and knowledge acquired over an extended period.⁴³⁵

In what is the most succinct of the definitions considered, Roberts defines co-

⁴³³ E. Pinkerton & M. Weinstein, *Fisheries that Work: Sustainability through Community-Based Management*, (Vancouver: David Suzuki Foundation, 1995) p.11

⁴³⁴ Pinkerton and Weinstein themselves note that the use of a continuum appears to presuppose that there is necessarily one single management function within any management system. They note that this is not always the case: Pinkerton & Weinstein, *supra* note 433, p.11

⁴³⁵ F. Berkes, P. George & R. Preston, "Co-Management: The Evolution of the Theory and Practice of Joint Administration of Living Resources" *TASO Research Report, Second Series, No.1* (Hamilton: Program for Technology Assessment in Subarctic Ontario, McMaster University, 1991) pp.4-6

management as "a joint management process that brings together local resource users and government agencies to share the management responsibility for local or regional resources".⁴³⁶ This neatly expresses the concepts, without undue emendation to take into account the multifarious collection of regimes to which the term has been ascribed. The key proposition is that there is a blending of two very different management schemes.⁴³⁷

From these definitions, a number of propositions can be distilled. Firstly, co-management is directed towards the management of living resources, most typically marine living resources, although they can be directed towards terrestrial flora and fauna. Co-management regimes rarely refer to non-living resource exploitation, and where such references are made, they rarely confer rights upon community bodies in respect of such exploitation. A good example of this can be drawn from the Inuvialuit Final Agreement (IFA) concluded in 1984 as a comprehensive land claim over the Western Canadian Arctic.⁴³⁸ As the IFA was intended to be comprehensive, it does deal with mineral rights, but essentially to delimit the areas where the Inuvialuit have retained such rights and where they have been excluded. Provision is made for review of the environmental impact of non-living resource

⁴³⁶ Roberts, *supra* note 421, p.1

⁴³⁷ This blending of systems is also integral to the definition of co-management advanced by Swerdferger: Swerdferger, *supra* note 424, pp.4-5

⁴³⁸ Reprinted in Department of Indian and Northern Affairs, *The Western Arctic Claim: The Inuvialuit Final Agreement*, (Ottawa: DIAND, 1984)

development, but the procedures for such review ensure decision-making power is retained by government agencies. There is non-majority Inuvialuit representation in the review process, but the reviews that have taken place have largely avoided public consultation, or have been directed to agencies outside the IFA, bypassing it altogether.⁴³⁹

Secondly, there is a synthesis of types of management within a co-management regime. While co-management seeks to involve community or stakeholders in the decision-making process, albeit in varying degrees, this consultation is designed to do more than simply allow interested individuals to contribute their opinions or reactions. Co-management systems seek to make use of the background, experience and knowledge of communities and individuals, to improve the quality of management.⁴⁴⁰ In the case of indigenous communities, this store of experience, usually referred to as traditional ecological knowledge, is quite substantial but is often largely unwritten, and passed on through the maintenance of traditional activities.⁴⁴¹ It is important to note initially that its effective incorporation into

⁴³⁹ Winn, *supra* note 427, pp.157-161

⁴⁴⁰ R.S. Pomeroy and F. Berkes, "Two to Tango: the Role of Government in Fisheries Co-Management" (1997) 21 *Marine Policy* p.465 at p.467

⁴⁴¹ W. LaDuke, "Traditional Ecological Knowledge and Environmental Futures" (1994) 5 *Colorado Journal of International Environmental Law and Policy* p.127 at p.127; R. Tsosie, "Tribal Environmental Policy in an Era of Self-Determination: The Role of Ethics, Economics, and Traditional Ecological Knowledge" (1996) 21 *Vermont Law Review* p.225 at pp.272-274; N. Islam, *Rethinking the Law of Non-Navigational Uses of International Watercourses: Options for Regional Regime Building in Asia*, (JSD Thesis, Dalhousie

the management process requires the maintenance and promotion of traditional systems of management, rather than trying to graft these to a western style central government decision-making body.

Thirdly, co-management, in the context of this work, is about resources. While it is possible for an agreement that deals with co-management to also deal with issues affecting the transfer of political authority, such elements will not be dealt with here. Certainly, the vast majority of co-management arrangements do not deal with the wider political aspirations of the communities they relate to, and this would be an inappropriate place to canvas those issues.⁴⁴² Finally and most critically, co-management involves the division of administrative responsibility in the management of resources, between a central governmental body, and a necessarily more local community, stakeholder group or collection of affected individuals. The manner of this division of responsibility, and the procedures used in the making of management decisions will vary enormously, but nevertheless will be present in all co-management regimes.

University, 1997) pp.277-280

⁴⁴² For example, the creation of the territory of Nunavut out of the Northwest Territories in Canada in April 1999 includes co-management of living resources in the territory. The grant of some political autonomy is atypical for a co-management arrangement. Wider issues of self-determination of communities, particularly indigenous communities are separate from questions of appropriate management of marine living resources, and need not be explored here.

The most important element of any co-management regime is the manner in which cooperative action takes place. While the interface between government regulators and community is critical in distinguishing co-management from other forms of management, it is important to note that no specific formula for that interface exists. Pinkerton has noted that a range of levels of participation are possible, providing varying degrees of input to the various participants.⁴⁴³ These can be dealt with in a continuum of stakeholder involvement, ranging from extremely limited participation through to complete control.⁴⁴⁴ While a valid definition of co-management limits its content to matters where there is a balance of input between the State and the communities and/or individuals, it is more useful to take an expansive definition, rather than arbitrarily excluding certain management systems. There are examples of regimes at different points along a continuum of participation. This commences with those regimes where decision-making power over resource identification and management rests with government, however the decision-making apparatus requires government to take into account submissions from communities or other stakeholders in resource management decisions.⁴⁴⁵

⁴⁴³ Pinkerton, *supra* note 428, pp.5-20

⁴⁴⁴ Although preferring to structure his discussion in terms of balances between "cooperative" and "corporate" governance, Townsend also observes the existence of a continuum of co-management structures: R.E. Townsend, "Fisheries Self-Governance: Corporate or Cooperative Structures" (1995) 19 *Marine Policy* p.39 at pp.43-44. See Sen & Raakjær Nielsen, *supra* note 426, pp.406-407

⁴⁴⁵ These submissions are typically taken at public meetings, or by means of public calls for interested individuals to transmit their concerns. Such systems are not strictly co-operative, as decision-makers, while obliged to

Examples of this type of structure are becoming increasingly common, being typically employed in large centrally managed fisheries, such as the groundfish fisheries of Atlantic Canada.⁴⁴⁶ Moving through the continuum of greater involvement, decision-making procedures may require more than mere consultation of community groups. Communities may be guaranteed involvement through membership of advisory bodies, with membership drawn from government and community stakeholders, typically in equal numbers. They are designed to ensure that all interested parties have a place within the process, so if a consensus within the advisory body can be reached, it will have the support of all those affected by it.⁴⁴⁷ The Inuvialuit Final Agreement is an example of this type of co-management system, as are the provisions in relation to the Torres Strait Protected Zone between Australia and Papua New Guinea.⁴⁴⁸ Finally, control can be completely vested in the community, but be enforceable against other individuals through the force of law and the assistance of government. Government

take account of consultations with community or participant groups, are not obliged to act upon these consultations.

⁴⁴⁶ Kearney, *supra* note 432, p.86

⁴⁴⁷ The role of such advisory bodies is not to make management decisions, but rather to suggest appropriate courses of action to decision-makers. Final authority will remain with government, but the decision-maker will be obliged to take into account the advisory body's suggested course of action, and give reasons in the event their suggestion is rejected. This has the advantage of compelling consideration of the point of the community stakeholders, insofar as their view is manifested in the advisory body.

⁴⁴⁸ Articles 10 - 16, Torres Strait Treaty; see also S.B. Kaye, *The Torres Strait*, (The Hague: Martinus Nijhoff, 1997) pp.101-104

involvement in management extends only to providing legitimacy and support to the decisions made by the community group. As the most extreme form of co-management structure, examples of complete community control are rare. In Washington state in the United States Pacific Northwest, various court decisions were responsible for vesting fifty percent of the salmon fisheries in various treaty Indian groups.⁴⁴⁹

Co-Management and Fisheries Management

As a co-management system is denoted by a different approach to decision-making rather than principles of management, in theory it could operate in the context of a maximum yield approach, as opposed to a precautionary/ecosystem-based approach. In practice, this is unlikely, and co-management systems are closely associated with ecosystem-based management. There are a number of reasons for this being the case.

Firstly, co-management systems are designed to involve community stakeholders in the management of stocks, and to make use of the knowledge those stakeholders have of the resource. While not based on scientific observation, such knowledge

⁴⁴⁹ For example see *Puget Sound Gillnetters Association v United States District Court* 573 F.2d 1123 (1978) (US Court of Appeals, 9th Circuit); see also N. Dale, "Getting to Co-Management: Social Learning in the Redesign of Fisheries Management" in E. Pinkerton (ed.), *Co-Operative Management of Local Fisheries: New Directions for Improved Management and Community Development* (Vancouver: University of British Columbia Press, 1989) p.49 at pp.52-54

will generally be drawn from observation of the ecosystem over extended periods. A single community member will generally be unable to provide a reasonable assessment of the biomass of a stock at a given point in time, but may be in a far better position than a scientist to provide data on the inter-relationships within the ecosystem, and the relative health and location of the stock as a whole in a given year. Secondly, any informal system of management that has operated for an extended period without causing disruption or collapse within the ecosystem must be inherently stable, and while its participants may not be consciously aware that their management is ecosystem-based, in fact observation of the ecosystem and reacting to that observation underlies most traditional management systems.

Co-Management and International Law

While international law does not preclude the formation of co-management structures, it is clear from the above discussion that co-management has essentially been the product of domestic legislative endeavour rather than international cooperation. Co-management systems by and large do not exist in international law. This is in part because co-management has emerged since the extension of zones of national jurisdiction, and co-management arrangements tend to involve small communities and inshore fisheries. Consequently, there have been domestic reorganizations of fishing regulation by States, not requiring the participation and consultation of other States. In addition, few fishing communities lie in areas straddling national boundaries, again precluding the need for co-management at the

international level. The few examples of international co-management that do exist are small-scale and establish advisory bodies only.⁴⁵⁰

⁴⁵⁰ For example, the Torres Strait Treaty, the Joint Inuvialuit/Alaska Beluga Management Committee and the Memorandum of Understanding between Canada and Denmark (on behalf of Greenland) concerning narwhal and beluga, establishing the Canada/Greenland Joint Commission on Narwhal and Beluga. Unpublished material on both the Committee and the Commission were provided by the Inuvialuit Joint Secretariat on a visit by the author to Inuvik in June 1996, and by the Canadian Department of Fisheries and Oceans on visits by the author to Ottawa in June 1995 and July 1996 respectively. See also D. Goodman, "Land Claim Agreements and the Management of Whaling in the Canadian Arctic", presented at the International Symposium on Peoples and Cultures of the North, Abashiri, Japan, 1996: <<http://www.highnorth.no/la-cl-ag.htm>>

PART THREE

MARINE LIVING RESOURCE MANAGEMENT SYSTEMS IN PRACTICE: ARCTIC AND ANTARCTIC REGIMES

Introduction

Having considered the content of international law dealing with living resource management, it is now necessary to turn to the application of that law in practice. As indicated in the first part of this work, the assessment of the various management systems will be accomplished through the examination of resource regimes present in the polar regions. The two international conventions to be considered are the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea¹, often referred to simply as the Doughnut Hole Convention, and the Convention for the Conservation of Antarctic Marine Living Resources², usually abbreviated to its acronym CCAMLR.

¹ *Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, done at Washington DC, 16 June 1994, entered into force 8 December 1995: reprinted in 34 ILM 67 (1995) [hereafter cited as the Doughnut Hole Convention]

² *Convention for the Conservation of Antarctic Marine Living Resources*, done at Canberra 20 May 1980, entered into force 7 April 1981: UKTS No.48 (1982) [hereafter referred to as CCAMLR]

Both of these conventions have a number of advantages in their discussion here. First, both provide excellent examples of the application of the differing approaches to management considered in Chapters 2 and 3. Indeed, CCAMLR represents the only example of a precautionary/ecosystem approach in a marine living resource management convention that has been operating for any significant length of time. The Doughnut Hole Convention and the events leading up to its formation are also useful, in that they demonstrate not merely the organization of that Convention itself, but also of the elements of the Law of the Sea Convention dealing with resource management and cooperation. Second, both the pollock crisis in the Bering Sea and CCAMLR have existed for more than a decade, and therefore provide a valuable focus of comparison not available elsewhere. Third, the comparison of regimes with analogous ecologies, as discussed in Chapter 1, also makes the comparison of these regimes a worthwhile endeavour.

Chapter 4 will examine the Bering Sea Doughnut Hole Convention and its antecedents, while Chapter 5 will consider CCAMLR. The final chapter will then draw together the previous analyses, in the manner indicated in the first chapter of this study, to critically assess the effectiveness of marine living resource management systems based on the different approaches. Chapter 6 will also consider the extent to which international law can react to perceived inadequacies in the present systems, and whether new approaches are likely to emerge given these deficiencies.

CHAPTER FOUR

MAXIMUM YIELD FISHERY: BERING SEA DOUGHNUT

HOLE CONVENTION¹

Introduction

The Bering Sea is part of the North Pacific Ocean, delimited by the coasts of Alaska in the east, Siberia in the west, and in the south by the Aleutian Islands. It is linked to the Arctic Ocean by the narrow Bering Strait, and has an area of approximately 2.3 million square kilometres.² A number of publicists have identified it as a semi-enclosed sea³, within the definition encapsulated in Part IX

¹ Portions of this chapter have appeared previously in the following publication:

S.B. Kaye, "Legal Approaches to Polar Fisheries Regimes: A Comparative Analysis of the Convention for the Conservation of Antarctic Marine Living Resources and the Bering Sea Doughnut Hole Convention" (1995) 26 *California Western International Law Journal* p.75

² The table provided by Miles et al provides not merely area, but also depth and other characteristics: E. Miles, S. Gibbs, D. Fluharty, C. Dawson and D. Teeter, *The Management of Marine Regions: The North Pacific*, (Berkeley: University of California Press, 1982) p.19

³ For example see L.M. Alexander, "Regionalism and the Law of the Sea: The Case of Semi-Enclosed Seas" (1974) 2 *Ocean Development and International Law* (1974) p.151 at p.158 and p.168; L. Mioviski, "Solutions in the Convention on the Law of the Sea to the Problem of Overfishing in the Central Bering Sea: Analysis of the Convention, Highlighting the

of the 1982 Law of the Sea Convention⁴, and there does not seem to be any serious dispute with such a conclusion.⁵

The Bering Sea is marked by a large continental shelf covering almost half the area of the sea, and extending from the east between 500 and 800 kilometres wide.⁶ The northern portions of the sea become ice-covered during the winter, but in the summer the ice retreats beyond the Bering Strait into the Arctic Ocean. The region supports a range of marine fauna, a proportion of which are commercially harvested. Such species include squid, crabs, shrimp, scallops, pollock, cod,

Provisions Concerning Fisheries and Enclosed and Semi-Enclosed Seas" (1989) 26 *San Diego Law Review* p.525; L.M. Alexander, "The Management of Enclosed and Semi-Enclosed Seas" in P. Fabbri (ed.), *Ocean Management in Global Change*, (London: Elsevier, 1992) p.539 at p.542

- ⁴ Article 122 Law of the Sea Convention provides:
For the purposes of this Convention, "enclosed or semi-enclosed sea" means a gulf, basin or sea surrounded by two or more States and connected to another sea or the ocean by a narrow outlet or consisting entirely or primarily of the territorial seas or exclusive economic zones of two or more coastal States.
- ⁵ Interestingly, the use of the semi-enclosed sea provisions by both the United States and Soviet Union with regard to the Bering Sea was also rejected by both States as being detrimental to their interests elsewhere in the world, particularly with regard to navigation: see E.L. Miles and W.T. Burke, "Pressures on the United Nations Convention on the Law of the Sea of 1982 Arising from New Fisheries Conflicts: The Problem of Straddling Stocks" (1989) 20 *Ocean Development and International Law* p.343 at p.349; on this point see also A.A. Saguirian, "Russia and Some Pending Law of the Sea Issues in the North Pacific: Controversies over High Seas Fisheries Regulation and Delimitation of Marine Spaces" (1992) 23 *Ocean Development and International Law* p.1 at p.6
- ⁶ National Research Council, *The Bering Sea Ecosystem*, (Washington DC: National Academy Press, 1996) p.28

sablefish, atka mackerel, halibut, turbot, perch, Pacific salmon and sole. The Bering Sea also supports many varieties of sea birds and marine mammals, including eight species of baleen whales, eight species of toothed whale and dolphin, and eight species of pinniped. The Steller sea cow is now extinct, while the Steller sea lion is presently under threat.⁷

In the last 25 years, the most significant commercial species fished in the Bering Sea has been pollock, and in 1993 the United States National Research Council was of the view that pollock were the greatest single-species biomass in the Bering Sea.⁸ Pollock are found throughout the entire Aleutian Basin and the continental shelves on both sides of the Bering Sea. While there is some debate over the range and genetic differences between pollock throughout the Bering Sea, it appears that an area north of Bogoslof Island in the Aleutians is an important spawning ground for stocks in both the eastern and central areas of the sea.⁹

The history of the Bering Sea pollock fishery has had three distinct phases. The first corresponds with the bulk of the fishery occurring in high seas areas, prior to the assertion of national jurisdiction over EEZs or extended fishing zones. This phase runs from the beginnings of commercial fishing for pollock up until 1984,

⁷ See generally National Research Council, *supra* note 6, *passim*

⁸ An estimate of 50 percent of the Bering Sea groundfish biomass was posited: National Research Council, *supra* note 6, p.80

⁹ National Research Council, *supra* note 6, p.81

when the United States began to implement a policy of exclusion of foreign fishing vessels from its EEZ. The second phase corresponds with the initiation of substantial fishing effort in the central portion of the Bering Sea by vessels excluded from fishing in the US or Soviet EEZs. This phase runs from 1984 up to the acceptance of a voluntary moratorium on fishing in the central Bering Sea in 1992. The third phase is marked by the agreement of all the participant fishing States in the Bering Sea to participate in a convention to regulate the doughnut hole fishery.

This chapter will mirror the three phases, as each gives useful insights into the application of the law of the sea to high seas fisheries in each period. This is particularly true of the second and third phases, as the former provides an opportunity to assess the operation of the Law of the Sea Convention's provisions for dealing with high seas straddling fish stocks, while the latter provides an example of one of the most recent international fisheries conventions presently in operation. Accordingly, the Bering Sea provides a recent example of management of a high seas resource under the Law of the Sea Convention, both within a regional arrangement and prior to that arrangement's conclusion, and hence is worthy of close examination.

Pollock Fishery of the Bering Sea Prior to 1984

As a stock of interest to commercial fishers, the pollock fishery of the Bering Sea is

a relatively recent one. While those fishing for salmon prior to the 1960s were certainly aware of the large volume of pollock present in the Bering Sea, the stock was perceived as being of little or no economic value, and was not seriously exploited. However, in 1961 the Japanese developed technology to produce frozen minced fish, suitable to be sold as surimi. Pollock was ideal for such processing, and within two years, exploitation rose to over half a million metric tonnes, and to over 3 million metric tonnes a decade later.¹⁰

Prior to UNCLOS III, the waters of the Bering Sea were largely high seas. The United States maintained a three nautical mile territorial sea, while the Soviet Union claimed a twelve mile belt of territorial sea.¹¹ The pollock fishery was therefore mostly high seas, and was the scene of significant activity by a number of DWFNs, most notably Japan and South Korea. Efforts to bring pollock and other groundfish stocks under international management (as had been done for salmon) under the

¹⁰ See K. Yonezawa, "Japanese North Pacific Fishery at the Crossroads" in J.P. Craven, J. Schneider and C. Stimson (eds), *The International Implications of Extended Maritime Jurisdiction in the Pacific*, (Honolulu: Law of the Sea Institute, 1989) p.183 at p.183

¹¹ Tsarist Russia claimed a 12 mile territorial sea in 1912, and this claim was expressly reasserted by the USSR in 1927: see C.J. Colombos, *The International Law of the Sea*, (London: Longman, 1972) p.100. The United States asserted a 9 mile fishing zone beyond its three mile territorial sea in 1966: see R.M. Logan, *Canada, the United States, and the Third Law of the Sea Convention*, (Montreal: C.D. Howe Research Institute, 1974) p.34

North Pacific High Seas Fisheries Convention¹² were unsuccessful, but fishing did not reach levels sufficient to collapse the fishery.¹³

The growing acceptance of zones of extended jurisdiction at UNCLOS III initially had no impact upon the Bering Sea pollock fisheries. Although the United States had proclaimed an exclusive fishing zone under the Magnuson Act in 1977¹⁴, the pollock fishery remained open to foreign fishing vessels. For a variety of reasons, American fishing vessels did not participate in the pollock fishery, and as a result the United States chose to authorise the exploitation of the fishery by foreign

¹² *International Convention between the United States of America, Canada and Japan for the High Seas Fisheries of the North Pacific Ocean*, done at Tokyo 9 May 1952, entered into force 12 June 1953: 205 UNTS 65 [hereafter cited as INPFC Convention]. The INPFC Convention was replaced by the *Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean*, done at Moscow on 11 February 1992, entered into force 16 February 1993: reprinted <<http://www.npafc.org/convention.html>>. The INPFC itself formally ceased operations on 21 February 1993.

¹³ Balton notes that both the United States and the Soviet Union were opposed to the inclusion of the burgeoning pollock fishery under INPFC because such an arrangement would have compelled the participation of Canada in the management of the stock. Canada was not an active participant in the fishery at any stage of events: D.A. Balton, "The Bering Sea Doughnut Hole Convention: Regional Solution Global Implications" in O.S. Stokke (ed.), *Governing High Seas Fisheries: Regime Interplay and Straddling Stocks Management*, (draft provided by editor - publication pending 1999) pp.12-13. The INPFC Convention was effectively terminated by the withdrawal of the United States in February 1993. The Convention installed to replace it only deals with salmon: J.L. Canfield, "Recent Developments in Bering Sea Fisheries Conservation and Management" (1993) 24 *Ocean Development and International Law* p.257 at pp.266-267

¹⁴ *Fisheries Conservation and Management Act* of 1976 (USA) came into force on 1 March 1977: 16 USC 1813

vessels. Such vessels took close to 1 million metric tons of pollock each year from the Bering Sea in the late 1970s and early 1980s.¹⁵

Events on the western side of the Bering Sea mirrored those in the east. The USSR also proclaimed an extended fishing zone, coincidentally with effect from the same day as the new American zone. Unlike the Americans, Soviet vessels were actively fishing for pollock, and took sizeable quantities of the fish from the western Bering Sea in waters subject to their jurisdiction.¹⁶ However, the USSR was also prepared to permit foreign access to these waters, concluding a reciprocal fishing agreement with Japan in 1977.¹⁷ However, through the 1980s, the allocations to the Japanese fishing fleet were gradually reduced, forcing the Japanese government to order the scrapping of vessels, and the displacement of others to high seas

¹⁵ The Bering Sea TALFF allocations for pollock between 1977 and 1979 are produced in Miles, Gibbs, Fluharty, Dawson & Teeter, *supra* note 2, p.159

¹⁶ For example, the entire domestic catch of all species for the USSR north west Pacific EEZ was 2.4 million metric tonnes. In 1985, 3.35 million tonnes of pollock alone were taken by the Soviet fleet in the same area: V.M. Kaczynski, "200 Mile EEZ and Soviet Fisheries in the North Pacific Ocean: An Economic Assessment" in J.P. Craven, J. Schneider and C. Stimson (eds), *The International Implications of Extended Maritime Jurisdiction in the Pacific*, (Honolulu: Law of the Sea Institute, 1989) p.193 at pp.197-199

¹⁷ See Choon-ho Park, "Implications of Extended Coastal Jurisdiction for the Management and Development of World Fisheries: The Northwest Pacific Region" in E.L. Miles (ed.), *Management of World Fisheries: Implications of Extended Coastal State Jurisdiction*, (Seattle: University of Washington Press, 1989) p.174 at p.176-177; see also M. Hayashi, "Fisheries in the North Pacific: Japan at a Turning Point" (1991) 22 *Ocean Development and International Law* p.343 at p.350

fisheries, such as the doughnut hole.¹⁸

Collapse of the High Seas Pollock Fishery: 1984-1994

Changes in Fishery Patterns

Changes began to occur in the 1980s, with the declaration of 200 nautical miles zones by the USSR¹⁹ and the United States.²⁰ With the US proclamation also came a change in American policy with respect to its fishing interests in the Bering Sea and elsewhere. Beginning in 1984, the United States pursued a policy of the gradual exclusion of foreign fishing vessels from its EEZ²¹, and the encouragement of American vessels and processors.²² By 1988, the US EEZ in

¹⁸ Yonezawa notes the reciprocal access arrangements had a quota of 750,000 metric tonnes in 1978-1983, reducing to 700,000 tonnes in 1984, 600,000 tonnes in 1985 and 150,000 tonnes in 1986: Yonezawa, *supra* note 10, pp.186-187

¹⁹ *Decree of the Presidium of the Supreme Soviet of the USSR on the Economic Zone of the USSR, 28 February 1984*, reprinted in R.W. Smith, *Exclusive Economic Zone Claims: An Analysis and Primary Documents*, (Dordrecht: Martinus Nijhoff, 1986) pp.417-423

²⁰ *Exclusive Economic Zone of the United States of America*, Proclamation, 10 March 1983: reprinted in Smith, *supra* note 19, pp.467-468. The US had instituted a fishing zone in 1977.

²¹ Although the United States had proclaimed an extended fishing zone with effect from 1 March 1977, it continued to permit extensive foreign access to its EEZ. Prior to 1984, the total allowable level of foreign fishing (TALFF) for Alaskan waters was in excess of 1.7 million tons: see table reproduced in Park, *supra* note 17, p.179

²² The development of the US policy through the 1980s is charted by Alverson: D.L. Alverson, "Fisheries Developments in the Northeast Pacific and the FCMA/MFCMA" in J.P. Craven, J. Schneider and C. Stimson (eds), *The International Implications of Extended Maritime Jurisdiction in the*

the Bering Sea was closed to foreign vessels fishing for pollock and this was to have important consequences for the region.²³

The closure of US waters to Japanese, Polish, South Korean, Chinese, and Russian vessels did not see a drop in the pollock catch from the waters. Rather the progressive exclusion of foreign fishing vessels from its EEZ was accompanied by a spectacular expansion in fishing effort in Alaskan waters.²⁴ As such, by 1988 when the EEZ fishery was closed to foreign vessels, US vessels were already exceeding the previous foreign catch levels.²⁵ At the same time, there was a similar expansion in the level of fishing catch in the Soviet zone. It had risen from 662,000 metric tonnes in 1985 to 1.3 million tonnes of pollock in 1988.²⁶

Pacific, (Honolulu: Law of the Sea Institute, 1989) p.170 at pp.170-182

²³ The exclusion of foreign fishing vessels was phased in over a number of years: E.L. Miles & D.L. Fluharty, "U.S. Interests in the North Pacific" (1991) 22 *Ocean Development and International Law* p.315 at p.318

²⁴ Crutchfield notes that between 1976 and 1985, the United States' portion of Bering Sea fish landings increased from two percent to 45 percent of the total. In 1986, new Alaskan fishing operations amount to almost 50 percent of the entire US domestic fishing effort: J.A. Crutchfield, "Impact of Extended Jurisdiction on Fisheries of the Northeast Pacific" in E.L. Miles (ed.), *Management of World Fisheries: Implications of Extended Coastal State Jurisdiction*, (Seattle: University of Washington Press, 1989) p.159 at p.165

²⁵ For example, in 1980 958,000 metric tonnes of pollock were taken within the US fishing zone, predominantly by foreign vessels. By 1989, the catch had risen to 1.386 million tonnes for the same area, although the (legal) fishing effort was now almost entirely American: see table reproduced in Hayashi, *supra* note 17, p.353

²⁶ Hayashi, *supra* note 17, p.353

The foreign vessels that had taken most of the pollock catch in the early 1980s did not leave the Bering Sea entirely. Although the Bering Sea is semi-enclosed, the central area is more than 200 nautical miles from land, leaving a large oval-shaped zone of high seas unofficially known as the "doughnut hole". Once excluded from the US EEZ, the foreign fishing fleets, from Japan, South Korea, China and Poland shifted their Bering Sea operations to the doughnut hole, where they were free to fish without regulation.²⁷

The change in practice can be seen dramatically when comparing levels of exploitation of fish in the doughnut hole before and after the advent of exclusive economic zones to the region. In 1980, 15,000 metric tonnes of pollock were harvested in the doughnut hole.²⁸ In 1985, this had grown to 363,000 metric tonnes, rising to 1,040,000 tonnes in 1986 and 1,448,000 tonnes in 1989. While the figures may be distorted by the doughnut hole being used as a base for illegal pollock raids on the US EEZ²⁹, it is clear there was a vast and dramatic shift in fishing practices in the Bering Sea. While the figures vary depending upon their source, the table assembled by the Japanese Fisheries Agency is illuminating in that

²⁷ The explosion in the size of the fishery can be seen in the figures tabulated by Mirovitskaya and Haney: N.S. Mirovitskaya and J.C. Haney, "Fisheries Exploitation as a Threat to Environmental Security: The North Pacific Ocean" (1992) 16 *Marine Policy* p.243 at p.246; see also Miles & Burke, *supra* note 5, pp.348-349; see also Saguirian, *supra* note 5, pp.5-6

²⁸ Mioviski, *supra* note 3, p.527

²⁹ Canfield, *supra* note 13, pp.260-261

it indicates the scale of the fishing activity for individual States in the doughnut hole area:

Doughnut Hole Fishing Effort by State: 1983-1989

(figures in thousands of Metric Tonnes)³⁰

Year	Japan	Korea	Poland	China	USSR
1983	4	67	0	0	0
1984	101	80	0	0	0
1985	136	82	116	2	0
1986	698	156	163	3	12
1987	804	242	230	17	34
1988	750	269	299	18	61
1989	655	301	269	31	151

The impact upon the fishery itself can be further emphasised by the fact that the pollock caught in the doughnut hole were significantly smaller than pollock in the same age cohort caught in the United States EEZ, meaning that although there was

³⁰ Adapted from Hayashi, *supra* note 17, p.353

a broad equivalency in the size of the catches, the doughnut hole catch would consist of more individual fish.³¹

The sudden rise in the catches in the Bering Sea was a source of some concern for scientists. Mioviski notes that in 1988, at a time when catch levels were still rising, scientists from the States fishing in the doughnut hole met at Sitka to discuss the state of the pollock stock. The meeting voiced fears there was overfishing taking place, and called for expanded research in the region and a coordinated international programme for fishery exploitation.³²

Challenge and Response

International efforts to regulate the fishery began in earnest only when it was apparent the stock was under threat. Interestingly in 1987, at the point when Japanese vessels were on the verge of being completely excluded from the US EEZ, and the pollock catch in the doughnut hole was rising at a tremendous rate, Japan approached the United States and Canada within the INPFC to cooperate in the

³¹ See the table of relative fish sizes indicating EEZ pollock were likely to be between 5 and 15 percent larger reproduced in K. Yonezawa, "Some Thoughts on the Straddling Stock Problem in the Pacific Ocean" in T. Kuribayashi and E.L. Miles (eds), *The Law of the Sea in the 1990s: A Framework for Further International Cooperation*, (Honolulu: Law of the Sea Institute, 1990) p.127 at p.129

³² Mioviski, *supra* note 3, pp.528-529

collection of scientific data on pollock in the doughnut hole.³³ Nothing ultimately came of this proposal, and by 1993 INPFC itself had been wound up and replaced.³⁴

At the same time, within the United States, calls were made for unilateral measures, or possibly bilateral measures in concert with the Soviet Union, to regulate the high seas harvest of pollock in the Bering Sea. Two resolutions were introduced in the United States Senate in March 1988, effectively seeking a moratorium of all fishing in the doughnut hole area, and the conclusion of an agreement with the Soviet Union, pending negotiations with other interested States.³⁵ One of the two

³³ The Japanese request was made in the following terms:

Due to a rapid reduction of fish allocation by the United States, Japan has directed its attention to the Bering high seas as a fishing ground of bottom fish fishery, and fishing there has been remarkably expanding. It is said that pollock in the Bering high seas consists of several stocks and their quantity is large, but, at present, our scientific knowledge on bottom fish resources in the waters is limited. Therefore, we think it is important to compile scientific knowledge by improving research studies and to establish at an early stage an international organization with broader membership dealing with non-anadromous species...and to throw an objective light on the resources by enhancing cooperation with regard to research, analysis and exchange of scientific information and knowledge on non-anadromous species in the North Pacific Ocean.

Statement by Commissioner Kenjiro Nishimura, Chairman of the Japanese National Section: reprinted International North Pacific Fisheries Commission, *Annual Report 1987*, 3 November 1987, p.6

³⁴ As noted above, the replacement body, NPAFC, was concerned solely with anadromous stocks.

³⁵ See Senate Resolutions 396 and 397, 134 *Congressional Record* pp.4495-4500, 21 March 1988

resolutions did pass in the Senate³⁶, and its content raised some concerns that it might lead the United States to take action contrary to international law.³⁷ While sympathetic to the concerns over the rising levels of exploitation in the doughnut hole, the US administration was not prepared to act directly upon the resolution, but rather commenced negotiations with the Soviet Union as to an appropriate course of action.³⁸ Initial talks by officials had already taken place in January 1988³⁹, and there was bilateral accord on the need for cooperative regulation by a special working group established to address the issue in April 1988.⁴⁰

³⁶ Senate Resolution 396 was adopted 78 votes to 0, with 22 senators absent.

³⁷ Burke points out several significant errors in the resolution, indicating its authors had, at best, a limited understanding of the relevant international law, or even the fishery itself: W.T. Burke, "Fishing in the Bering Sea Donut: Straddling Stocks and the New International Law of Fisheries" (1989) 16 *Ecology Law Quarterly* p.285 at pp.307-310

³⁸ Miles and Burke noted that although the United States administration was placed under pressure from industry to seek a unilateral extension of jurisdiction, the Departments of State and Defense counselled against such action, noting that it would set a precedent for similar action by other States that would be detrimental to US interests: Miles & Burke, *supra* note 5, p.349. See also L. Juda, *International Law and Ocean Use Management: The Evolution of Ocean Governance*, (London: Routledge, 1996) p.263

³⁹ See Joint Statement, (1988) 88 *Department of State Bulletin* p.68, Moscow, 29 January 1988

⁴⁰ See Hayashi, *supra* note 17, p.355. One of the factors responsible for the adoption of the Senate resolution, and the one responsible for the great haste in its passage through the Senate (the resolution was not considered by the Senate Foreign Relations Committee, and only briefly examined by the Commerce Committee) had been to ensure it coincided with the visit to Washington of the Soviet Foreign Minister: 134 *Congressional Record* p.4496 and p.4499, 21 March 1988

The two coastal States sought to reach a cooperative understanding with the DWFNs in the doughnut hole, rather than to impose a solution.⁴¹ This is evident from the joint statement released by the two leaders of the US and USSR following the conclusion of their summit meeting in Washington in June 1990. While stressing the need for "urgent conservation measures", they welcomed cooperative efforts towards "the development of an international regime for the conservation and management of the living resources of the central Bering Sea".⁴² In this environment, the next step was to bring together the two coastal States with the DWFNs with an interest in the fishery to establish a legal framework to put conservation measures in place.⁴³

⁴¹ See Article XI, *Agreement on Mutual Fisheries Relations*, done at Moscow on 31 May 1988, entered into force 28 October 1988: TIAS 11442. See generally Mirovitskaye & Haney, *supra* note 27, pp.248-250; Miles & Burke, *supra* note 5, p.349. The cooperative spirit in relation to Bering Sea issues also extended to a range of other issues resolved at around this time. For example see *Agreement concerning Mutual Visits by Inhabitants of the Bering Straits Region*, done at Jackson Hole on 23 September 1989, entered into force 10 July 1991: reprinted 28 ILM 1424 (1989); *Agreement concerning the Bering Straits Regional Commission*, done at Jackson Hole on 23 September 1989, entered into force 10 July 1991: reprinted 28 ILM 1429 (1989); *Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary*, done at Washington DC on 1 June 1990, entered into force 16 September 1991: reprinted 29 ILM 941 (1990)

⁴² Fisheries in the Bering Sea. A Joint Statement on the Conservation of Fish in the Bering Sea, Washington DC 4 June 1990: reprinted KAV 3938. Excerpts from the leaders Joint Statement from the June 1990 Washington Summit are also reproduced in Hayashi, *supra* note 17, p.355

⁴³ An informal meeting of the two coastal States, together with DWFNs Japan, South Korea and Poland, as well as Canada, to discuss straddling stocks in the Bering Sea was held in Washington DC in February 1990. This

A formal conference to address the Conservation and Management of the Living Marine Resources of the Central Bering Sea convened in Washington DC in February 1991, initiated by the two coastal States, the United States and Russia⁴⁴, and attended by the significant DWFNs: China, Japan, South Korea and Poland. While there was an early consensus that the doughnut hole stock was fully utilised, in accordance with the provisions of the Law of the Sea Convention, the application of conservation measures were necessary.⁴⁵ However, beyond an intention to apply interim measures, amounting to the halting of any further expansion of the fishery, and preparations for further discussion, there were no concrete results.⁴⁶

It is a measure of the importance of the issue that subsequent conferences were held at approximately thrice yearly intervals. A total of ten conferences were held in a variety of locations between 1991 and 1994.⁴⁷ Initially, little effective progress

meeting was marked by limited progress and a lack of cooperation from Poland: see Saguirian, *supra* note 5, p.7

⁴⁴ Miles & Fluharty, *supra* note 23, pp.323-325

⁴⁵ Canfield, *supra* note 13, p.269

⁴⁶ Canfield, *supra* note 13, pp.269-270; E. Meltzer, "Global Overview of Straddling and Highly Migratory Fish Stocks: The Nonsustainable Nature of High Seas Fisheries" (1994) 25 *Ocean Development and International Law* p.255 at p.288

⁴⁷ Conferences were held in Tokyo (July/August 1991; June/July 1993), Washington DC (February 1991; November 1991; April 1992; January 1993; November/December 1993; February 1994), Moscow (August 1992) and Seoul (October 1993). See Joint Press Release issued on the adoption of the Doughnut Hole Convention, 11 February 1994: reprinted (1995) 10 *International Journal of Marine and Coastal Law* p.127

was made, as there was a fundamental difference of opinion between the coastal States, who wanted a moratorium or a fixed cap to fishing in the doughnut hole, and the DWFNs, who were fundamentally opposed to restrictions on their catches.⁴⁸ The DWFNs expressly rejected any possibility of accepting a moratorium at the second conference in Tokyo in July and August 1992, and while it was clear all of the parties were committed to continuing the negotiations, it was equally clear that there was little common ground as to how the doughnut hole should be managed. The DWFNs objected on the basis that management or a moratorium would deprive them of catches whereas the coastal States could continue to fish the region from within their EEZs.⁴⁹ Such an argument has some force when the size of the catches within the US and Russian EEZs are compared to that of the doughnut hole.

⁴⁸ Juda, *supra* note 38, pp.264-265; Meltzer, *supra* note 46, p.288

⁴⁹ Canfield, *supra* note 13, pp.269-270; Balton, *supra* note 13, p.15

Pollock Catch in the Bering Sea 1980-93

(figures in thousands of metric tonnes)⁵⁰

Year	1980	1981	1982	1983	1984	1985	1986
US EEZ	958	974	956	982	1099	1179	1189
Russian EEZ	928	891	1019	971	756	662	867
Doughnut Hole	18	0	4	71	182	363	1040

Year	1987	1988	1989	1990	1991	1992	1993
US EEZ	1237	1228	1230	1315	1364	1276	1458
Russian EEZ	812	1327	1029	814	504	597	677
Doughnut Hole⁵¹	1326	1397	1448	918	293	10	3

⁵⁰ Adapted from Meltzer, *supra* note 46, p.286; and from V.G. Weststad, *Trends in North Pacific Pollock and Harvest Prospects for 1997 and Beyond*, (Seattle: Alaska Fisheries Science Center, 1997): reprinted in <<http://www.nwn.noaa.gov/sites/afsc/refm/norfish/FORUM3.html>>

⁵¹ Figures for the doughnut hole post-1992 include catches within the Bogoslof Island area of the US EEZ.

The disappearance of the pollock in 1992 finally brought progress to the negotiations.⁵² As is evident from the table, pollock catch levels in the doughnut hole plummeted from over 1.4 million metric tonnes in 1989 to less than 11,000 tonnes in 1992. This left the DWFNs without a fishery, and far more amenable to the negotiation of a regime to restore the central Bering Sea.⁵³ At the fifth conference, the parties finally agreed to an interim moratorium on fishing in the doughnut hole in 1993 and 1994.⁵⁴ This halted all commercial fishing while negotiation of a permanent regional arrangement took place.⁵⁵ This was finally achieved in June 1994 with the conclusion of the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea.⁵⁶

⁵² This was in spite of the dissolution of the Soviet Union between the fourth and fifth Conferences. Balton notes that the Russian government's attitude to the Bering Sea situation was identical to that of the former Soviet Union: Balton, *supra* note 13, p.17

⁵³ T.D. Smith, "United States Practice and the Bering Sea: Is it Consistent with a Norm of Ecosystem Management?" (1995) 1 *Ocean and Coastal Law Journal* p.141 at p.171

⁵⁴ W.V. Dunlap, "Bering Sea - The Donut Hole Agreement" (1995) 10 *International Journal of Marine and Coastal Law* p.114 at p.116; Canfield, *supra* note 13, pp.270-271; Meltzer, *supra* note 46, p.289. The moratorium was extended pending the entry into force of the permanent management regime.

⁵⁵ For details of the mechanics of these final negotiations see Meltzer, *supra* note 46, pp.289-290

⁵⁶ *Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, done at Washington DC, 16 June 1994, entered into force 8 December 1995: reprinted in 34 ILM 67 (1995) [hereafter cited as the Doughnut Hole Convention]

International Law and the Negotiation of the Doughnut Hole Regime

The rise, decline and destruction of the doughnut hole fishery is compelling for a number of reasons, but is of particular interest for those interested in the operation of the Law of the Sea Convention. This is not least because the origins of the crisis in the doughnut hole can be found in the Convention itself. That is, the development and adoption of the EEZ provided the mechanism for the extension of jurisdiction that allowed the coastal States to expel the DWFNs from the coastal fisheries. That is not to say that but for the EEZ the collapse of the pollock stock might never have occurred, but it is reasonable to note that this is by no means the only fisheries crisis in part related to the exclusion of DWFNs and the arbitrary distance of 200 nautical miles.⁵⁷

However, what is of much interest is the reaction of the international community to the crisis. While the Convention was still some years from entering into force, and the protagonist States were not parties to the Law of the Sea Convention, at the time the crisis arose, all the States concerned clearly conducted themselves as if the provisions of the Convention represented customary international law. On that basis, the doughnut hole represents one of the first opportunities to assess how effectively the Convention's provision dealt with a major fisheries crisis.

⁵⁷ Similar pressures on straddling stocks have occurred in a number of fisheries, including areas in the northeast and northwest Atlantic, the Sea of Okhotsk and the Challenger Plateau. These were the subject of an extended examination by Meltzer: Meltzer, *supra* note 46, pp.279-305

The Law of the Sea Convention has two provisions relevant to cooperation between States fishing on the high seas: Article 63(2) dealing with straddling stocks; and Article 118 dealing with high seas marine living resources. As was considered in Chapter 2, both articles create duties to enter into negotiations to reach an agreement on conservation measures with respect to the stocks, rather than a *pactum de contrahendo*, which would have required a positive outcome.⁵⁸

While the duty imposed on a DWFN arising out of the two articles is essentially the same, it is interesting to note that the other States to whom the duty is owed vary between Articles 63(2) and 118. In the former case, the duty to cooperate is created between the DWFNs and the adjacent coastal State, while in the latter, the duty is owed only between active DWFNs. In the context of the high seas area in issue, it was reasonable to assume these provisions represented custom. Through the negotiations, all the parties acted in a manner consistent with the Law of the Sea Convention, and, with the exception of the United States, all of the protagonists have subsequently become parties to the Convention.⁵⁹

One difficulty faced in the early stages of the negotiations was the difference between the various States on the issue of the nature of the stocks. The American

⁵⁸ See Chapter 2 at p.124

⁵⁹ The United States has indicated it regards the EEZ as embodying customary international law: see statement by President Reagan, 10 March 1983: reprinted 22 ILM 461 (1983)

position was that the Bering Sea functioned as a single ecosystem, hence the pollock as an element of that ecosystem were a single stock.⁶⁰ The Japanese position was that the pollock stocks of the Bering Sea could be divided into three distinct and separate stocks, in the east broadly corresponding with the US EEZ, in the west broadly corresponding with the USSR/Russian EEZ, and a central stock situated in the doughnut hole.⁶¹

The difference in the two positions potentially had significant ramifications when considered in the light of Article 63(2) and 118. According to the American assessment of the pollock stock being common throughout the whole Bering Sea, pollock is a straddling stock, compelling the participation of Russia and the United States.⁶² However, if the Japanese position is upheld, then the doughnut hole pollock are unique to that region, and therefore do not straddle an EEZ, and must be subject only to Article 118. The United States at no stage had reported its vessels fishing in the doughnut hole, and the Soviet Union only briefly participated

⁶⁰ Juda, *supra* note 38, pp.263-264; see also Balton, *supra* note 13, p.15

⁶¹ Yonezawa, *supra* note 31, pp.128-129; Hayashi, *supra* note 17, p.354; T.L. McDorman, "Canada and the North Pacific Ocean: Recent Issues" (1991) 22 *Ocean Development and International Law* p.365 at pp.367-368

⁶² The United States was of the view it did not merely require the participation of coastal States, but the consistency of conservation measures in the doughnut hole with those operating in the adjacent EEZ. This was based on a construction of Article 63(2) that gave coastal States preferential rights: See Juda citing private correspondence from US Department of State providing presentation of David Colson, head of the US Delegation to the First Bering Sea Fisheries Conference, Washington DC, 19-21 February 1991: Juda, *supra* note 38, pp.263-264

in doughnut hole fishing, and then only to a limited extent.⁶³ In theory, certainly the United States, and possibly Russia, once it was clear its vessels were no longer active in the doughnut hole, were owed no duty of cooperation with the DWFNs, if the Japanese assessment were found to be true.

In practice, potentially disqualifying US participation in doughnut hole negotiations would have been counter-productive and politically impossible.⁶⁴ Since a right to participate would have only required a single US vessel to leave its own EEZ and fish briefly in the doughnut hole, an attempt at disqualification would have served little purpose. The difficulty generated by Japan's view of the nature of the stocks was that, if upheld, it deprived the coastal States of a perceived preferential interest in the management of stocks of the central Bering Sea. While the Japanese position did conveniently match jurisdictional responsibilities, it was clear that there was some scientific support for their point of view, albeit open to dispute, so there was no question of Japan maintaining its position without good faith. The coastal States could be painted as self-interested meddlers, thus politically legitimising the failure of the negotiations, and preventing the coastal States from purporting to unilaterally assert the applicability of conservation measures.⁶⁵ While the Japanese and other DWFNs active in the doughnut hole did participate in the negotiations, it is notable

⁶³ See table at note 30

⁶⁴ Certainly, none of the DWFNs ever publicly questioned the right of the United States to take a leading role in the doughnut hole negotiations.

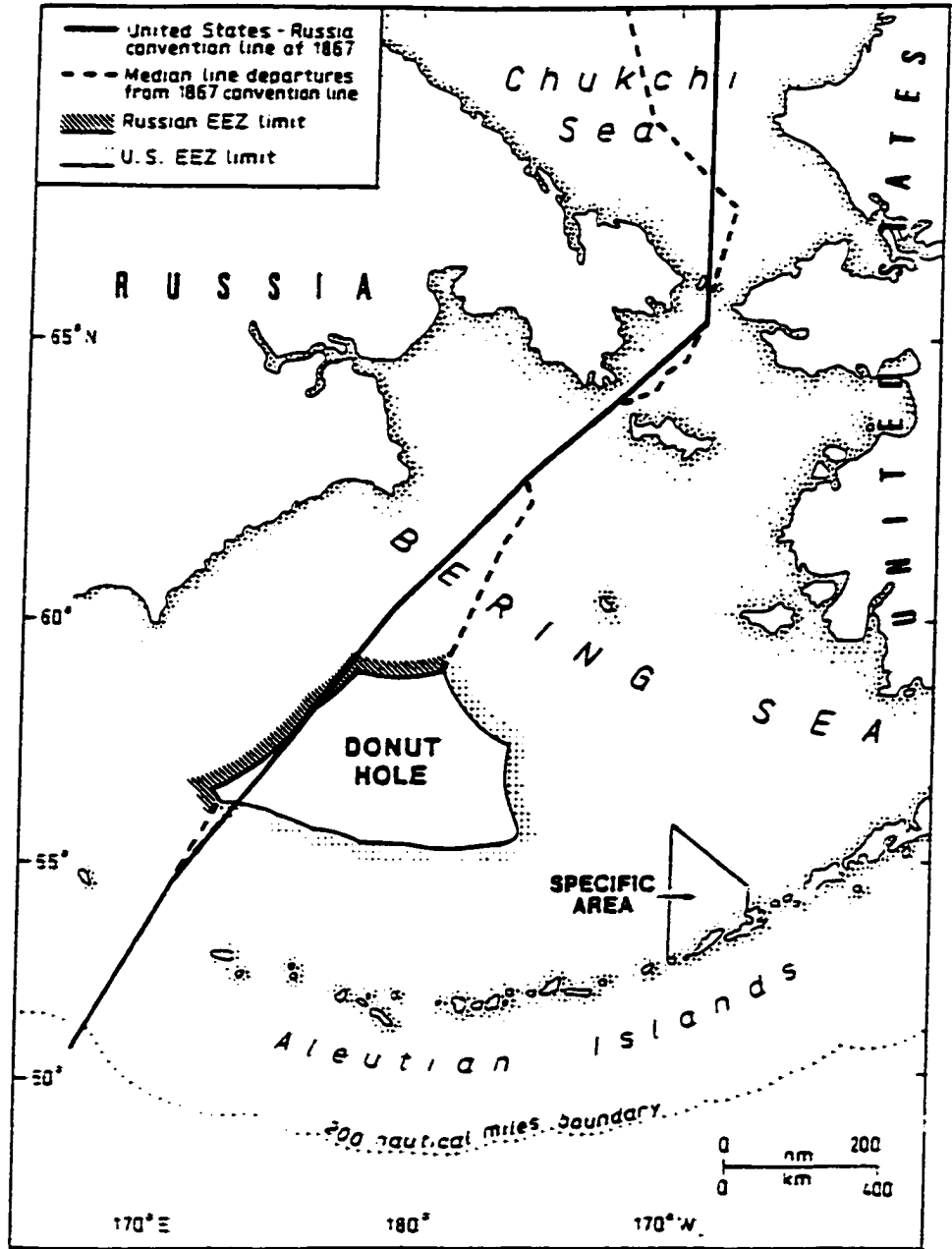
⁶⁵ See Yonezawa, *supra* note 31, p.129

that Japan did not resile from its view, and no progress was made in the negotiations until the stock was in a state of terminal decline.

The limitations of a mere duty to cooperate are particularly evident in the events surrounding the collapse of the doughnut hole fishery. While the DWFNs were not prepared to accept calls by the coastal States for a moratorium on the pollock fishery at the start of negotiations, there is no suggestion that these States were not discharging their duty to cooperate. All States recognised during the first meetings that the stock was under pressure, and to address this, the protagonist States established research and observation programmes, and the DWFNs indicated they would not increase their existing fishing effort.⁶⁶ While there was not agreement on the imposition of a moratorium, the DWFNs and coastal States continued to negotiate, and on matters where there was agreement, cooperated effectively. It is clear that a *pactum de negotiando* is a duty to negotiate, and does not compel a DWFN to adopt conservation measures advocated by a coastal State, and in this instance, the States concerned were negotiating in good faith. As such, the response of the States was consistent with the Law of the Sea Convention to deal with a high seas fishery, and yet the stock was effectively destroyed and over half a decade later has yet to recover.

⁶⁶ See Juda, *supra* note 38, p.264

Bering Sea Doughnut Hole



Post 1994: The Doughnut Hole Convention

Participation

The Doughnut Hole Convention was adopted at the tenth Bering Sea conference held in Washington in February 1994, and opened for signature in the same city on 16 June 1994. It was immediately signed by the United States, Russia, South Korea and China, and subsequently signed shortly after by Japan and Poland.⁶⁷ The Convention provided it was to enter into force thirty days after the fourth ratification was received, including both the United States and Russia.⁶⁸

The States who signed the Convention were, under its terms, the only States eligible as of right to become parties to it.⁶⁹ Other States wishing to participate can only do so with the unanimous consent of all of the State parties. There is a question as to whether this is consistent with the Straddling Stocks and High Migratory Stocks Agreement, as that instrument provides that any State "having a real interest" in a high seas fishery should be able to participate.⁷⁰ While Tahindro takes the view

⁶⁷ Japan signed the Doughnut Hole Convention on 4 August 1994. Poland signed on 25 August 1994.

⁶⁸ Article XIV(2) Doughnut Hole Convention

⁶⁹ Article XVI(1) Doughnut Hole Convention

⁷⁰ Article 8(3) SS/HMS Agreement provides:

Where a regional or subregional fisheries management organization or arrangement has the competence to establish conservation and management measures for particular straddling fish stocks or highly migratory fish stocks, States fishing for the stocks on the high seas and relevant coastal States shall give effect to their duty to cooperate by becoming members of such organization or participants in such

that this provision ought to be construed broadly, so as to include all States with some interest in the fishery⁷¹, it is possible if read in conjunction with Article 8(4) of the SS/HMS Agreement⁷², that other States could be prevented from fishing in the doughnut hole, and thereby never acquire an interest which would demand participation. However, the question is moot, as all of the States who were active in the doughnut hole are original parties, and given the poor state of the doughnut hole fisheries, new participants are unlikely to enter the fishery in the foreseeable

arrangement, or by agreeing to apply the conservation and management measures established by such organization or arrangement. States having a real interest in the fisheries concerned may become members of such organization or participants in such arrangement. The terms of participation in such organization or arrangement shall not preclude such States from membership or participation; nor shall they be applied in a manner which discriminates against any State or group of States having a real interest in the fisheries concerned.

⁷¹ A. Tahindro, "Conservation and Management of Transboundary Fish Stocks: Comments in the Light of the Adoption of the 1995 Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks" (1997) 28 *Ocean Development and International Law* p.1 at p.21

⁷² Article 8(4) SS/HMS Agreement provides:

Only those States which are members of such an organization or participants in such an arrangement, or which agree to apply the conservation and management measures established by such organization or arrangement, shall have access to the fishery resources to which those measures apply.

Since measures under the Doughnut Hole Convention have closed the fishery, compliance by a third State would mean no fishing, and therefore no "real interest" in the fishery could be acquired.

future.⁷³

The Convention applies to the Bering Sea beyond the EEZ of any State, so is confined to the high seas.⁷⁴ This is significant insofar as that if the United States' position that the pollock of the Bering Sea are part of a single ecosystem is correct, there is no attempt to bring that ecosystem under unified management.⁷⁵ Apart from scientific research, which can be undertaken both within and outside the Convention area⁷⁶, there is no requirement for the parties to seek to coordinate their management measures. The *travaux préparatoires* of the Doughnut Hole Convention make it clear there ought to be general "compatibility" between

⁷³ The Doughnut Hole Convention explicitly tries to avoid the difficulties of reflagging vessels in Article XII(4):

Each Party shall take appropriate measures aimed at preventing fishing vessels registered under its laws and regulations from transferring their registration for the purpose of avoiding compliance with the provisions of this Convention or conservation and management measures adopted pursuant thereto.

The issue of third party States and the Convention will be considered *infra* note 124.

⁷⁴ Article I Doughnut Hole Convention

⁷⁵ Balton notes that both the United States and Soviet Union rejected a suggestion by Poland that pollock be placed under unified management, on the basis as to do so would be inconsistent with Article 63(2) of the Law of the Sea Convention, as it provides for agreement on the management of high seas stocks: Balton, *supra* note 13, p.19. Given the two coastal States exercise sovereign rights over the pollock fisheries in their own EEZs, and the objectives for management of high seas and EEZ stocks are the same, this argument would seem to be motivated more by jurisdictional concerns than consistency with the Law of the Sea Convention.

⁷⁶ Article IV(1)(j) Doughnut Hole Convention refers to pollock fishing in the Bering Sea rather than in the "Convention Area".

conservation measures for pollock on the high seas and those operating in the adjacent EEZs, in a manner consistent with Article 7 of the SS/HMS Agreement.⁷⁷ This raises the question as to the extent to which preparatory work can be used as an aid to treaty interpretation, and whether, in this instance, evidence of an intention in the record of the negotiations will be sufficient to compel the parties to act consistently with that intention.

The use of *travaux préparatoires* in the interpretation of a treaty is dealt with in Article 32 of the Vienna Convention on the Law of Treaties. Article 32 provides recourse to preparatory work in order to confirm the meaning of provisions or to determine the meaning where it is ambiguous or obscure, or would lead to a manifestly absurd result. However, Article 32 expressly refers to the use of preparatory material as a *supplementary*, which suggests that it ought not to be resorted to as a matter of course, but rather to assist in giving meaning to treaty provisions which are deficient in some respect.⁷⁸ In this case, the Doughnut Hole

⁷⁷ Balton notes that the Record of Discussions for the Doughnut Hole Convention make this need for "general compatibility" clear: Balton, *supra* note 13, pp.35-36

⁷⁸ For example, the International Court of Justice in its Advisory Opinion on *Admission of a State to the United Nations* stated:

The Court considers that the text is sufficiently clear; consequently it does not feel that it should deviate from the consistent practice of the Permanent Court of International Justice, according to which there is no occasion to resort to preparatory work if the text of a convention is sufficiently clear in itself.

ICJ Reports 1948 p.57 at p.63

Convention gives the Annual Meeting of the parties the power to set appropriate harvest levels for doughnut hole pollock stocks, subject to the limitations contained in Annex 1.⁷⁹ The Convention prescribes no factors to be taken into account by the Annual Meeting in exercising its function except the reports of the Convention's Scientific and Technical Committee.⁸⁰ On that basis it is arguable that the parties need not consider the compatibility of conservation measures outside the doughnut hole with those measures they might adopt, unless the scientific impact of such outside measures has a consequence which the Scientific and Technical Committee would report.⁸¹ Clearly, the absence of any such link between national and international conservation measures in the text of the Doughnut Hole Convention itself is not entirely satisfactory if it is to operate within the legal environment created under the SS/HMS Agreement. However, were all the parties to the

cf. the view of the International Law Commission in its commentary to the (then) draft articles of the Vienna Convention on the Law of Treaties where it emphasised the utility in the application of extrinsic material as a subsidiary means of interpretation: [1966] 2 *Yearbook of the International Law Commission* p.223; see also *Interpretation of the Convention of 1919 concerning Employment of Women during the Night* PCIJ Reports (1932) Series A/B, No.50, p.365 at p.380

⁷⁹ These limits merely prescribe certain catch limits in the event the biomass of the stock is found to be below designated levels. These are discussed further at p.362.

⁸⁰ Article IV(3) Doughnut Hole Convention

⁸¹ In practice, the two adjacent coastal States have provided substantial research data concerning pollock stocks in their EEZs. For example see *Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Scientific and Technical Committee*, Tokyo, 30 November - 2 December 1998, paras 6.3.2 - 6.3.9.

Doughnut Hole Convention to become parties to the SS/HMS Agreement, it could be argued that the obligation of compatibility in Article 7 of the Agreement would restrict the parties to measures that were compatible, ultimately achieving the same end.⁸²

The Record of Discussions indicates that the coastal States expressed the intention of prohibiting the pollock catch in their EEZs in the Aleutian Basin while fishing was prohibited in the doughnut hole under the Doughnut Hole Convention.⁸³ The complete cessation of fishing has not occurred, although the US has instituted a moratorium on the stock in the Specific Area.⁸⁴ In the meantime, for other fishing elsewhere in the US EEZ, harvests of over 1 million metric tonnes have been the norm.⁸⁵ The table below graphically indicates the level of fishing that has occurred, and hence the limited utility of using the *travaux* as an indicator of intention.

⁸² For a discussion of Article 7 SS/HMS Agreement see Chapter 3 at p.262

⁸³ Balton, *supra* note 13, p.24

⁸⁴ *Report of the Annual Conference of the Parties to the Convention and Management of Pollock Resources in the Central Bering Sea*, Tokyo, 30 November - 4 December 1998, para. 6.E.12

⁸⁵ For data on the US and Russian pollock catch see the table below. At the 1998 Annual Conference, the US indicated its pollock quota for the coming season was 920,000 metric tonnes. At the same time, Russia indicated it had yet to set its total allowable catch, but estimated it would be approximately 800,000 tonnes: *Report of the Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Tokyo, 30 November - 4 December 1998, paras 6.A.1 and 6.A.6

Pollock Catch in the Bering Sea 1994-97

(figures in thousands of metric tonnes)⁸⁶

Year	1994	1995	1996	1997	1998
US EEZ	1531	1398	938	1392	1043
Russian EEZ	382	406	433	520	n.a.
Doughnut Hole⁸⁷	0.6	0.3	0.4	1	n.a.

Objectives

The objectives of the Doughnut Hole Convention are listed in Article II. It provides:

The objectives of this Convention shall be:

1. to establish an international regime for conservation, management and optimum utilization of pollock resources in the Convention Area;
2. to restore and maintain the pollock resources in the Bering Sea at levels that will permit their maximum sustainable yield;
3. to cooperate in the gathering and examining of factual information concerning pollock and other marine living resources in the Bering Sea; and
4. to provide, if the Parties agree, a forum in which to consider the

⁸⁶ Adapted from Wespestad, *supra* note 50

⁸⁷ Figures for the doughnut hole post-1992 include catches within the Bogoslof Island area of the US EEZ.

establishment of necessary conservation and management measures for living marine resources other than pollock in the Convention Area as may be required in the future.

The content of these objectives is enlightening in a number of respects. First, it is clear that the parties were concerned to act in a manner entirely consistent with the Law of the Sea Convention, with references to optimum utilization, and the restoration of stocks to permit their MSY.⁸⁸ Yet while an expression of support for the Law of the Sea Convention is to be expected, there is a lack of any reference to precaution, or the protection of the ecosystem of the Bering Sea. The absence of reference to these elements is interesting, given that at least one of the parties had approached the negotiations stressing the pollock were a single stock within an entire Bering Sea ecosystem, and both the SS/HMS Agreement and the Code of Conduct for Responsible Fishing were being hammered out contemporaneously with the Doughnut Hole Agreement.⁸⁹ Even though precaution, and to a lesser extent ecosystem modelling, had been placed directly in issue in international fisheries law, the parties chose not to incorporate them, even superficially, in the Doughnut Hole Convention.⁹⁰

Second, the Doughnut Hole Convention is intended to be a template for further

⁸⁸ cf. Article II(1) Doughnut Hole Convention and Articles 62 and 119 Law of the Sea Convention

⁸⁹ See discussions in Chapter 3 at p.240

⁹⁰ Balton notes that the two coastal States were sympathetic to ecosystem approaches to management, but ultimately accepted the single species approach supported by the DWFNs: Balton, *supra* note 13, p.26

cooperation in the Convention Area, in the event the parties are of the view that this is necessary. This can be construed in two ways: that using the Doughnut Hole Convention structure would save duplication if there was a need for cooperation on the harvesting of another commercial stock in the Doughnut Hole at some time in the future; or, tacit recognition of the need to regulate the ecosystem of the Bering Sea by allowing the Doughnut Hole Convention to grow beyond single species regulation. Given the absence of references to ecosystem management in the Doughnut Hole Convention, and the fact the objective is explicitly limited to the high seas rather than the totality of the Bering Sea ecosystem, it is submitted the former construction is more likely.⁹¹

Structure

Administration of the doughnut hole will be by an Annual Conference of the Parties, with the assistance of a Scientific and Technical Committee.⁹² This was thought preferable to the establishment of a permanent commission, essentially for reasons of expense.⁹³ The Annual Conference has the task of determining the

⁹¹ This is consistent with the statement by David Colson, the head of the US delegation during the doughnut hole negotiations to the Fisheries, Wildlife and Oceans Subcommittee of the US House of Representatives Committee on Resources: D.A. Colson, "Current Issues in International Fishery Conservation and Management" (1995) 6 *Dispatch* p.100 at p.101. See also the Record of Discussions, reproduced in part in Balton, *supra* note 13, p.20

⁹² Article III(1) Doughnut Hole Convention

⁹³ See the statement of Colson, cited by Dunlap: Dunlap, *supra* note 54, p.117

annual harvest level for pollock (AHL)⁹⁴ and the quotas for each fishing State (INQ)⁹⁵, as well as formulating other conservation and management measures for pollock that are deemed necessary.⁹⁶ It may also *inter alia*, discuss methods of cooperative enforcement⁹⁷ and fishery support operations in the doughnut hole⁹⁸, direct the Scientific and Technical Committee's "Plan of Work"⁹⁹, "consider" other conservation matters relating to species other than pollock¹⁰⁰, and any other matters necessary to meet the Convention's objectives.¹⁰¹

Decisions of the Annual Conference are to be made by consensus on all matters of substance, and the nature of any issue is itself a matter of substance.¹⁰² Each year the Conference will convene in the territory of one of the parties, and based on reports of the Scientific and Technical Committee, will determine the AHL for the following year, and the INQ for each party.¹⁰³ In the event a consensus solution

⁹⁴ Article IV(1)(a) Doughnut Hole Convention

⁹⁵ Article IV(1)(b) Doughnut Hole Convention

⁹⁶ Article IV(1)(c) Doughnut Hole Convention

⁹⁷ Article IV(1)(g) Doughnut Hole Convention

⁹⁸ Article IV(1)(g) Doughnut Hole Convention

⁹⁹ Article IV(1)(d) Doughnut Hole Convention

¹⁰⁰ Article IV(1)(i) Doughnut Hole Convention

¹⁰¹ Article IV(1)(m) Doughnut Hole Convention

¹⁰² Article V(2) Doughnut Hole Convention

¹⁰³ Articles VI, VII and VIII Doughnut Hole Convention

cannot be reached, the Convention sets up mandatory procedures to determine the AHL¹⁰⁴, and guidelines for the allocation of INQs.¹⁰⁵

The mandatory procedures for the AHL essentially link the appropriate harvest level to biomass in a rigid relationship designed to avoid overfishing. The biomass is to be calculated by designated institutions of the two coastal States for the Scientific and Technical Committee. In the event of insufficient information being available, the biomass will be calculated with reference to the stock present in a specific area in the vicinity of Bogoslof Island, determined by the United States institution alone. Once the biomass is determined, in the event of there being no consensus, the following fixed scale is used:

¹⁰⁴ Article VII(2) and Annex Part 1 Doughnut Hole Convention. The procedure involves the calculation of the pollock biomass by American and Russian institutions, based on data provided by the Scientific and Technical Committee. Once a biomass has been determined, the AHL is dependent on the size of the biomass - with no fishing to take place if the total stock is less than 1.67 million tonnes.

¹⁰⁵ Article VIII(2) and Annex Part 2 Doughnut Hole Convention. Rather than a mandatory procedure, Part 2 of the Annex specifies factors to be taken into account in the creation of a management system. These include the recommendations of the Scientific and Technical Committee, the scope, level and efficiency of each State's fishing effort; the opportunity for all parties to fish, and appropriate monitoring and conservation procedures.

AHL Calculation Procedure

Pollock Biomass	AHL
Less than 1.67 million tonnes	Zero
1.67 million to less than 2 million tonnes	130 000 tonnes
2 million to less than 2.5 million tonnes	190 000 tonnes
2.5 million tonnes or more	To be determined by Annual Conference

While the stock is recovering, these provisions give primary responsibility for conservation under the Doughnut Hole Convention to the two coastal States, and particularly to the United States. The two coastal States control the collection of data which determines the biomass which is crucial for the calculation of the AHL. Further the United States has jurisdiction over fishing in the critical Specific Area, so through its own fisheries practices can exert tremendous influence over the doughnut hole stock, legally if not as well as biologically. This formula for determining the AHL in the absence of consensus has been the source of some

controversy between the State parties.¹⁰⁶ In any year where the AHL is zero, the Annual Meeting can authorise trial fishing operations, in order to further a research plan submitted by a State party and based upon recommendations of the Scientific and Technical Committee. The Annual Meeting can determine the terms and conditions under which such trial fishing can take place.¹⁰⁷

The Scientific and Technical Committee will draw its membership from the participating States each entitled to at least one member.¹⁰⁸ The reference to *at least one member* seems to suggest that States might nominate a number of members if necessary, although there also appears to be a strong presumption of equality between the States.¹⁰⁹ The Scientific and Technical Committee's task is to act as a conduit through which national pollock research can be channelled and filtered to the Annual Conference, as well as undertake specific tasks and work allocated to it by the Conference. The need to make the regime as cost-effective as

¹⁰⁶ The differences over the setting of the AHL are considered at p.364

¹⁰⁷ Article X(4) Doughnut Hole Convention

¹⁰⁸ Article IX Doughnut Hole Convention

¹⁰⁹ Each State party provides a delegation to the Scientific and Technical Committee, although the size of each delegation is at the discretion of each party. At the 1998 Annual Meeting in Tokyo, the Chinese delegation consisted of 3 individuals, while the US and Japanese delegations consisted of 16 individuals each: *Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Meeting of the Scientific and Technical Committee*, Tokyo, 30 November - 2 December 1998, Attachment 2

possible was responsible for the adoption of an Annual Conference rather than a permanent secretariat¹¹⁰, it seems unlikely the Scientific and Technical Committee will develop its own independent research capability in the foreseeable future. The Committee is to report to the Annual Conference, making recommendations in relation to the exploitation of pollock, including the AHL for the preceding year. Such recommendations ought to be by consensus, where it is attainable, and with all views recorded in the report where it is not.¹¹¹ The recommendations made at meetings are considered below.

Enforcement

Enforcement is both flag-State and cooperative. Firstly, each State undertakes to ensure compliance with the Convention and any conservation measures made under it. This includes permitting fishing in the doughnut hole by only expressly authorised vessels¹¹², the fitting of each vessel with satellite location transmitters¹¹³, notification of entry into the Hole and of transshipments of fish out of the Hole.¹¹⁴ All data collected on fish catch and vessel locations must be exchanged between the parties, at regular intervals, and in the case of the latter on a

¹¹⁰ See the statement of Colson, cited by Dunlap: Dunlap, *supra* note 54, p.117

¹¹¹ Article IX(1) - IX(4) Doughnut Hole Convention

¹¹² Article XI(2) Doughnut Hole Convention

¹¹³ Article XI(3)(a) Doughnut Hole Convention

¹¹⁴ Article XI(3)(b) and (c) Doughnut Hole Convention

real time basis.¹¹⁵ All vessels are to carry trained observers, with a preference for non-flag State observers where possible.¹¹⁶ Their task is to monitor the fishing activities of the vessel and to report to the vessel's and their own State.¹¹⁷ The representatives of a non-party State are permitted to attend meetings as observers, but unanimously accepted by the parties.¹¹⁸ There would seem to be no scope for the participation of NGOs or international organisations.¹¹⁹

All States consent to the boarding and inspection of their vessels in the doughnut hole by officials of the other parties.¹²⁰ If a violation is found, the flag State is to be informed, and is obliged to inform its vessel to cease the violations, and if necessary, to leave the doughnut hole.¹²¹ If the violation is to fish beyond allowable limits or is an unauthorised excursion into the doughnut hole and the flag

¹¹⁵ Article XI(4) Doughnut Hole Convention

¹¹⁶ Article XI(5) Doughnut Hole Convention

¹¹⁷ Article XI(5)(e) Doughnut Hole Convention

¹¹⁸ Prior to the second Annual Conference of the Parties, the European Union enquired of Poland whether it might participate as an observer. The EU did not participate as rules to deal with the admission of observers had yet to be agreed: *Report of the Second Annual Conference of the Parties to the Convention on the Conservation and Management of the Pollock Resources of the Central Bering Sea*, Seattle, 5-7 November 1997, paras 6.J.1-6.J.10. The request was not repeated prior to the third Annual Conference.

¹¹⁹ Article XII(4) Doughnut Hole Convention

¹²⁰ Article XI(6)(a) Doughnut Hole Convention

¹²¹ Article XI(7) Doughnut Hole Convention

State cannot immediately meet its obligation, the boarding of the vessel may continue until the flag State can take over.¹²² This means, in effect, an arrest can be made by any party, although in effect the arrest is made on behalf of the flag State. All offences are to be tried in the flag State's courts under domestic law, with penalties reflecting the seriousness of infractions.¹²³ To prevent circumvention of the law by the use of flags-of-convenience, the parties are obliged to pass legislation to prevent the transfer of registration for that purpose.¹²⁴

The Doughnut Hole Convention's attitude to third party States is worthy of comment. Third party States are to have their attention drawn to the activities of their nationals or vessels that might hinder the attainment of the Doughnut Hole Convention's objectives and are to be *encouraged* to respect the provisions of the Convention and the measures taken pursuant to it.¹²⁵ This is not much different

¹²² Article XI(7)(b) Doughnut Hole Convention

¹²³ Article XI(7)(c) and (d) Doughnut Hole Convention

¹²⁴ Article XII(4) Doughnut Hole Convention

¹²⁵ Articles XII(1) and (2) Doughnut Hole Convention provide:

1. The Parties agree to invite the attention of any non-Party to this Convention to any matter relating to the fishing operations of its nationals, residents, or vessels flying its flag that could affect adversely the attainment of the objectives of this Convention.

2. The Parties shall, consistent with international law, encourage any non-Party to respect the provisions of this Convention and any conservation and management measures adopted pursuant thereto.

to the language of a number of fisheries conventions, including CCAMLR¹²⁶, but Article XII(3) of the Doughnut Hole Convention goes further. The parties agree to take measures individually or collectively, consistent with international law, to deter a third party State from activities that adversely affect the attainment of the Convention's objectives.¹²⁷ This could encompass a range of measures, including refusal of port access, the imposition of tariffs against the third party State's fish and possibly other forms of more radical economic retaliation.

The enforcement provisions contained in the Doughnut Hole Convention strongly resemble those in the SS/HMS Agreement¹²⁸, and the effectiveness of their operation in this context may be a useful indicator of the likelihood of success for the equivalent provisions in the SS/HMS Agreement. As the fishery is closed, there has been little activity in the doughnut hole itself, so opportunities to use the cooperative enforcement measures have been limited. To the present point in time, there has been no indication that the measures have proved impractical or unwieldy.

¹²⁶ cf. Article XXI CCAMLR which has the Commission draw the matter to the attention of third States. Although note Article XXII(1) CCAMLR which hints at stronger action, subject only to the United Nations Charter. See Chapter 5 at p.413

¹²⁷ Article XII(3) Doughnut Hole Convention provides:
If fishing operations by nationals, residents, or vessels of any non-Party could affect adversely the attainment of the objectives of this Convention, the Parties shall take measures, individually or collectively, which are consistent with international law, and which they deem necessary and appropriate, to deter such operations.

¹²⁸ For a discussion of these measures see Chapter 3 at p.261

Again it places a great responsibility on the coastal States¹²⁹, the principal burden for monitoring and enforcement in the doughnut hole will likely fall upon them. In practice, both the United States and Japan have dispatched vessels to patrol the doughnut hole.¹³⁰

Operation of the Doughnut Hole Convention

It is difficult to give an effective assessment of the Doughnut Hole Convention in action. Since entering into force, only three annual meetings have been held, and each of these merely continued the existing state of play preventing fishing in the doughnut hole. The assessments of the Bering Sea pollock biomass suggest that the limit for a recommencement of fishing has not even been approached.¹³¹ Some small scale trial fishing has taken place, but as is evident from the table showing the levels of catch, the trial fishery is insignificant.¹³²

¹²⁹ Balton, *supra* note 13, p.29

¹³⁰ Each State party reports any enforcement efforts in the doughnut hole at the annual meeting: *Report of the Second Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Seattle, 5-7 November 1997, para. 6.H; *Report of the Second Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Tokyo, 30 November - 4 December 1998, paras 6.H.1-2

¹³¹ The estimated biomass for the 1996 meeting was approximately 700,000 metric tonnes. In 1997, it was estimated at approximately 342,000 tonnes. The limit for harvesting is 1.67 million tonnes: <<http://russia.shaps.hawaii.edu/fishing/regulatory/fish-cmpr.html>>

¹³² Approval for two vessels only from each party, with scientific observers from other States and advance notice of voyages was approved at both the first and second Annual Meetings: <<http://russia.shaps.hawaii.edu/fishing/>>

On some levels, cooperation between the parties is high. All the States formerly active in the doughnut hole have signed on to the regime, and there is no evidence that illegal fishing is a significant problem. Liaison through scientific programmes is strong, and the United States is presently sponsoring an effort to better coordinate the regulation of the Bering Sea ecosystem, through a Central Bering Sea Management System.¹³³ Although the Bogoslof Island Specific Area is in the United States EEZ, the US has actively sought the cooperation of other parties to conduct research in the area.¹³⁴ Similarly, trial fishing has been regularly conducted in the doughnut hole¹³⁵, and in 1998 Russia organised a symposium

regulatory/fish-ccmpr.html>

¹³³ The proposal for a Central Bering Sea Management System was made by the United States at the second Annual Meeting held in Seattle on 5-7 October 1997. Parties were asked to respond through diplomatic channels through 1998: see <<http://russia.shaps.hawaii.edu/fishing/regulatory/fish-ccmpr.html>>

¹³⁴ Details of cooperative research plans are reproduced in the reports of the Scientific and Technical Committee: *Second Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Meeting of the Scientific and Technical Committee*, Seattle, 3-5 November 1997, para. 7.2.3; *Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Meeting of the Scientific and Technical Committee*, Tokyo, 30 November - 2 December 1998, para. 6.1.3

¹³⁵ See *Second Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Meeting of the Scientific and Technical Committee*, Seattle, 3-5 November 1997, para. 7.2.2; *Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Meeting of the Scientific and Technical Committee*, Tokyo, 30 November - 2 December 1998, para. 6.1.2

into Bering Sea pollock stocks.¹³⁶

How durable the regime will be is, however, a moot point. Although both the United States and Russia urged a moratorium on fishing for pollock in the doughnut hole, their own pollock catches do not appear to have been drastically affected during the same period. While the entire Russian pollock catch overall declined by almost 2 million tonnes between 1990 and 1993, in 1996, the catch had almost reached the 1990 level.¹³⁷ This would suggest the decline has more to do with the economic travails of the Russian fishing fleet than availability of the stock. The size of the American pollock catch has remained relatively stable over the last 5 years, at over 1 million tonnes each year.¹³⁸

What is apparent is the collapse of the doughnut hole has not drastically affected the size of the pollock catch of either of the two coastal States, yet the DWFN catch has declined from an unsustainable and vast catch to nothing. This has been the source of consternation to the DWFNs, and they have sought to have the

¹³⁶ See *Second Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Meeting of the Scientific and Technical Committee*, Seattle, 3-5 November 1997, para. 7.2.2

¹³⁷ C.G. Pautzke, *Russian Far East Fisheries Management*, (Seattle: North Pacific Fishery Management Council, 1997) <<http://www.fakr.noaa.gov/npfmc/rfe-all.htm>>

¹³⁸ The INPFC noted a slow decline in the US pollock fishery prior to that organization's dissolution: *International North Pacific Fisheries Commission, Annual Report 1992/93*, 21 February 1993, pp.8-9

formula for the calculation of the AHL, in the absence of consensus, revised. At the 1997, the DWFNs noted that the size of the doughnut hole biomass, using the Specific Area as a guide, declined¹³⁹, in spite of there being no fishing.¹⁴⁰ If the decline was due to natural causes, it was argued that these fish could have been removed from the ecosystem without harm, and therefore some fishing ought to have been possible.¹⁴¹ The DWFNs therefore supported taking pollock¹⁴², based

¹³⁹ The estimated biomass for the 1996 meeting was approximately 700,000 metric tonnes. In 1997, it was estimated at approximately 342,000 tonnes: <<http://russia.shaps.hawaii.edu/fishing/regulatory/fish-ccmpr.html>>. In 1998 the estimated biomass had risen to 720,000 metric tonnes: *Report of the Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Tokyo, 30 November - 4 December 1998, para 5.6.1.b

¹⁴⁰ In fact the decline was potentially far greater. Two surveys of the Specific Area took place in 1997. A US survey indicated a biomass for the Specific Area of 342,000 tonnes, which was used by the parties to calculate the doughnut hole biomass. A Korean survey in the same year produced an estimate of 13,274 tonnes: *Second Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Meeting of the Scientific and Technical Committee*, Seattle, 3-5 November 1997, para. 7.1.7. Given neither figure approached a level where an AHL above zero could be calculated, it made little difference which figure received support.

¹⁴¹ The observation that the resource had declined in spite of the moratoria, and therefore the parties ought to have caught the fish before they dies was made by the Japanese delegation in the 1997 Scientific and Technical Committee Meeting: *Second Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Meeting of the Scientific and Technical Committee*, Seattle, 3-5 November 1997, para. 7.1.12

¹⁴² The proposal was made by Korea, and was "fundamentally supported" by Japan, China and Poland: *Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Meeting of the Scientific and Technical Committee*, Tokyo, 30 November - 2 December 1998, paras 6.2.3-

on the fraction of biomass present being applied to the 130,000 metric tonne minimum.¹⁴³ The proposal was rejected by Russia and the United States.¹⁴⁴

The DWFNs also noted the increasing dissatisfaction of their nationals who had previously fished in the doughnut hole.¹⁴⁵ This suggests some degree of dissatisfaction growing with the present arrangement, and DWFN support of the regime may waver if they perceive that the coastal States, particularly the United States in its management of the critical specific area north of Bogoslof Island¹⁴⁶,

6.2.4

¹⁴³ This was based on a Korean proposal submitted to the 1998 Annual Meeting. The proposal also sought an equal division of the AHL between the parties. The proposal is reproduced in *Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea: Report of the Meeting of the Scientific and Technical Committee*, Tokyo, 30 November - 2 December 1998, Attachment 5

¹⁴⁴ *Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Tokyo, 30 November - 4 December 1998, paras 6.E.16

¹⁴⁵ *Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Tokyo, 30 November - 4 December 1998, paras 6.E.3

¹⁴⁶ Scientific evidence suggests a link between the doughnut hole stock and those in the EEZs, particularly to the Bogoslof Island area within the US Zone. Canfield notes a figure of 80% of doughnut hole pollock come from the Bogoslof area: Canfield, *supra* note 13, p.261. The US has maintained a moratorium directed taking of pollock in the Bogoslof Island area during the currency of the moratorium in the doughnut hole, and the operation of the Convention: *Report of the Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Tokyo, 30 November - 4 December 1998, para. 6.E.12

are harvesting at levels which are impeding the recovery of the high seas stock.¹⁴⁷ At the meeting 1998 Poland used US documentation concerning fishery exploitation rates in other parts of the Bering Sea as a justification for accepting a Korean proposal for an AHL greater than zero, although whether this will translate in the future to explicit criticism is not clear.¹⁴⁸

Additional pressures may be brought to bear by events affecting the Sea of Okhotsk "peanut hole", an area of high seas in the centre of the Sea of Okhotsk, entirely surrounded by the Russian EEZ.¹⁴⁹ As with the doughnut hole, there was great pressure placed by DWFN vessels on the pollock fishery in the peanut hole,

¹⁴⁷ Oude Elferink has noted that the withdrawal of foreign fishing vessels from the high seas areas in the Bering Sea and the Sea of Okhotsk have decreased the amount of pollock available on the world market, and this has had the effect of raising the price for the fish. This has also worked to the advantage of the two coastal States: A.G. Oude Elferink, "The Sea of Okhotsk Peanut Hole: *De Facto* Extension of Coastal State Control" (1997) 2 *Polar Oceans Reports* p.1 at p.15

¹⁴⁸ *Report of the Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Tokyo, 30 November - 4 December 1998, para. 6.E.3. Similarly, China and Japan in the 1997 Meeting urged that while the AHL was set at zero the coastal States should take appropriate conservation measures in their EEZs: *Report of the Second Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Seattle, 5-7 November 1997, paras 6.E.3 - 6.E.4

¹⁴⁹ See generally A.G. Oude Elferink, "Fisheries in the Sea of Okhotsk High Seas Enclave - The Russian Federation's Attempts at Coastal State Control" (1995) 10 *International Journal of Marine and Coastal Law* p.1; Meltzer, *supra* note 46, pp.290-293

however the approach of the Russian authorities in resolving the problem was somewhat different. After initially moving toward a unilateral solution through an assertion of jurisdiction¹⁵⁰, Russia was subsequently able to obtain agreement from DWFNs not to fish in the peanut hole, in return for guaranteed quotas of pollock in the Russian EEZ.¹⁵¹ The long term success of these arrangements is open to question, as in 1997 the newly appointed head of the Kamchatka Fishing Administration indicated he favoured a "russification" of the Russia far eastern fisheries.¹⁵² Such a move may make DWFNs more interested in reviving the doughnut hole fishery, and therefore more critical of the level of coastal State fishing in the Bering Sea. Certainly if the AHL continues to remain at zero, the pressure brought by the DWFNs for some accommodation of their interests can only increase.

¹⁵⁰ In April 1993, Russia unilaterally indicated it would take responsibility for the conservation of the marine living resources of the peanut hole: see "Resolution of the Supreme Soviet of the Russian Federation on Measures to Protect the Biological Resources of the Sea of Okhotsk" (1993) *Vedimosti Soveta Narodnykh Deputatov Rossiiskoi Federatsii i Verkhovnogo Soveta Rossiiskoi Federatsii*, No.18, Item 638, 16 April 1993; cited in Oude Elferink, *supra* note 147, p.4

¹⁵¹ Of 2 million tonnes of pollock allocated for the Sea of Okhotsk, 338,000 tonnes were set aside for foreign vessels: Pautzke, *supra* note 137. See also Oude Elferink, *supra* note 147, pp.5-9. Russian military exercises staged on short notice also appear to have been a factor according to Oude Elferink: *Ibid.*, p.19

¹⁵² *Ibid.*

CHAPTER FIVE

TOWARDS A PRECAUTIONARY FISHERY: CONVENTION FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES¹

Marine Living Resource Regimes in the Antarctic

As noted in Chapter 1, the international legal arrangements concluded in the Antarctic are far more complex and intricate than those presently in operation in the Arctic.² These arrangements had, and continue to have, an influence on both the content and operation of the marine living resource management regime in the Southern Ocean. As such, it is appropriate to commence with some brief consideration of the international legal system present in the Antarctic, and the legal instruments that have some relevance to living resources and environmental

¹ Portions of this chapter have appeared previously in the following publications:

S.B. Kaye, "Legal Approaches to Polar Fisheries Regimes: A Comparative Analysis of the Convention for the Conservation of Antarctic Marine Living resources and the Bering sea Doughnut Hole Convention" (1995) 26 *California Western International Law Journal* p.75

S.B. Kaye, "CCAMLR and Southern Ocean Fisheries" in S. Bateman and D.R. Rothwell (eds), *Southern Ocean Fishing: Policy Challenges for Australia*, (Wollongong: Centre for Maritime Policy, 1998) p.75

² See Chapter 1 at p.10

protection, before turning to the Convention for the Conservation of Antarctic Marine Living Resources³ (CCAMLR).

At the core of the international law applicable to Antarctica is the Antarctic Treaty.⁴ The Treaty was concluded in 1959, following the success of the International Geophysical Year (IGY) in 1957-58. Its function was to provide a political solution to the seemingly intractable sovereignty problems present in the Antarctic, and to provide a basis for the continuance of the strong scientific cooperation begun during the IGY. In both of these aims, the Treaty can properly be regarded as a success, although it has faced a number of challenges since entering into force in 1961.⁵

Since the Antarctic Treaty was concluded, a complex set of instruments including conventions, and recommendations arising from international meetings has grown up around the Treaty itself. These instruments, collectively known as the Antarctic

³ *Convention for the Conservation of Antarctic Marine Living Resources*, done at Canberra 20 May 1980, entered into force 7 April 1981: UKTS No.48 (1982) [hereafter referred to as CCAMLR]

⁴ *Antarctic Treaty*, done at Washington on 1 December 1959, entered into force 23 June 1961: 402 UNTS 71

⁵ For a discussion of the IGY and background to the negotiation of the Antarctic Treaty see Auburn at p.104; G.D. Triggs, *International Law and Australian Sovereignty in Antarctica*, (Sydney: Legal Books, 1986) pp.134-136; E.J. Saurie, *The International Law of Antarctica*, (New Haven: New Haven Press, 1992) pp.301-302; A. Watts, *International Law and the Antarctic Treaty System*, (Cambridge: Cambridge University Press, 1992) pp.125-126

Treaty System (ATS), have added to the range and variety of human activity subject to regulation and international cooperation.⁶ The Antarctic Treaty itself made virtually no reference to the environment, and appeared to specifically exclude reference to the Southern Ocean surrounding the continent.⁷ Subsequent agreement has resulted in a detailed and complex body of international law dealing with environmental protection, human activities in Antarctica and the conservation of marine living resources, built upon the original political compromise reached in the Antarctic Treaty.⁸

There are three instruments relevant to marine management in the Antarctic: the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR),

⁶ The term "Antarctic Treaty System" is now so firmly entrenched that it was defined in Article I of the Protocol on Environmental Protection to the Antarctic Treaty (hereafter referred to as the Madrid Protocol) as "the measures in effect under [the Antarctic] Treaty, its associated separate international instruments in force and the measures in effect under those instruments": *Protocol on Environmental Protection to the Antarctic Treaty*, done at Madrid 4 October 1991, entered into force 14 January 1998: reprinted 30 ILM 1455 (1992) [hereafter referred to as Madrid Protocol]

⁷ This stems from Article VI of the Antarctic Treaty. Its impact will be considered below.

⁸ In addition to formal treaties within the ATS, Article IX(4) of the Antarctic Treaty permits the making of recommendations which can become binding on the Antarctic Treaty Consultative Parties (ATCPs). The best known example are the Agreed Measures for the Conservation of Antarctic Fauna and Flora: reprinted in W.M. Bush, *Antarctica and International Law*, (London: Oceana, 1982) Vol.1, pp.146-169

the Convention for the Conservation of Antarctic Seals⁹, and the 1991 Madrid Protocol on Environmental Protection. To deal with the last first, the Madrid Protocol sets down basic principles in relation to the human activity in the Antarctic environment, including the undertaking of environmental impact assessments¹⁰ and the guidelines for the disposal of waste.¹¹ The principles seek to preserve the Antarctic's aesthetic and wilderness value, and indicates *inter alia* that activities in the Antarctic Treaty Area should avoid bringing about detrimental changes in the marine environment or to the distribution, abundance or populations of species of fauna.¹² This embodiment of a precautionary approach to human endeavours in the region theoretically impacts upon any utilisation of fisheries in the Southern Ocean south of 60° South, but only insofar as it provides the general regulation of

⁹ *Convention for the Conservation of Antarctic Seals*, done at London on 1 June 1972, entered into force 10 November 1978: reprinted in 11 ILM 251 (1972)

¹⁰ Annex I Madrid Protocol

¹¹ Annex III Madrid Protocol

¹² Article 2, Madrid Protocol provides:

The Parties commit themselves to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems and thereby designate Antarctica as a natural reserve, devoted to peace and science.

Article 3 establishes the environmental principles by which the objective in Article 2 can be achieved. It lays great stress on planning and environmental impact assessment of all activities to minimise threats to the entire Antarctic ecosystem. Although Article 3 does not refer to precaution directly, it is clear that the principles are entirely consistent with the application of a precautionary approach.

certain types of human activity.¹³ Certainly the Protocol does not seek to describe the methods by which fishing is to take place nor the permissible size of catches, nor is there any evidence that the ATCPs wish to adapt the Protocol to address living resource management.

Even if the attitude of the ATCPs was to change, and they moved to extend the impact of the Protocol to fishery activities, it is arguable that the Protocol has no application offshore. The Protocol operates within the area of the Antarctic Treaty, which extends to all land and ice shelves south of 60° South under Article VI of the Antarctic Treaty.¹⁴ Article VI also provides that nothing in it affects or prejudices in any way the exercise of any rights in international law on the high seas.¹⁵ This

¹³ Chopra and Hansen note that the Madrid Protocol was designed to reiterate and reinforce the conservation-oriented measures established by CCAMLR but not to displace the earlier regime: S. Chopra and C. Hansen, "Deep Ecology and the Antarctic Marine Living Resources: Lessons for Other Regimes" (1997) 3 *Ocean and Coastal Law Journal* p.117 at pp.142-143

¹⁴ Vidas suggests the ambiguity in the application of Article VI of the Antarctic Treaty was entirely deliberate, and employed to avoid conflict between the parties: D. Vidas, "The Antarctic Treaty System and the Law of the Sea: A New Dimension Introduced by the Madrid Protocol" (1993) *International Antarctic Research Project* No.1, pp.7-9

¹⁵ See generally A. Van der Essen, "The Application of the Law of the Sea to the Antarctic Continent" in F. Orrego Vicuña, *Antarctic Resources Policy* (Cambridge: Cambridge University Press, 1983) p.231 at p.233; M.T. Infante, "The Continental Shelf of Antarctica: Legal Implications for a Regime on Mineral Resources" in *ibid.*, p.243 at pp.245-247; J.G. Gardam, "Management Regimes for Antarctic Marine Living Resources: An Australian Perspective" (1985) 15 *Melbourne University Law Review* p.279 at p.285; F.M. Auburn, *Antarctic Law and Politics* (Bloomington: Indiana University Press, 1982) pp.219-220

suggests that the Antarctic Treaty, and therefore any Protocol or other measures made pursuant to it, is limited to the terrestrial environment. Further, given the right to fish on the high seas is a right vested in States in international law, it is arguable that even if the Treaty can apply to offshore areas, it cannot be used in such a way so as to put a fetter on fishing.¹⁶

In respect of the former issue, while it is likely that the original intention of the consultative parties was to restrict the operation of the Antarctic Treaty, that cannot be said to represent the position today. A number of resolutions¹⁷, and portions of the Protocol itself, such as those dealing with the disposal of waste at sea¹⁸, make it plain that the ATS does operate offshore.¹⁹ As to the second issue, the question

¹⁶ D.R. Rothwell, "The Antarctic Treaty System and the Southern Ocean" in S. Bateman and D.R. Rothwell (eds), *Southern Ocean Fishing: Policy Challenges for Australia*, (Wollongong: Centre for Maritime Policy, 1998) p.5 at pp.8-9; cf. R. Lefeber, "The Exercise of Jurisdiction in the Antarctic Region and the Changing Structure of International Law: The International Community and Common Interests" (1990) 21 *Netherlands Yearbook of International Law* p.81 at p.132

¹⁷ For example see Antarctic Treaty Recommendation IV-16: reprinted in Bush, *supra* note 8, Vol.1, p.188; Recommendation IV-17: *Ibid.*; Recommendation IV-21: *Ibid.*, pp.190-191; Recommendation VI-13: *Ibid.*, pp.242-243

¹⁸ Annex IV, Madrid Protocol deals with marine pollution.

¹⁹ See M.T. Infante, "The Continental Shelf of Antarctica: Legal Implications for a Regime on Mineral Resources" in F. Orrego Vicuña (ed.), *Antarctic Resources Policy*, (Cambridge: Cambridge University Press, 1983) p.253 at pp.256-259; Auburn, *supra* note 15, pp.219-220; Gardam, *supra* note 15, p.285; J.W. Kindt, "Ice-Covered Areas and the Law of the Sea: Issues Involving Resource Exploitation and the Antarctic Environment" (1988) 14 *Brooklyn Journal of International Law* p.27 at p.39

of the applicability of the Antarctic Treaty or the Madrid Protocol being used as the vehicle to manage Antarctic fisheries has never been addressed, as the parties have always intended that this function should be left to CCAMLR.²⁰

The Convention for the Conservation of Antarctic Seals is a specialised convention dealing wholly with certain species of seal found in the area south of 60° South.²¹ While an important step in the increasing importance environmental protection has come to have within the ATS, the Seal Convention is of limited utility for two reasons. First, there is some debate as to whether it was intended to apply to the Southern Ocean south of 60° South, or merely to the land and ice shelves within the Treaty Area.²² Second, from a practical point of view, the Seal Convention has been a dead letter from before it entered into force. No commercial sealing has taken place in Antarctica for more than a quarter of a century, and given the high costs involved in operating in so remote a region, and the increasingly depressed

²⁰ The *raison d'être* of CCAMLR was to provide for the regulation of marine living resources. The Protocol was negotiated subsequently to deal with environmental protection. Its foci are pollution control, environmental impact assessment and wildlife protection. It was not negotiated out of any perception of inadequacy or dissatisfaction with CCAMLR, and was not intend to replace it, or supersede its operation in any way.

²¹ The content and operation of the Seal Convention has recently been examined separately by Rothwell and Joyner: D.R. Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge University Press, 1996) pp.121-123; C.C. Joyner, *Governing the Frozen Commons*, (Columbia: University of South Carolina Press, 1998) pp.120-122

²² This is the same issue as considered above in the context of the Madrid Protocol at p.381

and hostile state of the world trade in fur, it is unlikely to ever recommence.²³

CCAMLR - Negotiation

The history of human activity in the Southern Ocean has produced a relatively easily identifiable pattern that has been repeated on a number of occasions. The pattern consists of short periods of intensive exploitation of natural resources, followed by the collapse of these resources, and finally, an extremely slow recovery. In the 19th Century, sealers plundered most of the sub-Antarctic Islands of their fur seals, almost to the point of extinction.²⁴ Whaling in the 20th Century prior to 1960 saw Blue, Humpback and Southern Right whales almost completely exterminated from southern waters, emphasised by the fact these species are still considered endangered over 20 years since they were last commercially exploited.²⁵ In the 1970s, Russian and Japanese vessels ruthlessly harvested Antarctic finfish in the waters around South Georgia and the South Sandwich

²³ Note however reports in 1988 that the USSR had engaged in commercial sealing operations. At the review of the operation of the Seal Convention in September 1988, it was found there was insufficient evidence to substantiate the claims: see A. Marchal, "Convention for the Conservation of Antarctic Seals: 1988 Review of Operations" (1989) 25 *Polar Record* p.142; D.R. Rothwell, "Environmental Regulation in the Southern Ocean" in J. Crawford & D.R. Rothwell (eds), *The Law of the Sea in the Asian Pacific Region*, (Dordrecht: Martinus Nijhoff, 1995) p.93 at pp.102-103

²⁴ G.E. Fogg, *A History of Antarctic Science* (Cambridge: Cambridge University Press, 1992) pp.38-40

²⁵ For example the blue, humpback and southern right whales are all listed as endangered species under the Convention on International Trade of Endangered Species of Wild Fauna and Flora, done at Washington on 3 March 1973, entered into force 1 July 1975: reprinted AustTS 1976 No.23

Islands, reducing species to biomasses of only a few thousand tonnes which, a year or two earlier, had seen up to 400,000 tonnes of the same stock caught in a single season.²⁶

Against this background of untrammelled exploitation and collapse, and fearing the destruction of the entire Antarctic marine ecosystem if such destruction were ever allowed to take place again, the Antarctic Treaty States negotiated CCAMLR in the late 1970s. Negotiations were initiated following a resolution at the ninth Antarctic Treaty Consultative Party meeting in London in September and October of 1977²⁷, and a special meeting of the Consultative Parties in 1978.²⁸ When concluded in 1980, CCAMLR was designed to regulate exploitation of the marine living resources of the Southern Ocean, to prevent a recurrence of past disasters, particularly to the key species in the Antarctic ecosystem, krill.²⁹ With small

²⁶ K-H. Kock, *Antarctic Fish and Fisheries* (Cambridge: Cambridge University Press, 1992) pp.183-89

²⁷ Bush, *supra* note 8, Vol.1, pp.348-351; see also Resolution VIII-10 from the 1975 Oslo ATCP meeting, where the ATCP's began to explore the possibility of a convention: *Ibid.*, pp.323-324

²⁸ B. Mitchell & R. Sandbrook, *The Management of the Southern Ocean* (London: International Institute for Environment and Development, 1980) p.12; D.M. Edwards & J.A. Heap, "Convention on the Conservation of Antarctic Marine Living Resources: A Commentary" (1981) 20 *Polar Record* p.353 at pp.354-356; Gardam, *supra* note 15, pp.293-294

²⁹ See J.A. Heap, "Has CCAMLR Worked? Management Policies and Ecological Needs" in A. Jørgensen and W. Østreng, *The Antarctic Treaty System in World Politics*, (New York: St Martin's Press, 1991) p.43 at pp.43-49

commercial harvesting of krill stocks beginning to increase, there was a real fear that a continued lack of regulation would lead to over-exploitation of krill.³⁰ A collapse of the krill stocks, which are central to the entire Antarctic ecosystem, would impact upon all other species in the region, potentially destroying the ecology of the Southern Ocean.³¹

Additional incentive also came from the increasing likelihood of UN involvement in regulation in the Antarctic marine environment, something which the ATCPs were committed to avoid.³² In 1977, the FAO Committee on Fisheries had examined

³⁰ M.J. Peterson, "Antarctica and the New Law of the Sea" (1986) 16 *Ocean Development and International Law* p.137 at pp.153-156

³¹ See the discussion by Heap: Heap, *supra* note 29, pp.43-49; see also B.A. Boczek, "The Protection of the Antarctic Ecosystem: A Study in International Environmental Law" (1983) 13 *Ocean Development and International Law* p.347 at pp.374-375; Edwards & Heap, *supra* note 28, p.354; G. Billen and C. Lancelot, "The Functioning of the Antarctic Ecosystem: A Fragile Equilibrium" in J. Verhoeven, P. Sands and M. Bruce (eds), *The Antarctic Environment and International Law*, (London: Graham & Trotman, 1992) p.39

³² The ATCPs have consistently rejected any United Nations involvement in the regulation or administration of the Antarctic. The UN has periodically challenged the validity of the ATS, and the General Assembly has resolved that the continent should be treated as part of the common heritage of mankind: R. Hussain, "The Antarctic: Common Heritage of Mankind" in J. Verhoeven, P. Sands and M. Bruce (eds), *The Antarctic Environment and International Law*, (London: Graham & Trotman, 1991) p.89; E. Suy, "Antarctica: Common Heritage of Mankind?" in J. Verhoeven, P. Sands and M. Bruce (eds), *The Antarctic Environment and International Law*, (London: Graham & Trotman, 1991) p.93; E.S. Tenenbaum, "A World Park in Antarctica: The Common Heritage of Mankind" (1990) 10 *Virginia Environmental Law Journal* p.109; see generally P.B. Payoyo, *Cries of the Sea: World Inequality, Sustainable Development and the Common Heritage*

the need for some regional instrument to deal with Southern Ocean fisheries given the potential significance of their contribution to world fishery output.³³ An ATS based marine environmental convention was seen by the ATCPs as infinitely preferable to a United Nations-sponsored instrument³⁴, and negotiations towards concluding an agreement were fast-tracked.³⁵ Stokke asserts the role of the ATCPs in Antarctica was potentially at risk if a solution acceptable to external States was not reached, so a regime that preserved the Antarctic *status quo* while

of Humanity, (The Hague: Martinus Nijhoff, 1997) p.470

- ³³ Kock notes in mid-1970s the United Nations Development Programme Governing Council undertook an extensive study of the (then) current knowledge on the magnitude and distribution of marine living resources in the Southern Ocean. This was intended as the preparatory phase for a Southern Ocean Fisheries Survey to be undertaken by FAO: Kock, *supra* note 26, p.210; see Gardam, *supra* note 15, p.290
- ³⁴ M. Howard, "The Convention on the Conservation of Antarctic Marine Living Resources: A Five Year-Review" (1989) 38 *International and Comparative Law Quarterly* p.104 at p.111; P. Quigg, *A Pole Apart* (New York: New Press, 1983) pp.167-168; F. Zegers, "The Canberra Convention: Objectives and Political Aspects of its Negotiations" in F. Orrego Vicuña, *Antarctic Resources Policy* (Cambridge: Cambridge University Press, 1983) p.149 at p.152
- ³⁵ See Bush, *supra* note 8, Vol.1, pp.348-351; Barnes is of the view the ATCPs intended to invite the participation of the FAO and other States within CCAMLR, but rather than their participation in the initial negotiations, it was intended to present the FAO with a *fait accompli*: United States Senate, *Hearing before the National Ocean Policy Study of the Committee on Commerce, Science, and Transportation*, 95th Congress, 14 June 1978 (Washington: US Government Printing Office, 1978) p.36; see B.W. Davis, "The Legitimacy of CCAMLR" in O.S. Stokke & D. Vidas (eds), *Governing the Antarctic: The Effectiveness and Legitimacy of the Antarctic Treaty System*, (Cambridge: Cambridge University Press, 1996) p.233 at p.234

addressing wider world interests was essential.³⁶

Participation in the CCAMLR negotiations was initially restricted to the ATCPs, reflecting the concern of these States to retain their control over Antarctic affairs.³⁷ However, it was evident that CCAMLR would potentially have a greater sphere of operation, and so steps were taken to widen its participation base. First, it was concluded as a convention independent from the Antarctic Treaty, although preserving the same political compromises that allowed the Antarctic Treaty to operate effectively. This would take into account States who might wish to fish in the Southern Ocean, but would not be interested in undertaking an Antarctic research programme. Second, CCAMLR could not operate in a vacuum, but would have to have some interaction with other fisheries and scientific agencies. Accordingly, in the final phase of negotiation, after a draft text had been agreed to by the ATCPs, a number of bodies were invited to participate as observers during the negotiations, including the FAO, the Inter-Governmental Oceanographic Commission, the International Whaling Commission and the Scientific Committee

³⁶ O.S. Stokke, "The Effectiveness of CCAMLR" in O.S. Stokke and D. Vidas (eds), *Governing the Antarctic: The Effectiveness and Legitimacy of the Antarctic Treaty System*, (Cambridge: Cambridge University Press, 1996) p.120 at p.126

³⁷ The initial negotiations were held under the auspices of the Antarctic Treaty, hence restricting participation to ATCPs. See Recommendation IX-2(3), 19 September 1977: see Bush, *supra* note 8, p.350

on Oceanic Research.³⁸

Approach to Management

The ATCPs principal motivation in the negotiation of CCAMLR was the protection of the Antarctic environment, and this saw the parties move towards a management strategy based on the ecosystem, rather than on a particular species of commercial interest. The emphasis on ecosystem management was manifested even before the first formal negotiations commenced, being reflected in interim guidelines for Antarctic marine living resource conservation.³⁹ The interim guidelines stressed

³⁸ A list of the participating organizations is provided by Bush: Bush, *supra* note 8, Vol.1, p.394

³⁹ Recommendation IX-2(2), 19 September 1977 provided:

1. [The ATCPs] observe the following interim guidelines pending entry into force of the definitive regime for Antarctic Marine Living Resources:
 - (a) they cooperate as broadly and comprehensively as possible in the mutual exchange of statistics relating to catch of Antarctic Marine Living Resources;
 - (b) they should show the greatest possible concern and care in the harvesting of Antarctic Marine Living Resources so that it does not result in the depletion of stocks of Antarctic marine species or *jeopardising the Antarctic marine ecosystem as a whole*;
 - (c) they urge those Governments which are not parties to the Antarctic Treaty and which engage in activities involving the use of the marine living resources of Antarctica to take into account these guidelines;
2. They review these interim guidelines as and when necessary and in any event following the conclusion of the definitive regime with a view to their future elaboration in the light of the provisions of the definitive regime.

My emphasis. Reprinted in Bush, *supra* note 8, Vol.1, p.349

the need to consider individual stocks and the impact on the Antarctic ecosystem, and significantly were contained within the body of a single Recommendation with the need to coordinate scientific investigation, including the BIOMASS programme.⁴⁰

Subsequent negotiation did not remove this emphasis upon a broad ecosystem-based approach to resource conservation and this is reflected in the provisions of the Convention.⁴¹ To begin with, the Convention Area reflects biological realities rather than political ones. The Antarctic Treaty Area extends south of 60° South⁴², an entirely arbitrary line that bears no relation to the range or habitats of creatures in the Southern Ocean. An environmental regime installed to conserve

⁴⁰ The Biological Investigations of Marine Antarctic Systems and Stocks (BIOMASS) was a ten year study of Antarctic marine ecosystems coordinated through SCAR: Kock, *supra* note 26, p.211; Joyner, *supra* note 21, 86, p.122; R.T. Scully, "The Convention on the Conservation of Antarctic Marine Living Resources - A Case Study" in L.M. Alexander, S. Allen & L.C. Hansen (eds), *New Developments in Marine Science and Technology: Economic, Legal and Political Aspects of Change*, (Honolulu: Law of the Sea Institute, 1989) p.138 at p.139

⁴¹ The most detailed discussion of the factors dominant in the negotiation of CCAMLR is that of Barnes: J.N. Barnes, "The Emerging Convention on the Conservation of Antarctic Marine Living Resources: An Attempt to Meet the New Realities of Resource Exploitation in the Southern Ocean" in J.I. Charney (ed.), *The New Nationalism and the Use of Common Spaces* (Totowa: Allanheld Osman, 1982) p.239 especially at pp.242-260

⁴² Article VI, Antarctic Treaty. It has been suggested that the Antarctic Convergence was suggested as the appropriate boundary for the Treaty Area, but was rejected as too imprecise: D. Shapley, *The Seventh Continent: Antarctica in a Resource Age*, (Washington DC: Resources for the Future, 1985) p.95

and manage wildlife using 60° South as its boundary would necessarily be vulnerable, as no matter how effectively it performed within its area of control, the potential for unregulated abuse of Antarctic fauna north of 60° South would still exist.

The solution was to give CCAMLR boundaries that reflected ecological realities.⁴³ In the Southern Ocean, a clear divide exists where cold Antarctic waters are subducted beneath warmer more northerly waters. This divide, known as the Antarctic Convergence, is up to 50 miles wide, and a substantial temperature difference exists between the water in the north and that in the south. It remains in approximately the same location each year and forms a natural barrier that separates Antarctic and sub-Antarctic species from fauna in more temperate waters. Almost no creatures cross the Convergence, with the exception of migratory whales.⁴⁴ As such, it formed an obvious boundary to delimit the ecology of the region, and Article I of CCAMLR sets the Convention Area as being south of the Antarctic

⁴³ Joyner notes the suggestion to use the Antarctic Convergence can be traced back to the FAO considering its use to mark the Southern Ocean for statistical purposes: Joyner, *supra* note 21, 86, p.136

⁴⁴ Discussions as to the nature of the Antarctic Convergence, and its impact upon sea life are to be found at: Kock, *supra* note 26, pp.1-6 and pp.33-43; G.A. Knox, "The Living Resources of the Southern Ocean" in F. Orrego Vicuña, *Antarctic Resources Policy*, (Cambridge: Cambridge University Press, 1983) p.21 at pp.22-24 & pp.26-30

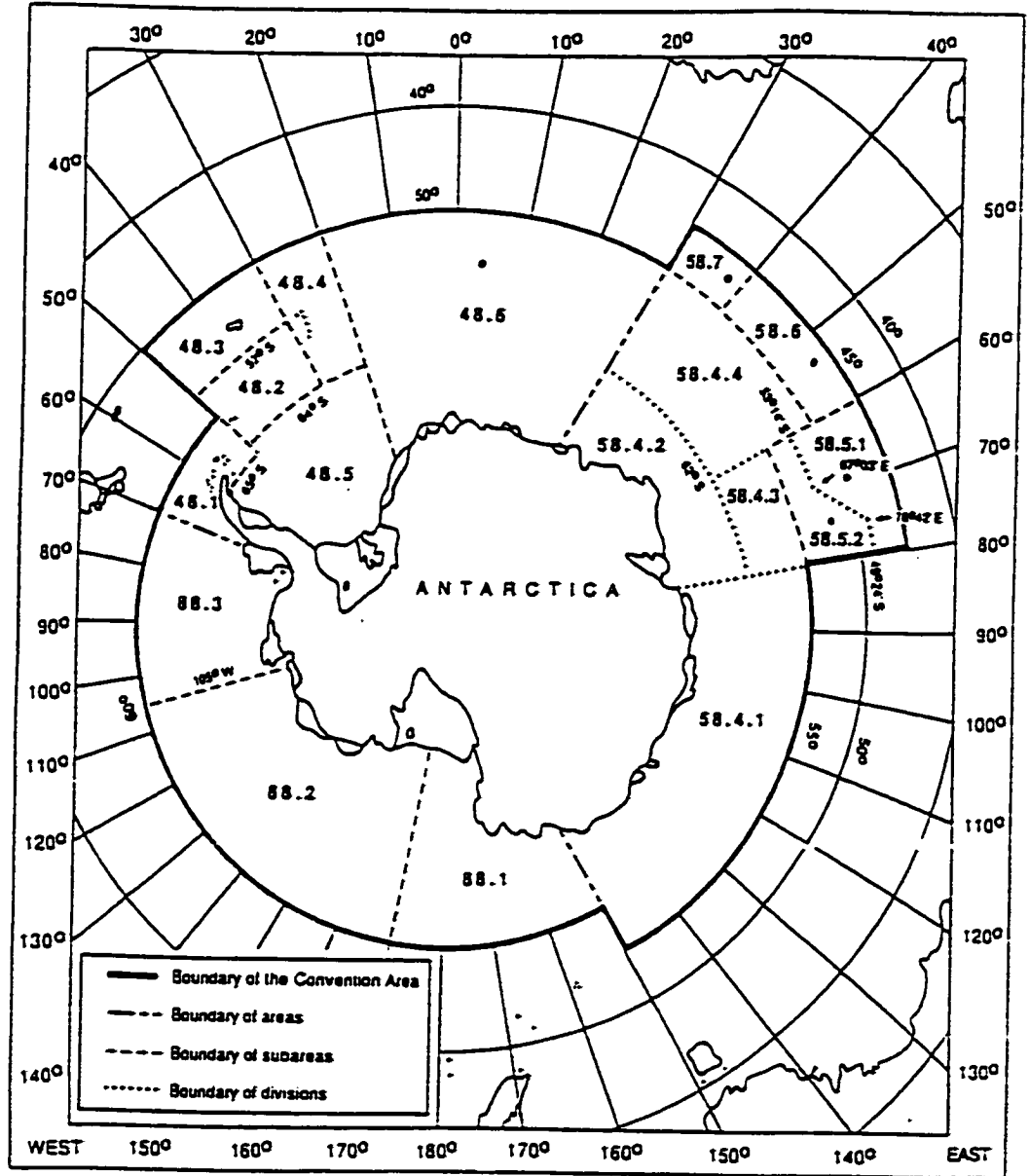
Convergence, although specifying a deemed course⁴⁵ for it, to avoid confusion.⁴⁶ The vast area it encompasses is described by Joyner as "the largest targeted conservation area on Earth".⁴⁷

⁴⁵ Frank notes that there may have been some political considerations taken into account in the determining the precise course of the line, as it only approximates the path of the Antarctic Convergence: R.F. Frank, "The Convention on the Conservation of Antarctic Marine Living Resources" (1983) 13 *Ocean Development and International Law* p.291 at p.302

⁴⁶ Article I(4), CCAMLR deems the Antarctic Convergence to be a line joining the following points along the various parallels and meridians: 50°S, 0°; 50°S, 30°E; 45°S, 30°E; 45°S, 80°E; 55°S, 80°E; 55°S, 150°E; 60°S, 150°E; 60°S, 50°W; 50°S, 50°W; 50°S, 0°. The FAO has subsequently amended its statistical boundaries in the Southern Ocean, treating the CCAMLR Area separately from other ocean statistical areas. The Indian Ocean sector (between 30°E and 150°E) is designated Area 58; the Pacific sector (between 150°E and 70°W) is designated Area 88; and the Atlantic sector (between 70°W and 30°E) is designated Area 48.

⁴⁷ Joyner, *supra* note 21, 86, p.123

CCAMLR Treaty Area



In addition to setting a Convention area reflecting ecological reality, CCAMLR also explicitly defines the Antarctic marine ecosystem, and does so in an expansive fashion:

The Antarctic marine ecosystem means the complex of relationships of Antarctic marine living resources with each other and with their physical environment.⁴⁸

This potentially extends the operation of the Convention to creatures that would not lie within the scope of a fisheries convention, such as birds, and to the environment where all of the creatures live. In practice, CCAMLR has chosen not to pursue an expansive path, and has generally sought to regulate matters close to what might be regarded as its "core function", and shied away from conservation measures directed at physical habitat or dependent species⁴⁹, however the potential to do so remains in place. The Convention itself reflects this in that it expressly indicates that nothing in it is to derogate from either the Convention for the Conservation of Antarctic Seals or the International Convention for the Regulation of Whaling.⁵⁰ As such, although whales and seals are important parts of the Antarctic ecosystem, CCAMLR has had no direct role in their management.

⁴⁸ Article I(3), CCAMLR. "Antarctic marine living resources" are defined in Article I(2), CCAMLR as:

Antarctic marine living resources means the populations of fin fish, molluscs, crustaceans and all other species of living organisms, including birds, found south of the Antarctic Convergence.

⁴⁹ A discussion of the content of the various conservation measures promulgated under CCAMLR's auspices follows below at p.422

⁵⁰ Article VI, CCAMLR. See Edwards & Heap, *supra* note 28, p.361

The purposes of CCAMLR also stress the ecosystem-based approach. Article II states the objective of the Convention is conservation of Antarctic marine living resources, and harvesting of those resources is to take place only in accordance with named principles. These are to ensure stable recruitment of stocks by never permitting stocks to fall below the level that allows maximum annual increment⁵¹; to maintain ecological relationships between harvested, dependent and related species and the restoration of depleted populations⁵²; and the prevention or minimisation of risk of changes to the marine ecosystem not potentially reversible over two or three decades.⁵³

These principles differ markedly from those underlying other fisheries or marine

⁵¹ Article II(3)(a), CCAMLR provides:

prevention of decrease in the size of any harvested population to levels below those which ensure its stable recruitment. For this purpose its size should not be allowed to fall below a level close to that which ensures the greatest net annual increment;

⁵² Article II(3)(b), CCAMLR provides:

maintenance of the ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted populations to the levels defined in sub-paragraph (a);

⁵³ Article II(3)(c), CCAMLR provides:

prevention of changes or minimization of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades, taking into account the state of available knowledge of the direct and indirect impact of harvesting, the effect of the introduction of alien species, the effects of associated activities on the marine ecosystem and of the effect of environmental changes, with the aim of making possible the sustained conservation of Antarctic marine living resources.

resource conventions.⁵⁴ Instead of focusing on a single species or class of species, the entire marine ecosystem is in issue. Further, while recognising Antarctic marine resources can be harvested, that harvest cannot endanger the ecological relationships between all fauna in the CCAMLR Area. That this would cover non-commercially exploited species was the intention of the parties, even prior to the commencement of formal negotiations.⁵⁵ There was a real concern during the negotiations that what impacted upon a single species in the food chain would impact upon all species in the chain to varying degrees, and the vulnerability that this interdependency engendered required a new approach to deal with it.⁵⁶ There is no reference to maximum sustainable yield, as it was recognised in the 1970s by Antarctic scientists that the concept was of little utility in dealing with krill with its central position in the food chain, and was inconsistent with an ecosystem-based approach.⁵⁷

More significantly, it is clear that these purposes contain a provision equivalent to a

⁵⁴ Burke noted in 1994 that CCAMLR remained the only marine living resource convention based on an ecosystem management approach: W.T. Burke, *The New International Law of Fisheries*, (Oxford: Clarendon Press, 1994) p.114; see also M.H. Belsky, "Management of Large Marine Ecosystems: Developing a New Rule of Customary International Law" (1985) 22 *San Diego Law Review* (1985) p.733 at pp.761-762; note that such an approach is used in UNESCO's *Man and the Biosphere Programme*: Howard, *supra* note 34, p.113

⁵⁵ Bush, *supra* note 8, Vol.1, p.350

⁵⁶ Edwards & Heap, *supra* note 28, pp.355-356

⁵⁷ Fogg, *supra* note 24, p.239

precautionary approach to managing the ecosystem. By urging States to prevent or minimise the risk of changes that are not potentially reversible in a period of two to three decades, CCAMLR is effectively quantifying the level of risk applicable to the exercise of precaution. For an activity to take place, it must be demonstrated that changes caused to the ecosystem as a result are reversible within the stated time period, or the activity will infringe the objectives of the CCAMLR regime.⁵⁸ This equates with the reversal of the burden of proof and the mechanism of risk assessment intrinsic to precaution. The absence of an explicit reference to precaution itself is not surprising, given that CCAMLR was negotiated prior to the appearance of the precautionary principle in international law, when it was only a recent innovation in the domestic law of West Germany.⁵⁹ With the principle's subsequent emergence, the parties to CCAMLR have recognised that the practical effect of the objectives of the Convention are essentially reflective of a precautionary approach.⁶⁰

⁵⁸ Compare the view of Tsamenyi and Woodhill, who indicate there is an apparent assumption that changes are human-induced changes to the ecosystem are reversible, and therefore the provision is contrary to the need for a precautionary approach: M. Tsamenyi and F. Woodhill, *Achieving Sustainable Use of Large Migratory Fish in the Indian and Southern Oceans: Eliminating Gaps in the International Regime*, Study prepared for WWF and TRAFFIC OCEANA, 1997, p.178

⁵⁹ See discussion in Chapter 3 at p.191

⁶⁰ See discussion below at p.435. On this point also see Tsamenyi and Woodhill, *supra* note 58, pp.178-179

Membership

CCAMLR also differs from other international fisheries conventions in terms of its membership. There are effectively two classes of membership: full participation in the operation of CCAMLR; and, the status of a mere contracting party, but no rights of participation in CCAMLR meetings beyond the sending of observers. Any State which contributed to the negotiation of CCAMLR was permitted to become a full party regardless of their interest in exploiting the Southern Ocean. Subsequently, the Convention has remained open for accession to any State interested in harvesting or research⁶¹, but acceding States only receive full membership of the CCAMLR Commission while they are actively engaged in research or exploitation in the CCAMLR area.⁶² This arrangement strongly resembles that under the Antarctic Treaty with respect to the granting of consultative party status.⁶³ This guaranteed the then ATCPs a strong and ongoing position within the operation of CCAMLR, even though several of the States given full membership have never been involved in fishing or significant research in the

⁶¹ Article XXIX(1), CCAMLR provides:

This Convention shall be open for accession by any State interested in research or harvesting activities in relation to the marine living resources to which this Convention applies.

⁶² Article VII(2)(b), CCAMLR

⁶³ On the acquisition of consultative party status see G.D. Triggs, "The Antarctic Treaty Regime: A Workable Compromise or a 'Purgatory of Ambiguity'?" (1985) 17 *Case Western Reserve Journal of International Law* p.195 at pp.210-212; Bush, *supra* note 8, Vol.1, pp.82-86 and p.92

Southern Ocean.⁶⁴ Even so, it is clear that CCAMLR meets the criteria in Article 8(3) of the Straddling Fish Stocks and Highly Migratory Fish Stocks Agreement⁶⁵, in that any State which engaged in exploitation or research, hence having what could be regarded as a real interest, can become a full participant in all aspects of the Convention.⁶⁶

There is no requirement that parties to CCAMLR be parties to the Antarctic Treaty or any of the other ATS constituent instruments. One rationale of CCAMLR being in a separate convention was to permit States wishing to fish in the Southern Ocean

⁶⁴ Article XXIX, CCAMLR. A similar situation has evolved in the membership in the International Convention for the Regulation of Whaling, where a number of conservation-minded developing States joined the IWC in order to influence its voting behaviour: see M.J. Peterson, "Whalers, Cetologists, Environmentalists, and the International Management of Whaling" (1992) 46 *International Organization* p.147 at pp.176-179

⁶⁵ *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, done at New York on 4 August 1995, not yet in force: reprinted 34 ILM 1542 (1995) [hereafter referred to as SS/HMS Agreement]

⁶⁶ In fact, by permitting States with a research interest full rights to participate within CCAMLR, it may be easier for States with no previous interest in a fishery to obtain membership than other fisheries conventions. cf. Article XIV, *Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, done at Washington DC, 16 June 1994, entered into force 8 December 1995: reprinted in 34 ILM 67 (1995) [hereafter cited as the Doughnut Hole Agreement]: see Chapter 4 at p.353

that were not interested in adopting the Antarctic Treaty to be included.⁶⁷ In practice, this has not occurred, as only one State was ever a party to CCAMLR without being a party to the Antarctic Treaty⁶⁸, and all the present CCAMLR Commission members, with the exception of the Ukraine and the European Union, are also ATCPs, and all State parties of CCAMLR are parties to the Antarctic Treaty.⁶⁹

Structures

CCAMLR sets up a number of structures to facilitate its task of conserving marine living resources in the Southern Ocean. Firstly, it sets up a Commission, which is the body charged with the fulfilment of the objectives set out in Article II. As noted above, its membership consists of each original contracting party, or acceding

⁶⁷ This is not to say that the Antarctic Treaty does not have an impact on the State parties to CCAMLR. Article III CCAMLR provides that all State parties of CCAMLR agree not to act in a manner contrary to the principles and purposes of the Antarctic Treaty, regardless of whether they are parties to that Treaty or otherwise. Similarly Article IV CCAMLR requires States to accept the same compromise with respect to territorial claims in the Antarctic as embodied by Article IV of the Antarctic Treaty.

⁶⁸ South Korea was a party to CCAMLR shortly before acceding to the Antarctic Treaty, and ultimately attaining Consultative party status.

⁶⁹ Argentina, Australia, Belgium, Brazil, Bulgaria, Canada, Chile, the European Union, Finland, France, Germany, Great Britain, Greece, Italy, Japan, Korea, the Netherlands, New Zealand, Norway, Peru, Poland, Russia, South Africa, Spain, Sweden, the Ukraine, the United States, and Uruguay.

parties who have research or fishing interests in the Southern Ocean.⁷⁰ To assist the Commission in its work, the Convention also establishes a Scientific Committee. The roles of each of these bodies are considered below.

To meet the objectives in Article II, the Commission has a range of powers. These include the facilitation of research into the Antarctic marine ecosystem and Antarctic marine living resources⁷¹, the collection and compilation of ecosystem data⁷², including the acquisition of catch and effort data⁷³, and the dissemination and publication of the information collected.⁷⁴ More significantly, it can formulate

⁷⁰ Article VII, CCAMLR. Article VII(2)(c) CCAMLR also permits membership of regional economic integration organizations, with the European Union (or European Economic Community as it then was) firmly in mind. To date the EU is the only member of this type.

⁷¹ Article IX(1)(a), CCAMLR provides the Commission shall:
facilitate research into and comprehensive studies of Antarctic marine living resources and of the Antarctic marine ecosystem;

⁷² Article IX(1)(b), CCAMLR provides the Commission shall:
compile data on the status of and changes in population of Antarctic marine living resources and on factors affecting the distribution, abundance and productivity of harvested species and dependent or related species or populations;

⁷³ Article IX(1)(c), CCAMLR provides the Commission shall:
ensure the acquisition of catch and effort statistics on harvested populations;

⁷⁴ Article IX(1)(d), CCAMLR. In part, this meets the criticism of States hostile to the ATS that information about Antarctica is solely for the benefit of those States in the "Antarctic Club": Howard, *supra* note 34, p.121

and revise conservation measures⁷⁵, which are to be the principal means available to the Commission to manage the Southern Ocean ecosystem. To ensure these measures are effective, the Commission also may act to identify conservation needs, analyse the effectiveness of existing measures⁷⁶, and institute an observation and inspection scheme.⁷⁷

As with other marine living resource agreements, the subject matter of conservation measures that can be implemented is quite wide ranging, and is explicitly spelled out in Article IX(2). Conservation measures may concern such matters as the quantity of a species that may be harvested⁷⁸, the designation of harvest areas⁷⁹,

⁷⁵ Articles IX(1)(e) and (f) CCAMLR provide the Commission shall:

- (e) identify conservation needs and analyse the effectiveness of conservation measures;
- (f) formulate, adopt and revise conservation measures on the basis of the best scientific evidence available, subject to the provisions of paragraph 5 of this Article;

The conservation measures made to date are discussed below at p.426.

⁷⁶ Article IX(1)(e), CCAMLR provides the Commission shall:
identify conservation needs and analyse the effectiveness of conservation measures;

⁷⁷ Article IX(1)(g) CCAMLR provides the Commission shall:
implement the system of observation and inspection established under Article XXIV of this Convention;
The inspection system is discussed below at p.415

⁷⁸ Article IX(2)(a), CCAMLR provides that conservation measures may include:
the designation of the quantity of any species which may be harvested in the area to which this Convention applies;

opening and closing of harvest seasons or areas⁸⁰, regulations as to the size and age of the catch⁸¹, or the gear and methods used to bring the catch in.⁸² The range of possible measures is substantially consistent with the scope of conservation measures available to a coastal State within its EEZ pursuant to Article 62(4) of the Law of the Sea Convention.⁸³ An exception to this broad contiguity is Article IX(2)(i) of CCAMLR, which provides for measures necessary to meet CCAMLR's

⁷⁹ Articles IX(2)(b) and (c) CCAMLR provide that conservation measures may include:

- (b) the designation of regions and sub-regions based on the distribution of populations of Antarctic marine living resources;
- (c) the designation of the quantity which may be harvested from the populations of regions and sub-regions;

The designation of regions and sub-regions has occurred. These areas have been assigned identification numbers as part of the FAO's statistical division of ocean areas. The regions and sub-regions are indicated on the map at p.47

⁸⁰ Article IX(2)(f) and (g), CCAMLR provide that conservation measures may include:

- (f) the designation of open and closed seasons for harvesting;
- (g) the designation of the opening and closing of areas, regions or sub-regions for the purposes of scientific study or conservation, including special areas for protection or scientific study;

⁸¹ Article IX(2)(e), CCAMLR provides that conservation measures may include:

the designation of the size, age and, as appropriate, sex of species which may be harvested;

Article IX(2)(d), CCAMLR permits the designation of protected species.

⁸² Article IX(2)(h), CCAMLR provides conservation measures may include: regulation of the effort employed and the methods of harvesting, including fishing gear, with a view, inter alia, to avoiding undue concentration of harvesting in any region or sub-region;

⁸³ See discussion in Chapter 2 at p.121

objectives, including those relating to the impact upon the ecosystem as a whole.⁸⁴ Since ecosystem management does not feature within the Law of the Sea Convention⁸⁵, and is a centrepiece of CCAMLR, the fact this provision has no analogue is not surprising.

Decisions are made as to conservation measures⁸⁶, or any other matter of substance before the Commission, by consensus.⁸⁷ This is consistent with other Antarctic Treaty System measures, and effectively gives any participating State a right of veto to any proposed measure.⁸⁸ Further, in respect of conservation measures, all States are bound to implement such measures, unless they make use of the objection

⁸⁴ Article IX(2)(i), CCAMLR provides conservation measures may include: the taking of such other conservation measures as the Commission considers necessary for the fulfilment of the objective of this Convention, including measures concerning the effects of harvesting and associated activities on components of the marine ecosystem other than the harvested populations.

⁸⁵ See discussion in Chapter 3 at p.303

⁸⁶ The manner of adoption of conservation measures is discussed by Joyner: C.C. Joyner, *Governing the Frozen Commons: The Antarctic Regime and Environmental Protection*, (Columbia: University of South Carolina Press, 1998) pp.125-126

⁸⁷ An American proposal during the negotiations for a 2/3 majority vote was rejected: Bush, *supra* note 8, Vol.1, p.413; Frank, *supra* note 45, pp.309-310

⁸⁸ See C.C. Joyner, "The Southern Ocean and Marine Pollution: Problems and Prospects" (1985) 17 *Case Western Reserve Journal of International Law* p.165 at p.184. As determining what is a matter of substance is also deemed a matter of substance, it has been expressed that States may have what amounts to a double veto, although from a practical standpoint, one veto should prove sufficient: Boczek, *supra* note 31, pp.377-378

procedure set down in Article IX(6). This permits an objection to a measure within 90 days of its promulgation, that will make the measure non-binding on the objecting State. Other members can use such an objection to call a meeting of the Commission to review the offending conservation measure, and further objections to the measure can be lodged at this meeting or within 30 days after it.⁸⁹

The second body set up by CCAMLR is the Scientific Committee. The Scientific Committee was intended to provide "a forum for consultation and cooperation concerning the collection, study and exchange of information with respect to the marine living resources to which this Convention applies".⁹⁰ The Committee was to provide the technical expertise and data to permit the Commission to make determinations on conservation measures, as well as to analyse and monitor the state of the ecosystem CCAMLR is obliged to protect from harm.⁹¹ Each party to

⁸⁹ Article IX(6)(b), (c) and (d), CCAMLR

⁹⁰ Article XV(1), CCAMLR

⁹¹ Article XV(2), CCAMLR provides:

The Scientific Committee shall conduct such activities as the Commission may direct in pursuance of the objective of this Convention and shall:

- (a) establish criteria and methods to be used for determinations concerning the conservation measures referred to in Article IX of this Convention;
- (b) regularly assess the status and trends of the populations of Antarctic marine living resources;
- (c) analyse data concerning the direct and indirect effects of harvesting on the populations of Antarctic marine living resources;
- (d) assess the effects of proposed changes in the methods or levels of harvesting and proposed conservation measures;

CCAMLR was entitled to a representative on the Committee⁹², and as a whole the Committee can seek the advice of other experts on an *ad hoc* basis.⁹³ Other international scientific bodies, and other Antarctic research programmes may also be consulted or taken account of by the Committee in the course of its work.⁹⁴

The relationship of the Commission and the Scientific Committee is not spelled out in great detail within CCAMLR.⁹⁵ The Commission is clearly the superior body, and can direct the Scientific Committee to undertake any activities in pursuance of the objectives set down in Article II, although the Committee may make assessments and report to the Commission on its own initiative, suggesting it has at

-
- (e) transmit assessments, analyses, reports and recommendations to the Commission as requested or on its own initiative regarding measures and research to implement the objective of this Convention;
 - (f) formulate proposals for the conduct of international and national programs of research into Antarctic marine living resources.

⁹² Article XIV(2), CCAMLR; this provision ultimately was responsible for a difference of opinion between some of the parties as to the nature of the Scientific Council: see below at p.423.

⁹³ Article XIV(3), CCAMLR

⁹⁴ Article XIV(3), CCAMLR. Article XV(3) CCAMLR also provides that the Scientific Committee shall have regard to the work of other scientific and technical organizations, and scientific activities conducted under the auspices of the Antarctic Treaty.

⁹⁵ Ironically, the delegates at the CCAMLR negotiations spent a great deal of time debating the relationship: Edwards & Heap, *supra* note 28, p.357

least some degree of independence.⁹⁶ The intention of the parties was to create a permanent scientific consultancy for the Commission, to assist it in the complex task of implementing an ecosystem management approach.⁹⁷ Since funds provided to CCAMLR were likely to be limited⁹⁸, no mechanisms were set up to provide for an independent research capability for the Commission, so the Scientific Committee was the next best alternative.⁹⁹ It could provide a focal point for discussion among leading scientists in the field, as well as a conduit for the provision of high quality international advice. The link between the two bodies is reinforced by the fact the Commission must publish the advice of the Scientific Committee¹⁰⁰, and is expressly obliged to "take full account" of the advice and recommendations coming from it.¹⁰¹

An unusual feature of CCAMLR is the level to which it encourages non-

⁹⁶ Article XV(2)(e), CCAMLR

⁹⁷ As much is stated in Article XIV(1), CCAMLR; see C.C. Joyner, *Antarctica and the Law of the Sea*, (Dordrecht: Martinus Nijhoff, 1992) p.233

⁹⁸ CCAMLR's forecast budget for 1998 was an income of A\$1,968,600, of which A\$198,200 was allocated for data management, and A\$147,500 was allocated for the Scientific Committee: CCAMLR, *Report of the Fifteenth Meeting of the Commission*, 21 October - 1 November 1996, p.127

⁹⁹ cf. with the Antarctic Seals Convention which makes use of SCAR rather than setting up its own body: Article 5 Antarctic Seal Convention

¹⁰⁰ Article IX(1)(d), CCAMLR

¹⁰¹ Article IX(4), CCAMLR; see discussion by Edwards & Heap: Edwards & Heap, *supra* note 28, p.357

governmental organisations (NGOs) and intergovernmental organisations (IGOs). Article XXIII provides the organs of CCAMLR will cooperate with the ATCPs and the FAO and "other Specialised Agencies".¹⁰² It also extols the Commission and the Scientific Committee to develop relationships with the Scientific Committee on Antarctic Research (SCAR), the IWC, the Scientific Committee on Oceanic Research (SCOR) and any other organisation that is considered appropriate.¹⁰³ Formal agreements can be entered into, and there is provision for the admission of observers from the organisations to be present at CCAMLR meetings.¹⁰⁴

Unlike the arrangements in the Bering Sea, CCAMLR has a headquarters, with a secretariat.¹⁰⁵ Article XIII provides that the headquarters of the Commission be established in Hobart, Tasmania, Australia, and that, unless the Commission members decide otherwise, the meetings of the Commission be held at that location. This has occurred, with meetings typically scheduled in October/November at the start of the austral summer season. Although not spelled out, the secretariat has three principal functions. The first is to provide logistic and translation support for

¹⁰² Article XXIII(2), CCAMLR

¹⁰³ Article XXIII(3), CCAMLR; see D. Vignes, "La Convention sur la Conservation de la Faune et de la Flore Marines de l'Antarctique" (1980) 26 *Annuaire Français de Droit International* p.741 at p.756.

¹⁰⁴ Article XXIII(4), CCAMLR. The provision has been utilised when ASOC, an umbrella environmental NGO, was granted observer status in 1988; see below at p.425.

¹⁰⁵ Article XVII, CCAMLR

the annual Commission meetings. As CCAMLR operates with four official languages¹⁰⁶, it is necessary to ensure that all official documentation is available in each of these languages. The second function is to act as a conduit for data exchange and management, and to assist in the coordination of research programmes, to ensure that the Scientific Committee has the data it requires available. Finally, the secretariat represents CCAMLR in its interactions with other international organizations. CCAMLR interests overlap to varying extents with a number of other international bodies, including FAO, the Commission for the Conservation of Southern Bluefin Tuna¹⁰⁷, the Indian Ocean Tuna Commission¹⁰⁸, SCAR, SCOR, and the IWC. CCAMLR's Executive Secretary regularly represents the Commission in meetings of these bodies.¹⁰⁹

Enforcement and Jurisdiction

The CCAMLR area includes areas subject to national jurisdiction, both in dispute and generally recognised, and high seas areas. To preserve the political

¹⁰⁶ Article XXXIII, CCAMLR provides that the English, French, Russian and Spanish texts of the Convention are equally authentic. In practice, the Commission operates in each of these languages.

¹⁰⁷ *Convention for the Conservation of Southern Bluefin Tuna*, done at Canberra on 10 May 1993, in force 20 May 1994: AustTS 1994 No.16

¹⁰⁸ *Agreement for the Establishment of the Indian Ocean Tuna Commission*, done at Rome on 25 November 1993, entered in force 27 March 1996: AustTS 1996 No.20

¹⁰⁹ For example see the lists of meetings attended in 1996 and 1997: CCAMLR, *Report of the Fifteenth Meeting of the Commission*, 21 October - 1 November 1996, pp.76-77

compromise that underlies the Antarctic Treaty, all parties to CCAMLR agree to the same bifocal approach to Antarctic sovereignty set down in Article IV of the Antarctic Treaty.¹¹⁰ However, the CCAMLR area extends north of 60° South, and encompasses waters in the vicinity of islands which are generally recognised as being subject to valid national claim. Those States who claim territory in the CCAMLR area, particularly the sub-Antarctic islands north of 60°South, have proclaimed exclusive economic zones around their possessions, and have reserved the right to assert their own jurisdiction over vessels fishing in their EEZs.¹¹¹

Such action by claimant States was envisaged, as is evidenced by Article XI of CCAMLR which urges the Commission to seek cooperation in harmonizing conservation measures with those States which exercise jurisdiction in the CCAMLR Area.¹¹² The implementation of such domestic measures was foreseen

¹¹⁰ Triggs, *supra* note 63, pp.202-203; Auburn, *supra* note 15, p.221; B. Conforti, "Territorial Claims in Antarctica: A Modern Way to Deal with an Old Problem" (1986) 19 *Cornell International Law Journal* p.249 at pp.250-251; Gardam, *supra* note 15, p.285 and p.299; C.C. Joyner, "The Exclusive Economic Zone and Antarctica: The Dilemmas of Non-Sovereign Jurisdiction" (1988) 19 *Ocean Development and International Law* p.469 at p.483

¹¹¹ Australia, Norway, France and South Africa all have undisputed EEZs surrounding their sub-Antarctic islands north of 60°South, although only Australia asserts such a zone south of the parallel. Britain and Argentina dispute sovereignty over South Georgia and the South Sandwich Islands, but both claim extended fisheries jurisdiction around these islands.

¹¹² Article XI, CCAMLR provides:
The Commission shall seek to cooperate with Contracting Parties which may exercise jurisdiction in marine areas adjacent to the area to which this Convention applies in respect of the conservation of

during the CCAMLR negotiations, and, in the case of France, expressly referred to in the Final Act of the conference that adopted CCAMLR itself.¹¹³ Immediately before the adoption of CCAMLR, the Chairman of the conference made a statement noting that while France was bound to implement CCAMLR conservation measures around its possessions, it was entitled to promulgate national measures for the areas around Kerguelen and the Crozet Islands that were stricter than CCAMLR measures, and in the absence of consensus to promulgate any measures it might deem appropriate.¹¹⁴ The Chairman noted that similar understandings would apply to the waters surrounding other islands the sovereignty of which was not in dispute.¹¹⁵ Such an option of stricter national legislation would be open to Australia, Norway and South Africa by virtue of their uncontested sovereignty over Heard and McDonald Islands, Bouvet Island and Prince Edward and Marion Islands

any stock or stocks of associated species which occur both within those areas and the area to which this Convention applies, with a view to harmonizing the conservation measures adopted in respect of such stocks.

See also F. Orrego Vicuña, "The Regime of Antarctic Marine Living Resources" in F. Francioni and T. Scovazzi (eds), *International Law for Antarctica*, (The Hague: Kluwer Law, 1996) p.127 at pp.136-138

¹¹³ See Bush, *supra* note 8, Vol.1, p.394

¹¹⁴ The Chairman's Statement is reproduced in Bush, *supra* note 8, Vol.1, p.391

¹¹⁵ Only islands north of 60°South would fit into this category, and would not include South Georgia or the South Sandwich Islands which are disputed between Argentina and Britain. Consequently, it would also refer to Prince Edward and Marion Islands belonging to South Africa, and Heard and McDonald Islands belonging to Australia.

respectively.¹¹⁶ While the status of the Chairman's Statement in international law has been questioned¹¹⁷, practice by the state parties suggests acceptance of the right of States claiming uncontested territory to assert and implement their own fisheries legislation.¹¹⁸

Aside from enforcement based on the assertion of sovereign rights under Part V of the Law of the Sea Convention, CCAMLR only seeks to enforce conservation measures on the basis of flag State jurisdiction. Each State is to have responsibility for ensuring that vessels flying its flag comply, through action under its domestic law:

Each Contracting Party shall take appropriate measures within its competence to ensure compliance with the provisions of this Convention and with conservation measures adopted by the Commission to which the Party is bound in accordance with Article IX of this Convention.¹¹⁹

¹¹⁶ For a discussion of the application of the Chairman's Statement to the waters adjacent to these islands see D. Vignes, "Protection of the Antarctic Marine Fauna and Flora: The Canberra Convention of 20 May 1980 and the Commission set up by it" in F. Francioni & T. Scovazzi (eds), *International Law for Antarctica*, (The Hague: Kluwer Law, 1996) p.159 at pp.162-164

¹¹⁷ Rothwell, *supra* note 16, p.18

¹¹⁸ Certainly no State party nor the Commission has ever objected to the assertion by France, or any other undisputed claimant, that it has unfettered jurisdiction over marine living resource exploitation within its EEZ: see CCAMLR, *Report of the Tenth Meeting of the Commission*, 21 October - 1 November 1991, pp.14-15; see also Conservation Measures 64/XII, 65/XII and 29/XIII which expressly exempt the waters adjacent to Kerguelen and the Crozets.

¹¹⁹ Article XXI(1), CCAMLR. See also N.D. Bankes, "Environmental Protection in Antarctica: A Comment on the Convention on the Conservation of Antarctic Marine Living Resources" (1981) 19 *Canadian Yearbook of*

There is no independent capacity for the Commission or other State parties to take any enforcement action against a vessel in breach of the Convention. However, there is an obligation on States to exert appropriate efforts, consistent with the UN Charter, to ensure that no one acts contrary to the objective of CCAMLR.¹²⁰ It is unlikely that this could be used as a ground for intervention against a vessel from another contracting party, as the exercise of enforcement jurisdiction against a vessel on the high seas by a State other than the flag State is contrary to long established principles of international law¹²¹, which is not consistent with the Charter.¹²² The provision is substantially the same as Article X of the Antarctic Treaty, which has certainly never been used as a tool to found an exercise of extraterritorial enforcement jurisdiction over the nationals of other States.¹²³ A

International Law p.303 at p.315

¹²⁰ Article XXII(1), CCAMLR

¹²¹ See *Case of the S.S. "Lotus"* PCIJ Reports Series A No.10, Judgment No.9 at pp.25-27; see Article 110, Law of the Sea Convention and discussion in Chapter 2 at p.163

¹²² Article I(1) of the UN Charter indicates one purpose of the UN is to bring about the peaceful resolution of disputes "in conformity with the principles of justice and international law". Consequently if international law is breached by physical intervention on a ship flying another State's flag, except in very limited circumstances, the Charter would not seem to permit States to board a vessel on the high seas as a means of resolving an international dispute. cf. argument made by Canada before the International Court of Justice in *Fisheries Jurisdiction (Spain v Canada)*, unreported 4 December 1998: reprinted at <<http://www.icj-cij.org/icjwww/idocket/iec/ieframe.htm>>

¹²³ For a discussion of the operation of Article X of the Antarctic Treaty see S. Brunner, "Article 10 of the Antarctic Treaty Revisited" in F. Francioni & T. Scovazzi (eds), *International Law for Antarctica*, (The Hague: Kluwer Law,

contracting party can alert the Commission to the activity in question, where presumably it can be raised in the annual meeting.¹²⁴

The closest CCAMLR comes to an enforcement provision for the Commission is Article X, which provides the Commission can "draw to the attention" of contracting parties, or third States of matters which are inimical to the principles of the Convention, or which adversely affect the implementation of it.¹²⁵ Accordingly, the only weapon at the Commission's disposal is the embarrassment of being publicly seen as a State lacking an environmental conscience.¹²⁶

During the negotiation of CCAMLR, the parties clearly anticipated the negotiation of an observation and inspection scheme, but chose to leave the mechanics of such

1996) at p.103

¹²⁴ Article XXII(2), CCAMLR provides:

Each Contracting Party shall notify the Commission of any such activity that comes to its attention.

¹²⁵ Article X, CCAMLR provides:

1. The Commission shall draw the attention of any State which is not a Party to this Convention to any activity undertaken by its nationals or its vessels which, in the opinion of the Commission, affects the implementation of the objective of this Convention.

2. The Commission shall draw the attention of all Contracting Parties to any activity which, in the opinion of the Commission, affects the implementation by a Contracting Party of the objective of this Convention or the compliance by that Contracting Party with its obligations under this Convention.

¹²⁶ The use of Article X in the context of third States is considered below at p.462

a scheme to a later date.¹²⁷ They did however prescribe three principles under which the scheme would operate: cooperation between States to establish procedures for boarding and inspection, and for flag State prosecutions, consistent with international practice¹²⁸; observation and inspection of vessels engaged in harvesting or research¹²⁹; inspectors remaining subject to jurisdiction of the member State of which they are nationals, and reports from them being transmitted to the Commission.¹³⁰

¹²⁷ Article XXIV(1), CCAMLR provides:

In order to promote the objective and ensure observance of the provisions of this Convention, the Contracting Parties agree that a system of observation and inspection be established.

¹²⁸ Article XXIV(2)(a), CCAMLR provides:

Contracting Parties shall cooperate with each other to ensure the effective implementation of the system of observation and inspection, taking account of the existing international practice. This system shall include, inter alia, procedures for boarding and inspection by observers and inspectors designated by Members of the Commission and procedures for flag state prosecutions and sanctions on the basis of evidence resulting from such boarding and inspections. A report of such prosecutions and sanctions imposed shall be included in the information referred to in Article XXI of this Convention;

¹²⁹ Article XXIV(2)(b), CCAMLR provides:

in order to verify compliance with measures adopted under this Convention, observation and inspection shall be carried out on board vessels engaged in scientific research or harvesting of marine living resources in the area to which this Convention applies, through observers and inspectors designated by Members of the Commission and operating under terms and conditions to be established by the Commission;

¹³⁰ Article XXIV(2)(c), CCAMLR provides:

designated observers and inspectors shall remain subject to the jurisdiction of the Contracting Party of which they are nationals. They shall report to the Member of the Commission by which they have been designated which in turn shall report to the Commission.

The implementation of Article XXIV was not immediate, and the issue itself was only raised at the third Commission meeting in 1984.¹³¹ Real progress was only made after the creation of a Standing Committee on Observation and Inspection (SCOI) in 1987.¹³² At the 1988 meeting of the Commission, SCOI drafted a system of observation and inspection¹³³, which was approved by the Commission in plenary at the same meeting.¹³⁴

The system adopted by CCAMLR operates around State parties designating qualified individuals as inspectors and observers who can be placed aboard vessels engaged in scientific research or harvesting in the CCAMLR area.¹³⁵ Inspectors

¹³¹ CCAMLR, *Report of the Third Meeting of the Commission*, 3-14 September 1984, p.7. A detailed consideration of CCAMLR's observation and enforcement procedures has been undertaken by Rayfuse: R. Rayfuse, "Enforcement of High Seas Fisheries Agreements: Observation and Inspection under the Convention for the Conservation of Antarctic Marine Living Resources" (1998) 13 *International Journal of Marine and Coastal Law* p.579

¹³² The establishment of SCOI came from recommendations of a Working Group convened by the United States to address the question of observation and inspection: CCAMLR, *Report of the Thirteenth Meeting of the Commission*, 26 October 1987 - 6 November 1987, pp.22-26

¹³³ CCAMLR, *Report of the Seventh Meeting of the Commission*, 24 October - 4 November 1988, pp.111-121

¹³⁴ The SCOI recommendations were adopted by the meeting *in toto*: CCAMLR, *Report of the Seventh Meeting of the Commission*, 24 October - 4 November 1988, pp.29-36

¹³⁵ Items I(a) and III, Observation and Inspection System: reprinted CCAMLR, *Report of the Seventh Meeting of the Commission*, 24 October - 4 November 1988, p.30; Inspectors can be either placed aboard, or inspect from a vessel under their own State's flag: Items I(d), I(e) and III(a), III(b) and III(c),

are to be listed in a register maintained by the Commission¹³⁶, are to be nationals of the State party nominating them¹³⁷, and must speak the language of the flag State of the vessel they are placed on.¹³⁸ When aboard a vessel, an inspector is solely subject to the jurisdiction of their nominating State.¹³⁹ Each party must provide the Commission with details of all vessels intending to enter the CCAMLR area to harvest resources during the year commencing 1 July, by 1 May of the same year.¹⁴⁰ Any such vessels are potentially subject to inspection.

The inspector has wide powers in respect of access, but not in the context of enforcement. Inspectors may observe and inspect catches, gear, data, records and reports on catch and location data.¹⁴¹ They may also photograph alleged

Observation and Inspection System. See also Rayfuse, *supra* note 131, p.589

¹³⁶ Item II, Observation and Inspection System

¹³⁷ Item I(c), Observation and Inspection System. This is consistent with Article XXIV(2)(c), CCAMLR.

¹³⁸ Item I(d), Observation and Inspection System. This provision appears to assume that the captain and crew also speak the language of the flag State.

¹³⁹ Item I(c), Observation and Inspection System. This is consistent with Article XXIV(2)(c), CCAMLR.

¹⁴⁰ Parties must provide information including the name of the vessel, the call sign of the vessel registered with appropriate flag State authorities, the home port and nationality of the vessel, the owner or charterer of the vessel, and notification that the vessel's master is aware of the conservation measures in force for the areas where the vessel will be harvesting: Item IV, Observation and Inspection System.

¹⁴¹ Item VI, Observation and Inspection System

violations of conservation measures and affix identification marks to alleged gear used in contravention of conservation measures.¹⁴² However, in the event a breach is observed, the inspector is only empowered to alert the master of the vessel to the breach, and note it in the official inspection report.¹⁴³ This report is transmitted to the flag State from the inspector's State via the medium of the Commission, although the flag State can comment upon the report prior to its formal consideration at a Commission meeting.¹⁴⁴ It is then the responsibility of the flag State to take up any further action. The operation of the system will be considered below. In addition, in 1992 a Scheme of International Scientific Observation was adopted by the Commission, on recommendation from SCOI, to provide for scientific observers being placed upon vessel through bilateral arrangements.¹⁴⁵

The Commission is also urged to cooperate with States who exercise their jurisdiction adjacent to the Convention Area, to ensure a consistent approach to

¹⁴² Item VI(e), Observation and Inspection System

¹⁴³ Item VIII, Observation and Inspection System

¹⁴⁴ Item IX, Observation and Inspection System. These procedures were amended in 1992, 1996 and 1997 to provide for time limits on the submission of reports, and expedition of consideration of reports by flag States: see CCAMLR, *Report of the Eleventh Meeting of the Commission*, 26 October - 6 November 1992, p.94; see also Rayfuse, *supra* note 131, p.593

¹⁴⁵ See CCAMLR, *Report of the Eleventh Meeting of the Commission*, 26 October - 6 November 1992, pp.95-97; see also F. Orrego Vicuña, *supra* note 112, pp.143-144

management.¹⁴⁶ The State parties reinforced this provision with Resolution 10/XII in 1993, which called on States to ensure that vessels flying their flag should conduct fishing activities in waters adjacent to the Convention area responsibly, and with due respect for CCAMLR conservation measures.¹⁴⁷ In addition, non-Antarctic Treaty States are obliged to comply with the Agreed Measures on the Conservation of Antarctic Flora and Fauna¹⁴⁸, and, as already observed, the rights and obligations of States pursuant to the Convention for the Conservation of Antarctic Seals and the International Convention on the Regulation of Whaling.¹⁴⁹ Cooperative links are also to be made with a variety of other fisheries, scientific and conservation organizations. All of the above reinforce the notion that CCAMLR is directed at ecosystem management, in that where other agencies or States have some control over a portion of Antarctic circumpolar resources,

¹⁴⁶ Article XI, CCAMLR provides:

The Commission shall seek to cooperate with Contracting Parties which may exercise jurisdiction in marine area adjacent to which this Convention applies in respect of the conservation of any stock or stocks of associated species which occur both within those areas and the area to which this Convention applies, with a view to harmonizing the conservation measures adopted in respect of such stocks.

¹⁴⁷ CCAMLR, *Report of the Twelfth Meeting of the Commission*, 25 October - 5 November 1993, p.10. Orrego Vicuña has expressed reservations over the nature of the language used in the Resolution 10/XII, although it is submitted that the problems foreseen have not eventuated: Orrego Vicuña, *supra* note 112, p.156

¹⁴⁸ Done at Brussels, 2-13 June 1965; reprinted in Bush, *supra* note 8, Vol.1, p.146. The Agreed Measures were replaced by Annexes II and V of the Madrid Protocol when that instrument entered into force in January 1998.

¹⁴⁹ Article VI, CCAMLR

CCAMLR should be working with them to ensure consistency and effective management.

With the exception of the references to the ATS and ecosystem management, the system of conservation measures is broadly equivalent to that in most marine living resource management conventions. The enforcement provisions are somewhat conservative in their acceptance without exception of the primacy of flag State jurisdiction, and in this can be contrasted with the more recent agreements for the Bering Sea¹⁵⁰ and the Straddling Fish Stocks and Highly Migratory Fish Stocks Agreement.¹⁵¹ The use of consensus decision-making in other agreements is not universal¹⁵², but neither is CCAMLR unique in its employment.¹⁵³ Similarly, a number of other agreements make use of analogous objection procedures in the adoption of conservation measures.¹⁵⁴ Consequently, aside from the difference in

¹⁵⁰ See discussion in Chapter 4 at p.366

¹⁵¹ See discussions in Chapter 3 at p.272

¹⁵² For example, the Northwest Atlantic Fisheries Organization and the International Whaling Commission operate with voting systems based on majority votes: See Article V(2) *Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries*, done at Ottawa on 24 October 1978, entered into force 1 January 1979: Cmnd. 7569 [hereafter cited as Northwest Atlantic Fisheries Convention]; Article III(2) *International Convention on the Regulation of Whaling*, done at Washington on 2 October 1946, entered into force 10 November 1948: 161 UNTS 72

¹⁵³ The Doughnut Hole Agreement is an example: See discussion in Chapter 4 at p.362

¹⁵⁴ Article XII, Northwest Atlantic Fisheries Convention

its management philosophy, in the procedural aspects of its adoption of measures and their enforcement, CCAMLR is essentially equivalent to other international regimes.¹⁵⁵

CCAMLR in Action

Decision-Making

While few dispute the merits of the principles behind CCAMLR, a number of publicists have questioned whether they can ever be effectively achieved.¹⁵⁶ CCAMLR has been in operation for a period in excess of fifteen years, and this should be a sufficient period of time to make a reasonable assessment of its performance.

The early efforts of CCAMLR would suggest that the fears of those critical of its structure were justified. Until 1991, no conservation measures were adopted in relation to krill, even though it is arguable that the protection of krill was the *raison d'être* of CCAMLR in the first place.¹⁵⁷ The use of consensus in decision-making

¹⁵⁵ A similar observation is made by Gautier: P. Gautier, "The Maritime Area of the Antarctic and the New Law of the Sea" in J. Verhoeven, P. Sands & M. Bruce (eds), *The Antarctic Environment and International Law*, (London: Graham & Trotman, 1992) p.121 at p.131

¹⁵⁶ Boczek, *supra* note 31, pp.380-381; Burke, *supra* note 54, pp.114-115

¹⁵⁷ The first recommendation relating to krill was Conservation Measure 32/X. This applied only to krill in Area 48 (Atlantic sector). Conservation Measures 45/XI and 46/XI extended catch limits for the areas krill are currently being exploited within the CCAMLR area. At present the conservation measures in place for krill are Conservation Measures 32/X,

effectively stymied any attempts at protection, because krill-fishing States, most notably the USSR and Japan, objected to conservation measures being imposed. These States pointed to the lack of scientific data on the Southern Ocean to indicate there was no justification for the imposition of quotas or other restrictions.¹⁵⁸ The failure of consensus was most evident in the meetings of the Scientific Committee. From the first, there was a major difference in opinion between the USSR on the one hand, and Britain, the United States and Australia on the other, as to the role of the Scientific Committee. The Soviet Union saw it as a political forum, where each State nominated a member of its own scientific community to represent its interests. The Western States perceived the Committee as a focal point for an epistemic community of scientists who would provide the Commission with objective advice on the ecosystem within the CCAMLR treaty area. This difference of opinion effectively halted much of the work of the Committee for some time.¹⁵⁹

In time, the State parties' approach within CCAMLR underwent change, and the benefits of consensus decision-making began to be realised.¹⁶⁰ For example, there

45/XIV and 106/XV.

¹⁵⁸ Similar arguments were made by the USSR and Japan in the 1960's when the IWC sought to impose more stringent quotas on whaling: S. Andresen, "Science and Politics in the International Management of Whales" (1989) 13 *Marine Policy* p.99 at p.105

¹⁵⁹ Howard, *supra* note 34, pp.117-120

¹⁶⁰ Orrego Vicuña indicates this change began to occur in 1987: Orrego Vicuña, *supra* note 112, p.139. A similar identification of 1987 is made by Scully: Scully, *supra* note 40, p.138

is far less use of the objection procedure within the CCAMLR Commission to its conservation measures than in other equivalent fisheries bodies with similar objection procedures. By reaching a consensus, the decision has already achieved a level of acceptability with all parties concerned. The decisions made may be weaker, but they are generally accepted by all, rather than strong decisions, which may be ignored by those most affected by them.¹⁶¹

Also pleasing has been the evolution of the Scientific Committee. In contrast to the earlier years where the Committee was racked with internal dissension, it has melded into a useful and forceful body. Political negotiations have largely been removed to the Commission, which would appear to have increased cooperation within the Committee¹⁶², allowing it to become a forum for interaction by Antarctic marine scientists and a focus for coordination of research.¹⁶³ The Scientific Committee has ultimately grown into something more like what was originally envisaged for it, and at times has prodded the Commission into directing

¹⁶¹ An excellent example is the resolutions made by the Northwest Atlantic Fisheries Organization, which have been the subject of protest by States, most notably the European Union in the lead up to the "turbot war" between Canada and Spain in 1995: see D. Day, "Tending the Achilles' Heel of NAFO: Canada Acts to Protect the Nose and Tail of the Grand Banks" (1995) 19 *Marine Policy* p.257; P.G.G. Davies and C. Redgwell, "The International Legal Regulation of Straddling Fish Stocks" (1996) 67 *British Yearbook of International Law* p.199 at pp.207-208

¹⁶² Tsamenyi and Woodhill, *supra* note 58, pp.181-182. This would appear to support the notion of the existence of an epistemic community in Antarctic science: see Chapter 6 at p.476

¹⁶³ Stokke, *supra* note 36, pp.140-141

its energies towards particular research tasks.¹⁶⁴ A system of working groups have been set up within the Committee, tendering advice on specific supplied terms of reference. These meet between full Committee annual events and in the opinion of Howard have proved most effective.¹⁶⁵

Useful links have been established with a variety of international organisations. At Committee and Commission level, connections have been made to SCAR, SCOR, FAO, IWC, the International Oceanographic Commission (IOC) and the International Union for the Conservation of Natural Resources (IUCN).¹⁶⁶ Further, in 1988 the Commission approved observer status to an environmental NGO, the Antarctic and Southern Ocean Coalition (ASOC).¹⁶⁷ By 1998,

¹⁶⁴ Orrego Vicuña, *supra* note 175, pp.32-33

¹⁶⁵ Howard, *supra* note 34, p.120

¹⁶⁶ Powell suggests a degree of self interest may have helped to forge these links, to allow the Commission access to their fisheries data: D.L. Powell, "Scientific and Economic Considerations relating to the Conservation of Marine Living Resources in Antarctica" in F. Orrego Vicuña, *Antarctic Resources Policy* (Cambridge: Cambridge University Press, 1983) p.111 at p.112; Howard, *supra* note 34, p.122; see also Orrego Vicuña, *supra* note 112, pp.152-153

¹⁶⁷ This occurred at the seventh CCAMLR meeting in 1988: see Orrego Vicuña, *supra* note 175, p.35. It was not without some difficulty the invitation to join was finally made. A neat summary of the trials and tribulations of ASOC's efforts to participate can be found in Howard, *supra* note 34, pp.146-148; on the relationship between CCAMLR and NGOs see R.A. Herr, "The Changing Roles of Non-Governmental Organisations in the Antarctic Treaty System" in O.S. Stokke and D. Vidas (eds), *Governing the Antarctic: The Effectiveness and Legitimacy of the Antarctic Treaty System*, (Cambridge: Cambridge University Press, 1996) p.91 at pp.100-103

invitations were also being extended to the South Pacific Commission, the Forum Fisheries Agency, the Inter-American Tropical Tuna Commission, and the Indian Ocean Fisheries Commission.¹⁶⁸ Aside from increasing the range of inputs the Commission can receive in making its decisions, this gives CCAMLR at the very least the appearance of a wider degree of accountability and greater legitimacy than other equivalent bodies.¹⁶⁹ Significantly, invitations to attend the 1998 meeting as observers were extended to Mauritius and Namibia, whose ports had been used by unauthorised vessels fishing for patagonian toothfish. Such a measure was presumably designed to impress these States into denying such access.¹⁷⁰

There has also been a marked shift in the role of the Commission. Out of its first seven meetings, CCAMLR succeeded in producing only 12 Conservation Measures.

¹⁶⁸ CCAMLR, *Report of the Sixteenth Meeting of the Commission*, 27 October - 7 November 1997, p.1 and p.106

¹⁶⁹ Tsamenyi and Woodhill note that NGO participation is further enhanced by the inclusion of NGO representatives in some national delegations: Tsamenyi and Woodhill, *supra* note 58, p.180. The 1996 meeting included 3 representatives of conservation NGOs within the national delegations of Australia, Britain and the United States.

¹⁷⁰ In the case of Mauritius, the invitation failed to produce the desired effect. In March 1999, the Greenpeace vessel *Arctic Sunrise* tailed the trawler *Salvora* across the Southern Ocean until it docked at Port Louis. Officials inspecting the vessel on its arrival found patagonian toothfish aboard: <<http://www.abc.net.au/news/state/tas/archive/mettas-18mar1999-3.htm>> *Salvora* had been arrested in the Australian EEZ around Heard Island in October 1997. The vessel had been released after payment of a bond: S. Bateman & D.R. Rothwell, "Challenges and Prospects for Fishing in the Southern Ocean" in S. Bateman and D.R. Rothwell (eds), *Southern Ocean Fishing: Policy Challenges for Australia*, (Wollongong: Centre for Maritime Policy, 1998) p.133 at p.139

Further, these all related to finfish stocks in the vicinity of South Georgia that were by and large no longer commercially viable and thus the Conservation Measures pertaining to them were uncontentious. Between 1989 and 1994, there were 77 Conservation Measures created or amended - over a 600 percent increase for the same period prior to 1989.¹⁷¹ Further, rather than just dealing with finfish in one specific area, the Conservation Measures cover a range of matters, including krill throughout the Convention Area, catch data reporting systems, finfish catch limits and restricted fisheries, sea bird protection, net mesh sizes, and permissible by-catch levels. This trend has continued, to the extent that in 1998 the Commission approved more conservation measures than in each of its first 7 years combined. At the end of 1998, there were some 54 conservation measures in force, which can be divided into the following categories: 15 general measures; 15 concerning trawl fisheries; 3 concerning longline fisheries; 2 concerning crab fisheries; 11 concerning exploratory fisheries; 5 concerning reporting systems; and 2 pertaining to CCAMLR Ecosystem Monitoring Programme (CEMP) sites.¹⁷² While, as Stokke notes, the volume of measures should not be regarded as an indicator of effectiveness in itself, clearly the present situation is preferable to the years of deadlock the Commission

¹⁷¹ See CCAMLR Conservation Measures graph. Joyner has the change of attitude occurring since 1987, although simply looking at the graph, the change appears to take place 2-3 years later. The time of the change is not so important as the fact that it took place: see Joyner, *supra* note 97, p.238

¹⁷² These categorizations were made by the CCAMLR Commission, and the conservation measures themselves are reproduced in CCAMLR, *Schedule of Conservation Measures in Force for 1998/99 Season*: <http://www.ccamlr.org/english/fishery-monitoring/Conservation_Measures98-99.pdf>

originally endured.¹⁷³

The larger number of conservation measures have not silenced all criticism of CCAMLR's decision-making structures.¹⁷⁴ There has also been a great reluctance of the Commission to make hard decisions. The use of a consensus decision-making system has a tendency to produce weaker measures, to ensure that they are acceptable to all parties. An example of this is the installation of an overall management system. It took more than 4 years to reach agreement that efforts should be made to put together a complete management system, and the final proposal was a far less substantial document than the original draft submitted to the Commission.¹⁷⁵ Similarly, attempts by Australia to have the Commission approve a real time vessel monitoring system were frustrated by the intransigence of several

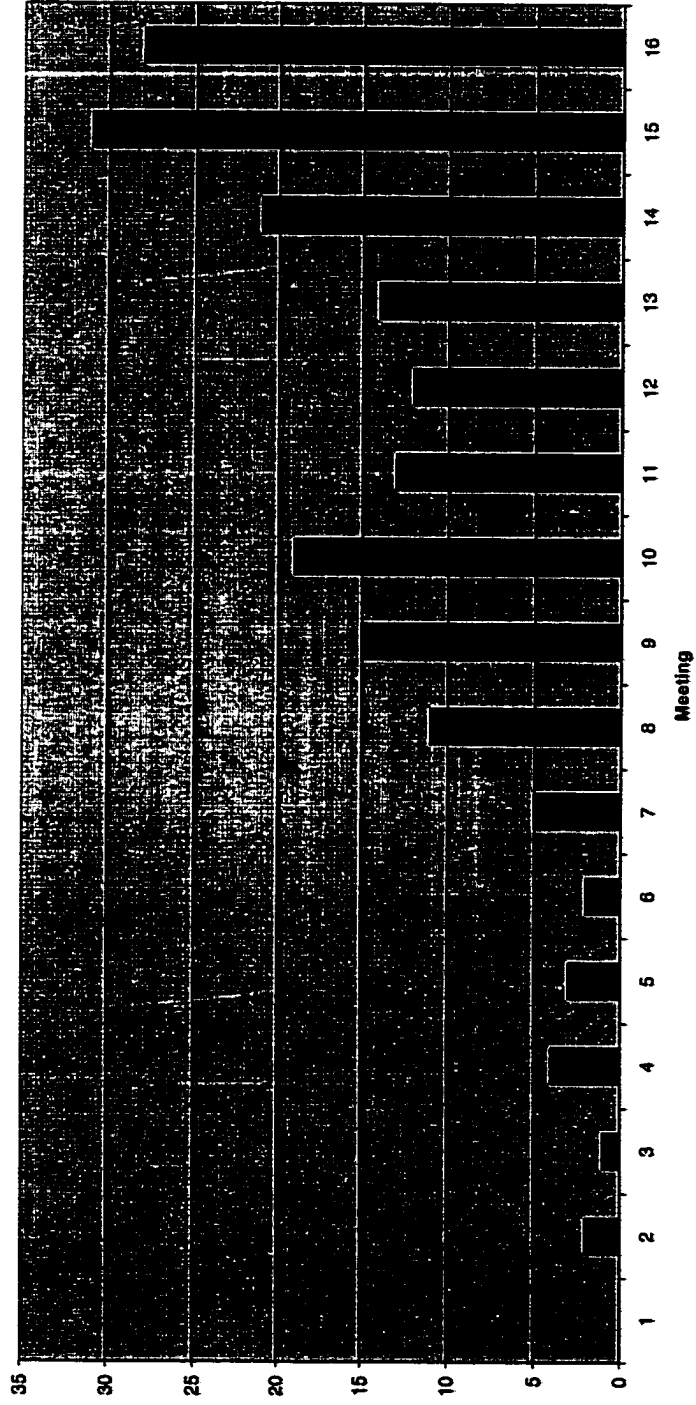
¹⁷³ Stokke, *supra* note 36, p.142. Stokke suggests that cooperation may have been aided by the fact the States with the largest fishing interests were also States that were not claimants to territory in the CCAMLR area, and therefore none sought a privileged position based upon any claim: O.S. Stokke, "The Effectiveness of the Convention for the Conservation of Antarctic Marine Living Resources" (1993) *International Antarctic Regime Project No.4*, p.16

¹⁷⁴ Chopra and Hansen take the view the impact of consensus voting and the objection procedure make CCAMLR "little more than a voluntary code of conduct for member [s]tates": Chopra & Hansen, *supra* note 13, p.140. Given the objection procedure has never been used, and levels of cooperation within the Commission have certainly increased, such an analysis would seem unduly harsh.

¹⁷⁵ F. Orrego Vicuña, "The Effectiveness of the Decision-Making Machinery of CCAMLR: An Assessment" in A. Jørgensen and W. Østreng, *The Antarctic Treaty System in World Politics*, (New York: St Martin's Press, 1991) p.25 at pp.32-34

CCAMLR Conservation Measures

CCAMLR Conservation Measures



States until the November 1998 meeting.¹⁷⁶

Consensus decision-making, when coupled with annual meetings; also has a tendency to reduce CCAMLR's speed in responding to challenges.¹⁷⁷ When faced with the threat of overfishing of patagonian toothfish around various sub-Antarctic islands, it took several meetings, and therefore several years before a coherent response to the threat was developed by the Commission. Given the scale of the unauthorised fishing, where volumes of catch are so spectacular that the fisheries' commercial life can be measured in months¹⁷⁸, the adequacy of the structures can be questioned. Even so, given the Convention was negotiated on the basis that consensus decision-making would be included, and there has been little justification for more frequent meetings, it is difficult to see how a slow response to the problem could have been avoided.¹⁷⁹ The patagonian toothfish crisis will be

¹⁷⁶ T. Stone, "Fishing in the Freezer: Challenges for Fisheries Managers in Australia's sub-Antarctic Fisheries" in S. Bateman and D.R. Rothwell (eds), *Southern Ocean Fishing: Policy Challenges for Australia*, (Wollongong: Centre for Maritime Policy) p.89 at p.100; see discussion below at p.460

¹⁷⁷ There is scope for meetings in addition to the annual meeting under CCAMLR, at the request of at least one third of the Commission members: Article XIII CCAMLR.

¹⁷⁸ At the 1997 CCAMLR Commission meeting, New Zealand indicated that existing patagonian toothfish stocks would be fished out in 12 to 18 months: CCAMLR, *Report of the Sixteenth Meeting of the Commission, 27 October - 7 November 1997*, p.11

¹⁷⁹ Tsamenyi and Woodhill take the view that CCAMLR's structures are sufficient to make timely consideration of conservation issues possible: Tsamenyi and Woodhill, *supra* note 58, p.178

explored in more detail below.

Ecosystem Management

Although the initial difficulties surrounding CCAMLR have diminished over time, significant questions remain over the operation of CCAMLR, mostly in relation to its ecosystem-based approach. The Commission has no independent data-gathering capability, and has been compelled to rely upon the parties, particularly those involved in fishing, for information about the ecosystem it has to manage.¹⁸⁰ The lack of long term data on the various fisheries, and the recurrent difficulties in the creation of an effective data bank on marine life in the Southern Ocean are a matter of grave concern, as a detailed data store is essential to an ecosystem-based approach.¹⁸¹ Without being aware of the nature of all the interactions within the system, the CCAMLR Commission is in no position to determine what measures might be effective to fulfil its objectives. Some have argued that by its very nature an ecosystem-based approach is impossibly complex and impractical to achieve, and that if it cannot be successfully used in the Antarctic where the fisheries are of a

¹⁸⁰ The reliability of some of the data collected has been questioned: Stone, *supra* note 176, 180, p.99. Verification is noted by Stokke as a weak point in international environmental regimes generally, and notes that while CCAMLR has improved, the situation could be better: Stokke, *supra* note 36, p.149

¹⁸¹ Howard, *supra* note 34, pp.124-128; Chopra & Hansen, *supra* note 13, p.140; Stokke, *supra* note 36, p.141

relatively low intensity, it is of little utility anywhere.¹⁸²

The Commission's response, at least in the conservation measures adopted, has been to "soft pedal" the use of the ecosystem approach, and look at the management of individual species in individual areas. Orrego Vicuña has suggested the rationalisation for this can be found in CCAMLR recognising the implementation of its objectives are long term, and to have ignored economic factors and the interests of fishing nations in the interim would be impossible.¹⁸³ This approach by CCAMLR has drawn criticism from Australia and New Zealand, with the former formally stating to the Commission its disgust at the abandonment of the principles set down in Article II.¹⁸⁴ A system of inspection pursuant to Article XXIV was only introduced for the 1989/90 season.¹⁸⁵

Gradually, CCAMLR is moving towards effective implementation of an ecosystem approach. The Scientific Committee quickly recognised the difficulties of implementing an ecosystem approach, and in its third meeting in 1984 it moved to

¹⁸² Burke, *supra* note 54, pp.114-115; Mitchell and Sandbrook indicate that an ecosystem model is inconsistent with seeking an optimal yield from individual stocks: Mitchell & Sandbrook, *supra* note 28, p.48

¹⁸³ Orrego Vicuña, *supra* note 112, pp.145-146

¹⁸⁴ Closing statement to the fourth CCAMLR meeting in 1985: reprinted in Howard, *supra* note 34, p.135; see also CCAMLR, *Report of the Fourth Meeting of the Commission*, 2 - 13 September 1985, p.13

¹⁸⁵ Joyner, *supra* note 97, pp.245-246

establish an *Ad Hoc* Working Group on Ecosystem Monitoring.¹⁸⁶ The Working Group has met regularly since that time, and has worked to identify indicator species, both predator and prey, and integrated study areas for monitoring their interactions.¹⁸⁷

In addition, the CCAMLR Commission has introduced controls that are purely interested in protecting particular areas and species, without reference to their commercial value. It set up the CCAMLR Ecosystem Monitoring Program (CEMP) and has implemented special site management plans in the vicinity of Cape Shirreff on Livingston Island¹⁸⁸, at Seal Islands¹⁸⁹ in the South Shetlands, and most recently at Bouvet Island¹⁹⁰, to ensure the scientific research there goes undisturbed.¹⁹¹ Sealing off part of a fishery just to conduct research demonstrates

¹⁸⁶ CCAMLR, *Report of the Third Meeting of the Scientific Committee*, 3 - 13 September 1984, pp.36-37. The Working Group is now designated the Working Group for the CCAMLR Ecosystem Monitoring Programme (WG-CEMP).

¹⁸⁷ See also Scully, *supra* note 40, pp.145-146

¹⁸⁸ See Conservation Measures 18/IX and 82/XIII, as well as Resolution 11/XIII relating to the Cape Shirreff CEMP Protected Area. Resolution 11/XIII asked members of the Commission to comply with management arrangements on a voluntary basis until Conservation Measure 82/XIII commenced on 1 May 1995.

¹⁸⁹ Conservation Measure 62/XI, building on Resolution 8/X

¹⁹⁰ CCAMLR, *Report of the Sixteenth Meeting of the Commission*, 27 October - 7 November 1997, p.6

¹⁹¹ See Stokke, *supra* note 36, p.137

a strong commitment to improving data collection and the ecosystem approach within the CCAMLR area.¹⁹²

Similar initiative can be seen in the imposition of controls designed to limit seabird mortality in fishing within the CCAMLR area. There has been increasing concern that longline fishing has had a detrimental affect on albatross populations, and a number of Conservation Measures have sought to alleviate this problem. Vessels are required to conduct operations to sink longline hooks baited with thawed bait, to use a streamer line to discourage birds, to set lines only at night and with a minimum of ship's lights, and vessels are prohibited from dumping trash or offal during longline operations.¹⁹³ The FAO has recently moved to support the adoption of similar measures generally.¹⁹⁴ Efforts to ensure compliance within and outside the CCAMLR area also show the Commission, at least in recent times, is determined to meet its objectives set down in Article II.¹⁹⁵

¹⁹² See generally Orrego Vicuña, *supra* note 112, pp.150-151; Joyner, *supra* note 21, 86, pp.127-130

¹⁹³ Conservation Measures 29/X modified at various meetings to its current form in the 1998 meeting: Conservation Measure 29/XVI.

¹⁹⁴ Committee on Fisheries, "The International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries", *Report of the Twenty-Third Session*, Rome 15-19 February 1999: <<http://www.fao.org/WAICENT/FAOINFO/IPA/incide.htm>>

¹⁹⁵ Similar environmentally conscious provisions can be found in limits on mesh size, although these have a more commercial orientation: see Conservation Measure 2/III: This measure pertained to mesh sizes for various Antarctic finfish species; and Conservation Measure 4/V: This measure pertained methods of determining mesh size, and to net gauge.

Precautionary Approach

With precaution effectively incorporated into its structure, it is not surprising that in the early 1990s, there was explicit acceptance by the Commission that its management was based around a precautionary approach. This has been reinforced by the State parties regularly at Commission meetings¹⁹⁶, and can be evidenced in conservation measures. Two types of conservation measures in this context are worth individual discussion.

First, Conservation Measure 31/X deals with exploratory fisheries. It requires that States who wish to initiate activity in a fishing ground must first notify the Commission of their intention, and accompany that notification with scientific data on the fishery itself and on dependent and associated species. No action in the fishery can take place until this data is provided and the Commission has reviewed the situation, with recommendations of the Scientific Committee. This ensures that no fishing can take place until at least the ramifications of such action have been weighed up and discussed. Conservation Measure 65/XII supplements 31/X by ensuring a high level of monitoring and the restriction of increased activity is maintained. Failure to submit all the required data automatically leads to the closure of the fishery. Such stringent requirements for new fisheries indicate a strong commitment to a precautionary approach to stock management, and ensures

¹⁹⁶ For example see CCAMLR, *Report of the Sixteenth Meeting of the Commission, 27 October - 7 November 1997*, p.98

that the Commission can take steps even before exploitation takes place. In 1991, these measures were applied to an exploratory crab fishery when the United States approached the Commission and subsequently gained approval for harvesting.¹⁹⁷

Since that time, the number of exploratory fisheries has grown significantly. In 1998, there were some 11 individual conservation measures active pertaining to exploratory fisheries. The bulk of these concerned new fisheries for *Dissostichus eleginoides* and *D. mawsonii*.¹⁹⁸ Interestingly, some of the measures were instituted in 1996, and not acted upon in 1997.¹⁹⁹ This suggests the strength of the precautionary approach within the CCAMLR system, in that States were willing to seek approval for fisheries even when there was doubt fishing might ever commence, rather than simply starting to fish, and using results from such efforts as the basis of research to justify a continuation of fishing.

¹⁹⁷ See CCAMLR, *Eleventh Meeting of the Commission*, 26 October 1992 - 6 November 1992, pp.27-28; see also Conservation Measures 60/XI, 74/XII, 75/XII and 79/XIII. See also Orrego Vicuña, *supra* note 112, p.149; Stokke, *supra* note 36, p.145

¹⁹⁸ Conservation Measures 162/XVII, 163/XVII, 164/XVII, 166/XVII, 168/XVII, 169/XVII related to specific areas, while Conservation Measure 161/XVII pertained to *Dissostichus spp.* generally.

¹⁹⁹ Norway and South Africa had given notice of two exploratory fisheries at the 1996 meeting which did not commence for "administrative reasons", while one Australian exploratory fishery yielded 7 kilograms and one New Zealand fishery yielded 128 kilograms of patagonian toothfish: CCAMLR, *Report of the Sixteenth Meeting of the Commission*, 27 October - 7 November 1997, pp.24-25

Second, CCAMLR has formally adopted precaution in the setting of total allowable catch limits. Conservation measures are expressed to set precautionary TACs, and decision-rule reference points are incorporated into stock assessments. Although a precautionary approach can be inferred without difficulty from CCAMLR's objective, the use of precaution in the setting of TACs has effectively been institutionalised, with all TACs referred to as "precautionary".²⁰⁰ The speedy acceptance of precaution within the organization is now viewed with pride by some of the State parties.²⁰¹ It is also apparent that the view of what precaution entails within CCAMLR is consistent with its application elsewhere in the world, given the Scientific Committee has sought to participate in FAO-sponsored consultations on the precautionary approach, and been encouraged to do so by the Commission.²⁰²

Third, CCAMLR has imposed reporting and catch standards for fishing vessels

²⁰⁰ The designation of precautionary TACs rather than "catch limits" began in 1991 with Conservation Measure 32/X. The change was gradual, as both terms were used for different measures at the same meeting: cf. Conservation Measure 35/X. The change in terminology was based upon advice from the Scientific Committee, which advised that the catch limit put forward for *Euphausia superba* in 1991 was "precautionary": CCAMLR, *Report of the Tenth Meeting of the Commission*, 21 October - 1 November 1991, p.17

²⁰¹ For example see the statements of the Chilean delegation in 1994: CCAMLR, *Report of the Thirteenth Meeting of the Commission*, 26 October 1994 - 4 November 1994, pp.23-24; see the statements of the Norwegian delegation: CCAMLR, *Report of the Sixteenth Meeting of the Commission*, 27 October - 7 November 1997, p.10

²⁰² See discussion in CCAMLR, *Report of the Fourteenth Meeting of the Commission*, 24 October - 3 November 1995, p.57

which are extremely detailed. In 1998, five separate conservation measures were in force with respect to data reporting of fishing activities generally²⁰³: a monthly catch and effort reporting system²⁰⁴; a five day catch and effort reporting system²⁰⁵; a ten day catch and effort reporting system²⁰⁶; a monthly fine-scale biological data reporting system for trawl and longline fisheries²⁰⁷; and, a monthly fine-scale catch and effort data reporting system for trawl and longline fisheries.²⁰⁸ CCAMLR reporting systems are among the most detailed, and therefore from a vessel's perspective, onerous in the world. For example, "fine-scale" reporting requires specific data in respect of areas of ocean 1° by 0.5° in area, and failure to submit reports within required time periods can lead to the closure of fisheries to vessels of that State.²⁰⁹ Such measures are entirely consistent with a precautionary approach, and essential if the implementation of an

²⁰³ The different measures are applied to specific conservation measures as directed. For example Conservation Measure 153/XVII requires vessels participating in the directed fishery for *Champsocephalus gunnari* in Subarea 48.3 to implement the five day catch and effort reporting system in Conservation Measure 51/XII, and the monthly fine-scale catch and effort data reporting system in Conservation Measure 122/XVI. Each new conservation measure specifies the appropriate reporting measures for its operation.

²⁰⁴ Conservation Measure 40/X

²⁰⁵ Conservation Measure 51/XII

²⁰⁶ Conservation Measure 61/XII

²⁰⁷ Conservation Measure 121/XVI

²⁰⁸ Conservation Measure 122/XVI

²⁰⁹ Conservation Measures 121/XVI(4) and 122/XVI(5)

ecosystem approach is to be achieved and maintained.

A number of other conservation measures are also reflective of a precautionary approach, by limiting access to particular areas pending adequate scientific data. An example is Conservation Measure 73/XVI which prohibited all taking of finfish, with the exception of *Dissostichus spp.*, in the Subarea 48.2, pending research to establish the biomass of these fisheries, and consideration of that research by the Scientific Committee and the Commission.²¹⁰ This is clearly throwing the onus on those who might wish to have this fishery opened to obtain data that could justify the taking of such action, which is entirely consistent with a precautionary approach.²¹¹ Similarly, in 1997 the Commission considered the question of the reopening of lapsed fisheries, and expressly stated this had to be done in accordance with precautionary principles.²¹²

Management

While CCAMLR was slow to achieve a notable measure of cooperation, it seems

²¹⁰ This measure continued in force through 1998: CCAMLR, *Report of the Sixteenth Meeting of the Commission, 27 October - 7 November 1997*, p.51. The Commission Report does not indicate that there was any intention to carry out such research immediately. Presumably before a State could seek to have a fishery opened, it would be obliged to undertake satisfactory research.

²¹¹ See the discussion in Chapter 3 at p.189

²¹² CCAMLR, *Report of the Sixteenth Meeting of the Commission, 27 October - 7 November 1997*, p.98

that cooperative effort is now present.²¹³ Recent publicists²¹⁴ have an essentially positive outlook for CCAMLR, and, at least until the toothfish crisis considered below, there were sound reasons for this. The increasing international awareness of environmental issues, and the rise of notions of sustainable development and the precautionary principle, and the increasing goodwill and cooperative spirit of the parties bode well for CCAMLR. International law is coming to embrace the principles which CCAMLR embodies, and even States hostile to the ATS are compelled to recognise the environmental record and approach used within the System are an example to the rest of the international community.²¹⁵ As such, if the trend towards environmental responsibility continues, then the likelihood of increasing cooperative effort within CCAMLR increases, and this would suggest an increasing level of effectiveness for the

²¹³ An excellent example of this comes from the discussion in relation to Conservation Measure 55/XI (1992). There was substantial disagreement between the parties - particularly Chile and Russia over the catch and number of vessels taking *Dissostichus eleginoides*. Rather than have no measure, there was a great deal of hurried negotiation and compromise which ultimately produced Conservation Measure 55/XI. Both Chile and Russia made a point of expressly thanking all the delegations who assisted on reaching an acceptable solution: CCAMLR, *Report of the Eleventh Meeting of the Commission*, 26 October 1992 - 6 November 1992, pp.24-26

²¹⁴ Orrego Vicuña, *supra* note 175. Heap, *supra* note 29. Qualified support also comes from Sahurie: Sahurie, *supra* note 5, p.537

²¹⁵ This is borne out by an apparent moderation of the United Nations General Assembly to the ATS, and its praise of the environmental safeguards introduced under it: see P.J. Beck, "The United Nations and Antarctica, 1992: Still Searching for that Elusive Convergence of View" (1993) 29 *Polar Record* p.313

Commission in the future.²¹⁶

Cooperation and a lack of discord are all measures of success based on function and activity, but success may also be measured on a more objective plane. Ultimately, CCAMLR's function is to meet its objectives in conserving the Antarctic environment, and accordingly estimation of the size and status of key Antarctic species are one way of judging the success or failure of the regime. Accordingly, CCAMLR's performance can be judged in relation to the pressure upon Antarctic marine living resources and the impact of CCAMLR's conservation measures.

The principal exploited resource in the CCAMLR area is krill. CCAMLR has only sought to regulate the krill harvest since 1991, when a catch limit of 1.5 million tonnes was set.²¹⁷ Exploitation has never approached this level, as Table I below shows:

²¹⁶ A good example of this can be seen in the statements of the Chilean delegation in 1994 at the thirteenth CCAMLR meeting endorsing a precautionary approach and that environmental controls, going beyond the letter of the various ATS instruments would arise in time: CCAMLR, *Report of the Thirteenth Meeting of the Commission*, 26 October 1994 - 4 November 1994, pp.23-24

²¹⁷ For the Atlantic sector only: Conservation Measure 32/X (1991)

Krill Catch in CCAMLR Treaty Area

(figures in metric tonnes)²¹⁸

	1971	1972	1973	1974	1975
CCAMLR Area Total	0	0	59	19 785	44 029

	1976	1977	1978	1979	1980
CCAMLR Area Total	5 635	91 516	132 349	333 128	477 028

²¹⁸ (1992) 74 *FAO Yearbook: Fisheries Statistics - Catches and Landings* p.385

	1981	1982	1983	1984	1985
Atlantic Region	n.a.	373 586	138 361	104 608	180 807
Indian Region	n.a.	147 978	79 645	22 897	5 932
Pacific Region	n.a.	6 637	10 637	641	4721
CCAMLR Area Total	448,132	528 201	228 643	128 218	191 460

	1986	1987	1988	1989	1990
Atlantic Region	425 871	346 504	364 173	394 482	344 445
Indian Region	15 910	29 557	6 490	217	29 753
Pacific Region	3 892	394	-	-	658
CCAMLR Area Total	445 973	376 455	370 663	395 059	374 856

	1991	1992	1993	1994	1995	1996
Atlantic Region	231 225	296 200	82 965	82 919	n.a.	n.a.
Indian Region	1 329	-	5812	899	n.a.	n.a.
Pacific Region	3	50	-	-	n.a.	n.a.
CCAMLR Area Total	232 557	296 250	88 777	83 818	117 916	82 508

These figures merely show that the krill harvest was greater than before the introduction of CCAMLR, and after rallying in the late-1980's, is suffering a decline. Certainly, the catch at no stage has ever approached the 1.5 million tonne limit imposed by CCAMLR²¹⁹, and if estimates of the krill biomass and levels of recruitment are correct, the stock is in no danger.²²⁰

²¹⁹ *Ibid.* See also Conservation Measures 45/XI and 46/XI which breakdown the 1.5 million tonne limit by region and sub-region.

²²⁰ This is not entirely certain. Even a small quota may not be free of potential damage to other species within the ecosystem. Krill swarming behaviour can mean dependent species can drastically affected if swarms do not form in particular areas. Note the recent dramatic effects on the Bechervaise

Whether CCAMLR is responsible for this state of affairs is debatable. No action by the Commission has acted as a disincentive to harvest krill, although it is possible to say that the mere existence of CCAMLR itself might be enough. This would be supported by the sharp decline in the harvest from 1982, prior to the first meeting of the Commission, and 1983. On the other hand, other more credible factors might be called in to explain the lack of growth of the krill harvest.

Firstly, Russian vessels have taken the bulk of the catch, and since the break-up of the Soviet Union, and the accompanying economic dislocation, the size of the Russian fishing fleet has declined. This in turn is reflected in a drop in the figures, at least since 1990.²²¹ Secondly, international demand for krill is limited. Except in Asia and Russia, attempts to sell krill as food for humans have met with little success.²²² It certainly is useful as an animal food supplement, but given that the

Island penguin colony in an area that had not seen krill harvesting for five years: see A. Darby, "Penguin Chicks Dying Off" *Sydney Morning Herald* 19 January 1995

²²¹ This can be underlined by the virtual withdrawal of Russia from the fishery between 1992 and 1994. In 1991, the former USSR krill catch was 275,495 tonnes. In 1992, the Russian catch fell to 137,310 tonnes, and the catch by the Ukraine was 61,719 tonnes. In 1994, the Russian catch was a mere 965 tonnes, and the Ukraine taking 8708 tonnes: see CCAMLR, *Report of the Thirteenth Meeting of the Scientific Committee*, 24 - 28 October 1994, p.25

²²² Except in Asia, where krill are considered a delicacy, there is little market for krill for human consumption. The only large scale processing for humans was the production of a coagulate paste made out of pulverised krill. This paste was heavily marketed in the USSR, but suffered from quality problems depending on the size and differing grades of the krill used: E. Budzinski, P. Bykowski & D. Dutkiewicz, *Possibilities of Processing and Marketing of Products made from Antarctic Krill*, (Rome: FAO, 1985)

waters it is found in are remote, and krill is extremely susceptible to spoiling soon after being caught, krill has not attracted huge fleets of vessels.²²³ Most vessels fishing in the Southern Ocean for krill, at least in the 1970s and 1980s, did so as a backstop for the finfish harvest. If the finfish catch was good, they did not go after krill, whereas if it was poor, costs could be offset by a good krill catch.²²⁴ In fact, the variability of the Soviet finfish catch between 1982 and 1983, and difficulties in krill processing are a more realistic explanation for the changes in size of the krill harvest in the early to mid-1980s.²²⁵

Whether the overfishing of krill has been avoided more by circumstance than by management has not deterred CCAMLR from taking steps to ensure that the present sound situation does not alter. Recognition of the special status of the stock can be seen in the formation of a Working Group within the Scientific Committee to deal exclusively with krill. This Working Group was established in 1987 and has met annually to provide specific advice to the Scientific Committee in relation to this

pp.10-13

²²³ The shelf life of frozen krill at -18°C is only 3 months, and is difficult to process for a variety of reasons, including its size, quality variability, and loss of nutrients during the peeling process: Budzinski, Bykowski & Dutkiewicz, *supra* note 222, pp.6-11

²²⁴ Kock, *supra* note 26, pp.189-191

²²⁵ J.-C. Hureau & W. Slosarczyk, "Exploitation and Conservation of Antarctic Fishes and Recent Ichthyological Research in the Southern Ocean" in O. Gon & P.C. Heemstra (eds), *Fishes of the Southern Ocean*, (Grahamstown: J.L.B. Smith Institute of Ichthyology, 1990) p.52 at p.59

vital stock, and to act as a focus for research on this fundamental species.²²⁶

Several species of finfish have been commercially exploited in Southern Ocean waters, including the marbled rockcod (*Notothenia rossii*) and the mackerel icefish (*Chamsocephalus gunnari*). Vast quantities of these stocks were taken in the early to mid-1970's, and their decline can be dramatically illustrated in the graphs II and III.²²⁷

The first Conservation Measures introduced by CCAMLR were directed essentially at these fisheries, in the vicinity of South Georgia and other islands in the South Atlantic Ocean.²²⁸ TACs for these fisheries have been set at very low levels²²⁹, or fisheries have been closed.²³⁰ Stringent requirements have been placed on

²²⁶ The Scientific Committee moved to make the Working Group permanent in 1988. Its first meeting under this arrangement took place in 1989: CCAMLR, *Report of the Seventh Meeting of the Scientific Committee*, 24 - 31 October 1988, pp.9-12

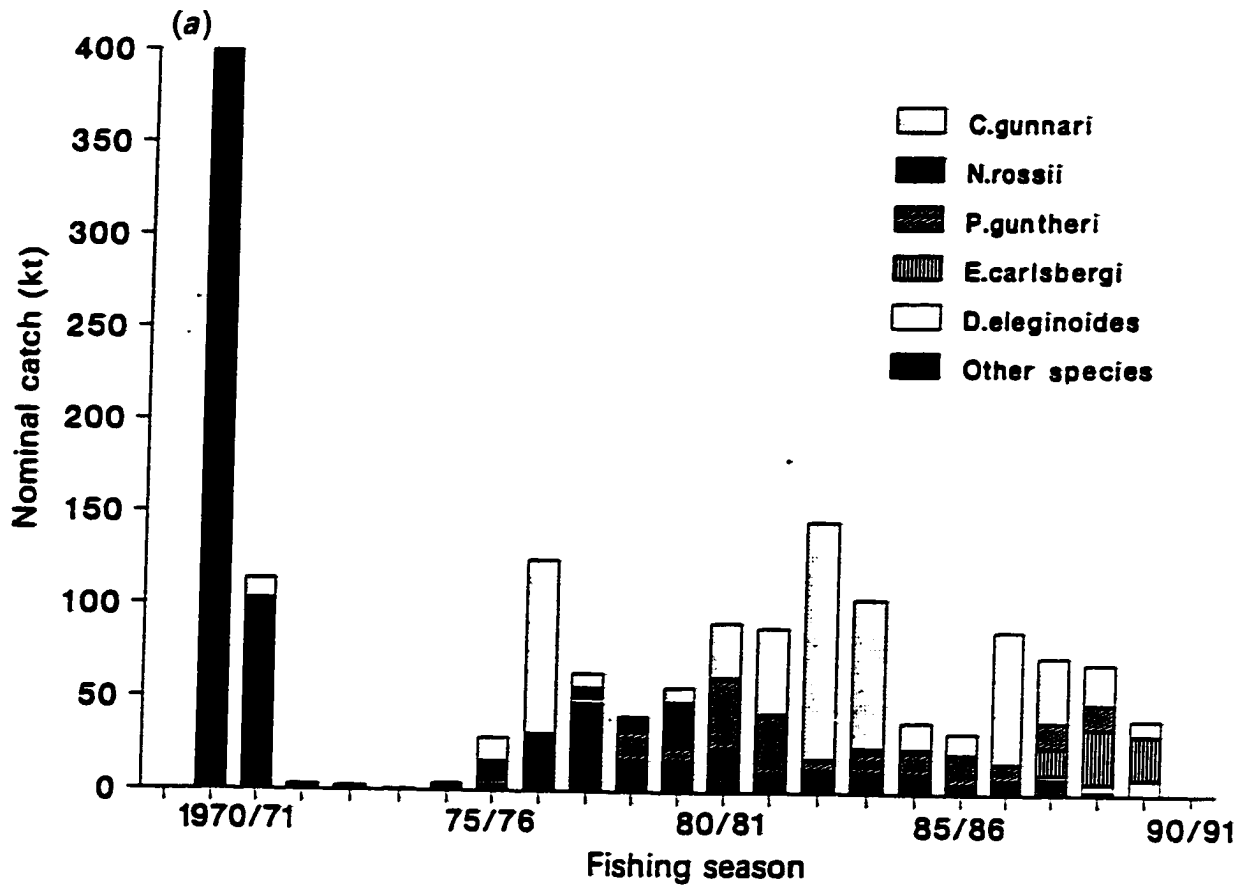
²²⁷ These are in the Appendix at the end of the paper.

²²⁸ For example Conservation Measure 1/III closed the waters within 12 miles of South Georgia; Conservation Measures 3/IV, 5/V and 6/V prohibited directed fishing for *Notothenia rossii* in Subareas 48.3, 48.1 and 48.2 respectively.

²²⁹ For example in 1998, Conservation Measure 153/XVII limited the catch of *Chamsocephalus gunnari* to 4840 tonnes in Subarea 48.3

²³⁰ For 1999, Conservation Measures 3/IV, 5/V, 6/V, 72/XVII, 73/XVII, 129/XVII, 149/XVII, 152/XVII and 160/XVII were all in force, and each prohibited fishing in particular areas for certain species, or stocks generally. Conservation Measures 129/XVII and 160/XVII applied to the Ob and Lena Banks in the Indian Ocean Sector.

Fish Catches of Selected Species around South Georgia



commercial fishing, where it is permitted, all with the intention of allowing these stocks to recover. However, to the present time, these fisheries are still not capable of serious commercial fishing. Does this mean CCAMLR has failed?

Realistically, it would seem unfair to lay all of the blame for the destruction of most of the Antarctic finfish stocks upon CCAMLR. The Convention came into force in 1981, by which time the destruction of most of the species had been completed. Although CCAMLR's early record of cooperative endeavour was poor, the first Conservation Measures introduced went some way to try to restore these stocks. Later Conservation Measures have sought not merely to try to permit the fisheries to restore themselves by closure of areas, but also have imposed stringent by-catch controls in areas where other species are fished, to ensure the biomass of the depleted fisheries are not further reduced. The stocks have not recovered since their depletion, but it is difficult to see what more CCAMLR could do, although certainly more could have been done sooner.²³¹

Prior to the present crisis, only one commercial species of Antarctic finfish was exploited at commercial levels in the years during the currency of CCAMLR: *Electona carlsbergi*.²³² In CCAMLR's early years, catches of *E. carlsbergi* did

²³¹ Note the graph and commentary provided by Stokke: Stokke, *supra* note 36, pp.134-136

²³² Also known as the Antarctic Lanternfish.

not exceed 2500 tonnes. However in 1988, this jumped to approximately 15,000 tonnes, and in 1989 to 30,000 tonnes.²³³ In spite of reports of a biomass of in excess of 1.7 million tonnes, and a dearth of additional information concerning the fishery²³⁴, Conservation measure 38/X was adopted by the Commission, setting a limit of 245,000 tonnes.²³⁵ This was coupled with stringent by-catch requirements, and additional measures as regards data reporting.²³⁶ More encouraging was the response of the Commission in 1993, to the continuing lack of data. Rather than maintain the TAC at the same level, it adopted a "precautionary TAC" of 200 000 tonnes because "in the continuing absence of any information on the biomass and biological characteristics of the stock...it was no longer acceptable for this stock to continue to set TACs in line with assessments that were several years old".²³⁷ The catch in 1992 had amounted to some 47 000 tonnes²³⁸, and there was no evidence to suggest the stock was in decline. Yet CCAMLR applied a precautionary approach, to ensure that the chances of damage were minimised based on what data was known. This strongly suggests a genuine commitment on the part

²³³ FAO, *supra* note 218, Vol.74, p.265

²³⁴ Kock, *supra* note 26, p.233

²³⁵ The substantive provisions in Conservation Measure 38/X were re-enacted in Conservation Measure 53/XI.

²³⁶ Conservation Measures 39/X and 40/X

²³⁷ CCAMLR, *Report of the Twelfth Meeting of the Commission*, 25 October - 5 November 1993, p.27

²³⁸ FAO, *supra* note 218, Vol.74, p.265

of the parties to effective conservation of Antarctic fisheries, and a desire to preserve rather than to step in after the disaster and nurse destroyed fisheries back to health.²³⁹ A precautionary TAC of 109,000 tonnes has been adopted each year since 1995, suggesting the scale of the fishery is appropriate and sustainable.²⁴⁰

CCAMLR in Crisis: The Decline of the Patagonian Toothfish

The Anatomy of the Crisis

While it can be argued that krill was the stock for which CCAMLR was originally established, various species of finfish have also been harvested in the CCAMLR area since the early 1970s. As already noted, some of these stocks were effectively destroyed by extreme overfishing, but some species are still present in commercial numbers, and have been regularly harvested during CCAMLR's tenure.

The most notable of these stocks in recent times has been the patagonian toothfish.²⁴¹ The fish was identified in Antarctic waters over 100 years ago, but was not the subject of significant commercial interest until the mid-1980s, when the Soviet Union developed a longline fishery targeting the stock in the vicinity of Shag

²³⁹ This is also borne out in the statement of the Chilean delegation to the Commission at the 1994 meeting, which stressed common responsibility and a precautionary approach to management: *Supra* note 201, p.23

²⁴⁰ See Conservation Measures 96/XIV, 103/XV, 125/XVI and 155/XVII.

²⁴¹ There has also been an increase in harvesting the mackerel icefish (*Champsocephalus gunnari*), although not to the same scale of interest as the patagonian toothfish.

Rocks and South Georgia.²⁴² Soon after, concentrations of the species were located around other sub-Antarctic islands, and fishing of these began.²⁴³ The fish is one of the largest found in the Southern Ocean, growing to a maximum size of up to 215 centimetres, and weighing to in excess of 100 kilograms.²⁴⁴ While typically found in waters adjacent to shelf areas around sub-Antarctic islands, some specimens have been found in the stomachs of sperm whales, suggesting the species range may be somewhat greater.²⁴⁵ Their typical depth range is between 70 and 1500 metres.²⁴⁶

Fishing operations in the Southern Ocean are expensive and inherently dangerous. The waters are remote from any significant ports and are recognised as the roughest in the world. The large long-range refrigerated fishing vessels capable of operating in the Southern Ocean can cost between AU\$10 million and AU\$30 million, with daily operating costs of between AU\$20,000 and AU\$40,000 per day. Such a vessel will need to take between 5000 and 10000 metric tonnes of fish per annum

²⁴² Kock, *supra* note 26, p.179. Bardach notes that just over 2000 tonnes of patagonian toothfish were taken in the 1977/78 season, but in the next 5 years catches for the whole of the Southern Ocean never exceeded 354 tonnes in a season: J.E. Bardach, "Fish Far Away: Comments on Antarctic Fisheries" (1986) 6 *Ocean Yearbook* p.38 at p.47

²⁴³ Most notably around the Kerguelen Islands: Kock, *supra* note 26, pp.194-195

²⁴⁴ Kock, *supra* note 26, p.107

²⁴⁵ Kock, *supra* note 26, p.34

²⁴⁶ Bardach, *supra* note 242, p.44

to be financially viable.²⁴⁷ Beltramino notes that the costs of vessels operating in the Southern Ocean may be more than twice the cost of equivalent vessels in traditional grounds.²⁴⁸

The problem of unauthorised fishing for patagonian toothfish in the Southern Ocean is a comparatively recent one. Fishing initially began in the waters around South Georgia, with CCAMLR noting a modest catch of 8,311 metric tonnes prior to the introduction of conservation measures.²⁴⁹ Conservation Measure 24/IX set a limit of 2,500 tonnes of toothfish for Subarea 48.3 around South Georgia for 1991, and similar measures with analogous TACs were set for the same fishery each year following until 1995.²⁵⁰ In that year, South Africa and Australia made applications to open exploratory fisheries for patagonian toothfish, around Heard Island, the BANZARE and Elan Banks, and around the Prince Edward Islands.²⁵¹

²⁴⁷ M. Exel, "Exploitation of Southern Ocean Fisheries: An Industry Perspective" in S. Bateman and D.R. Rothwell (eds), *Southern Ocean Fishing: Policy Challenges for Australia*, (Wollongong: Centre for Maritime Policy) p.103 at p.105

²⁴⁸ J.C.M. Beltramino, "Management of the Southern Ocean Resources and Environment" in P. Fabbri (ed.), *Ocean Management in Global Change*, (London: Elsevier, 1992) p.576 at p.585

²⁴⁹ CCAMLR, *Report of the Thirteenth Meeting of the Scientific Committee*, 24 - 28 October 1994, p.11

²⁵⁰ In 1992, the precautionary TAC was set at 3350 tonnes: Conservation Measure 55/XI; in 1993, it was 1300 tonnes: Conservation Measure 69/XII; in 1994, it was 2800 tonnes: Conservation Measure 80/XIII

²⁵¹ See CCAMLR, *Report of the Fourteenth Meeting of the Commission*, 24 October - 3 November 1995, p.21

Fishing for the stock was also authorised around the South Sandwich Islands.²⁵²

The initial TACs set for these new fisheries were very low, essentially because the data available on the stocks was extremely limited. For example, when the Scientific Committee considered the Heard Island fishery at the end of 1994, they noted the only data available on the fishery were 3 trawl surveys conducted since 1990.²⁵³ With such little data, the Commission, on the advice of the Scientific Committee, set catch limits of 297 tonnes for the new exploratory fishery.²⁵⁴ Further data was still limited in 1995, so the same limits were used for the next season, with bycatch limitations imposed.²⁵⁵ By 1996, the Commission considered further requests for new patagonian toothfish areas, with interest being expressed by a significant portion of its membership.²⁵⁶

At the same time, there was increasing concern from some Commission members that unauthorised fishing was taking place in the CCAMLR Area. At the 1996 meeting, Britain, Uruguay and South Africa reported fishing by vessels flagged in

²⁵² A precautionary TAC of 28 tonnes was set: Conservation Measure 92/XIV

²⁵³ CCAMLR, *Report of the Thirteenth Meeting of the Scientific Committee*, 24 - 28 October 1994, pp.171-176

²⁵⁴ Conservation Measure 78/XIII

²⁵⁵ Conservation Measure 78/XIV

²⁵⁶ CCAMLR, *Report of the Fifteenth Meeting of the Commission*, 21 October - 1 November 1996, pp.34-38

Belize, Panama, Vanuatu and Portugal.²⁵⁷ This concern was heightened by the fact that two of the vessels were reflagged, having originally belonged to a CCAMLR member State. Beyond the European Union representative advising that an official request had been sent to Portugal, the Commission could only respond by the drafting of a standard letter, and report to members on the response.²⁵⁸

Matters then moved quickly as the level of unauthorised fishing for patagonian toothfish began to increase at an alarming rate. In late 1996, reports of in excess of 100 vessels targeting patagonian toothfish around the sub-Antarctic islands in the Indian Ocean, and catches of between 55000 and 60000 tonnes in a six month period from these waters began to emerge, suggesting the level of the problem was far greater than previously supposed.²⁵⁹ The magnitude of this fishing can be appreciated when compared to a Convention Area finfish catch in 1995/96 of less than 9000 tonnes²⁶⁰, and combined conservation measures in 1996 authorising no more than 17000 tonnes of toothfish.²⁶¹

²⁵⁷ CCAMLR, *Report of the Fifteenth Meeting of the Commission*, 21 October - 1 November 1996, p.141

²⁵⁸ CCAMLR, *Report of the Fifteenth Meeting of the Commission*, 21 October - 1 November 1996, pp.25-26

²⁵⁹ J. Martin, "Targeting the Toothfish" (1997) 17 *New Zealand Defence Quarterly* p.10; Bateman & Rothwell, *supra* note 170, p.134

²⁶⁰ CCAMLR, *Report of the Fifteenth Meeting of the Commission*, 21 October - 1 November 1996, p.7

²⁶¹ Calculated from the aggregation of Conservation Measures 101/XV, 102/XV, 109/XV, 112/XV, 113/XV, 114/XV, 115/XV and 116/XV.

In the 1996/97 season, the finfish reported catch to the Commission by CCAMLR States was 10,562 metric tonnes, of which approximately 97 percent was patagonian toothfish. The Commission estimated that the unauthorised catch for the same period was in the order of 5 to 6 times that amount, that between 74,000 and 82,000 tonnes of toothfish were landed through southern African and Mauritian ports, and approximately 130,000 metric tonnes of the fish were on the world market.²⁶²

One consequence of this level of fishing for patagonian toothfish was a dramatic increase in seabird mortality. In some areas, *Dissostichus eleginoides* was caught by use of longlines, and these attracted seabirds, which were killed when attempting to eat the bait. CCAMLR had instituted a series of conservation measures designed to minimise incidental seabird mortality, but not all vessels chose to comply with these measures. As a result, in the 1995/96 season in Subarea 48.3 in the vicinity of South Georgia, the Scientific Committee estimated 1600 were killed. In the 1996/97 season, this had risen to 5755 birds for the same area. Black-browed albatross and white-chinned petrels were the species most affected. Seabird bycatch for unregulated fishing was estimated to be as much as 20 times greater.²⁶³

²⁶² CCAMLR, *Report of the Sixteenth Meeting of the Commission, 27 October - 7 November 1997*, pp.6-7

²⁶³ CCAMLR, *Report of the Sixteenth Meeting of the Commission, 27 October - 7 November 1997*, pp.20-23

At the Commission's 1997 meeting, the Norwegian delegation alleged that over half the vessels engaged in the unregulated and unreported fishing were flying the flags of CCAMLR States.²⁶⁴ At the same meeting, New Zealand described the growing crisis as the greatest threat CCAMLR had faced in its existence²⁶⁵, and concerns received support from the bulk of the delegations.²⁶⁶ For the first time since the destruction of finfish stocks in the early 1970s, a species was in significant danger of being commercially, if not completely, destroyed, and the effectiveness of CCAMLR to prevent this from occurring was directly in issue.

Responses of CCAMLR to the Crisis

The ability of CCAMLR to respond to the present crisis is largely dependent on the source of unauthorised fishing in the Southern Ocean. If most of this fishing is taking place by vessels flagged by CCAMLR members, then the Commission can request those members to meet their obligations, and prosecute vessels fishing illegally. In 1996, this was apparently the case, and the Commission moved to address the issue with a series of conservation measures.

²⁶⁴ CCAMLR, *Report of the Sixteenth Meeting of the Commission*, 27 October - 7 November 1997, p.10

²⁶⁵ CCAMLR, *Report of the Sixteenth Meeting of the Commission*, 27 October - 7 November 1997, p.11

²⁶⁶ Support was expressed by South Africa, Australia, France, Britain, Japan, the United States, Argentina, Chile, Italy and Brazil. Given the tone of the Report, there is no reason to assume that any States objected to the New Zealand assessment: CCAMLR, *Report of the Sixteenth Meeting of the Commission*, 27 October - 7 November 1997, pp.11-12

At the 1996 CCAMLR meeting, the Commission set precautionary TACs for *Dissostichus eleginoides* in the fisheries around South Georgia, the South Sandwich Islands, and Heard Island, and permitted exploratory fisheries around Prince Edward and the Crozet Islands, in the central Atlantic and western and central Pacific sectors of the Southern Ocean.²⁶⁷ The TACs were set with stringent bycatch limitations, and the requirement of a CCAMLR scientific observer on all ships. Vessels were also required to report data on the number and weight of all *Dissostichus eleginoides* discarded, and that these be counted towards the total allowable catch.²⁶⁸

In addition to dealing with the fisheries individually, CCAMLR also instituted Conservation Measure 112/XV, which applies to all the new toothfish areas. It requires that where catch levels reach 100 tonnes in a fine-scale rectangle area²⁶⁹, that area be closed for the remainder of the season. This is expressly to ensure that fishing be spread over "as large a geographic and bathometric range as possible to obtain the information necessary to determine fishery potential and avoid over-concentration of catch and effort".²⁷⁰ Other provisions with regard to reporting

²⁶⁷ Conservation Measures 101/XV, 102/XV, 109/XV, 112/XV, 113/XV, 114/XV, 115/XV and 116/XV.

²⁶⁸ Each Conservation Measure contained similar restrictions, while extensive data reporting was required under Conservation Measure 117/XV

²⁶⁹ Defined as a box 1° by 0.5° of latitude in area.

²⁷⁰ Conservation Measure 112/XV para. 1

schedules and discarding fish substantially reflect the specific measure considered above.

In 1997 and 1998, further conservation measures setting precautionary TACs with equally stringent reporting and bycatch requirements were put in place for all the existing new *Dissostichus spp.* fisheries. These measures have been directed at both trawl and longline fisheries, and encompass fisheries both north and south of 60° South, and those which have been the site of heavy exploitation and those which have yet to be targeted by unauthorised vessels.²⁷¹ For the 1999 season, Conservation Measure 149/XVII also provides that all toothfish fisheries are closed except where authorised by a specific conservation measure.

Efforts to address internal compliance by CCAMLR State parties produced conservation measures 119/XVI and 148/XVII in 1997 and 1998. The former version of the measure required all CCAMLR States to licence vessels undertaking fishing activity in the CCAMLR area, in a manner not dissimilar to the scheme envisaged under the FAO's Compliance Agreement.²⁷² Essentially each State

²⁷¹ The Conservation Measures adopted at the 1998 meeting pertaining to *Dissostichus eleginoides* and *Dissostichus mawsonii* are Conservation Measures 154/XVII, 156/XVII, 158/XVII, 159/XVII, 160/XVII, 161/XVII, 162/XVII, 163/XVII, 164/XVII, 166/XVII, 167/XVII, 168/XVII and 169/XVII.

²⁷² See discussions in Chapter 3 at p.232. At the 1997 meeting, the Commission encouraged State parties to become adopt the FAO Compliance Agreement: CCAMLR, *Report of the Sixteenth Meeting of the Commission*,

must licence all vessels that are to fish in the CCAMLR Area, and must ensure that only vessels that can meet the minimum reporting requirements are licensed.²⁷³ A voluntary vessel monitoring system (VMS) was also included, as there was no consensus for the compulsory imposition of VMS.²⁷⁴ It is a measure of the concern directed at illegal fishing that the proponents of compulsory VMS were able to get such a scheme approved during the 1998 CCAMLR meeting²⁷⁵, albeit introduced gradually over the following 18 months.²⁷⁶

These monitoring measures were supplemented by a limited scheme of cooperation introduced at the 1998 meeting. Should a CCAMLR-licensed vessel wish to enter the port of another CCAMLR State, it is obliged to notify the port State at least 72 hours prior to its arrival. Within the 48 hours following that arrival, the port State is obliged to carry out an inspection of the vessel, to determine if CCAMLR conservation measures have been complied with. If a breach is found, the flag State and the port State are to cooperate to ensure appropriate action is taken

27 October - 7 November 1997, p.33

²⁷³ Conservation Measure 119/XVII. Also note Conservation Measure 146/XVI which requires all fishing vessels, and floating gear used by appropriately marked to aid in identification. This presumably aids in the ready identification of unlicensed vessels and the gear they have deployed.

²⁷⁴ Stone, *supra* note 176, 180, p.100

²⁷⁵ Conservation Measure 148/XVII

²⁷⁶ States are to ensure the installation of VMS on all CCAMLR licensed vessels by 1 March 1999 if possible, but the absolute deadline for such installation is 31 December 2000: Conservation Measure 148/XVII

against the vessel.²⁷⁷

While conservation measure 147/XVII appears to be a step forward in the manner in which CCAMLR deals with cooperative enforcement, it is in fact somewhat conservative in its approach. Port State control is purported to be in accordance with international law, so does not diminish the existing rights a flag State would already possess. Further, the measure leaves prosecution of a recalcitrant vessel to the flag State, even though international law would countenance such action by a port State in its own right.²⁷⁸ This indicates the strength of State sovereignty that continues to influence the CCAMLR parties.

The practical upshot of these measures has been to alter the pattern of the fishery, rather than to prevent fishing. Vessels have been reflagged to States that are not CCAMLR parties, to avoid the imposition of the conservation measures.²⁷⁹ Dealing with fishing by third States has raised quite distinct problems for

²⁷⁷ Conservation Measure 147/XVII

²⁷⁸ On this point see J. Colombos, *The International Law of the Sea*, (London: Longman, 1972) p.315

²⁷⁹ A significant proportion of the reflagged vessels were originally under Norwegian or Danish registry. The vessels involved in the patagonian toothfish catch in the Indian Ocean sector of the Southern Ocean are named in an NGO report prepared in 1998: ISOFISH, *The Involvement of Mauritius in the Trade in Patagonian Toothfish from Illegal and Unregulated Longline Fishing in the Southern Ocean and What Might Be Done About It*, (Hobart: International Southern Oceans Longline Fisheries Information Clearing House, 1998) <<http://www.asoc.org/currentpres/mauritius.htm>>

CCAMLR, and has necessitated other measures in an attempt to deal with those problems.

CCAMLR and Third States

The issue of fishing in the CCAMLR area by vessels flagged in non-party States has become an increasing problem since 1995. The CCAMLR Commission's responses to the problem are enlightening, as they highlight the difficulty faced by an international marine living resource management organization in similar circumstances, and the adequacy of contemporary international law to obtain effective management and cooperation.

The first response from the Commission was to make use of Article X of CCAMLR, and "draw to the attention" of non-party flag States that vessels under their authority were acting in a manner that would undermine CCAMLR's efforts at sustainable management.²⁸⁰ A standard form communication was transmitted to the foreign minister of the flag State, urging them to curb their vessel's activities, and pointing out CCAMLR was open to accession by any State with an interest in fishing or research in the Southern Ocean.²⁸¹ This technique had proved effective in the past, and it was hoped that the non-party vessels could be brought into the

²⁸⁰ See the discussion of Article X above at p.415

²⁸¹ A copy of the standard form letter is reproduced in CCAMLR, *Report of the Sixteenth Meeting of the Commission*, 21 October - 1 November 1996, pp.163-164

fold through an increase in membership.²⁸²

However, CCAMLR did not attract any new State parties. States targeted by the Commission, and forwarded communications included Panama, Belize and Vanuatu. These States were all functioning as flag of convenience States, and had little or no control over the vessels registered in their States. The vessels were unlikely ever to visit their port of registration, and the presence of the corporate entities that owned the vessel were typically ephemeral at best. These States had little interest in the ships concerned except insofar as they generated revenue derived from their registration. Consequently, the flag States had no interest in becoming CCAMLR members, and even if they did so, they had no capacity either at home, or on the high seas, to enforce conservation measures or impose penalties.²⁸³

In terms of international law, Article X of CCAMLR used in this context is little more than an invitation to States cooperate. There is no attempt to assert that the flag States are under an obligation to cooperate or negotiate, although these options might be open under the Law of the Sea Convention. However, to compel the

²⁸² For example, the Commission approached the Ukraine in relation to its fishing activities in 1993, and that State subsequently acceded to CCAMLR in 1994: see CCAMLR, *Report of the Twelfth Meeting of the Commission*, 25 October - 5 November 1993, p.22

²⁸³ Details on the activities in the various flag of convenience States (and other States) in the patagonian toothfish catch is provided by ISOFISH, *supra* note 279, paras 7.1.2 - 7.1.17

cooperation of these States would, in practical terms, serve little practical purpose. The *pacta de contrahendo* and *de negotiando* operate on the assumption that the flag State concerned will have some ability to assert its authority over vessels flying its flag. The assumption is presumably based on the requirement of a connection between the flag State and the vessel concerned, and the capacity to take meaningful action based on that connection. In the case of the flag of convenience States, as already noted in Chapter 2²⁸⁴, these States rarely possess the capacity or the inclination to enforce their law aboard vessels flying their flag. Few, if any current Southern Ocean fishing vessels, flagged in Vanuatu or Belize, are likely to ever visit their home port, nor do their owners have anything more than a token corporate presence these countries. To become a party to a convention such as CCAMLR would serve little purpose, as it would entail a financial commitment to be an active participant in the regime. Further, the only likely return for such participation would be the inconvenience of attempting to enforce conservation measures, and the revenue from the transfer of the fishing vessels to another more accommodating flag.

CCAMLR's second response was to attempt to restrict the port access of the recalcitrant vessels. A number of vessels taking patagonian toothfish had been using South African ports to land their catch, but South Africa, in line with other CCAMLR Southern hemisphere States, closed its ports to such vessels. This saw a

²⁸⁴ See discussion in Chapter 2 at p.164

relocation of the vessels to non-party States, most notably Namibia and particularly Mauritius.²⁸⁵ Subsequently, CCAMLR States have invited these port States to attend CCAMLR meetings, and have exerted their influence to have these States close their ports to the toothfish trade. While the pressure from CCAMLR States and NGOs on Mauritius has been great²⁸⁶, as at March 1999, vessels landing patagonian toothfish were still being landed in Port Louis.²⁸⁷

In theory, port State access could be a means to effectively regulate the world trade in patagonian toothfish. The theory behind CCAMLR's action is to ensure that only authorised toothfish catches can be landed, and therefore unauthorised fishing will cease as a consequence. In practice, this faces the same practical difficulties as suppressing flags of convenience. There is no incentive for a non-CCAMLR State party to close its ports to vessels shipping patagonian toothfish, as to do so would deprive it of the revenue from such trade, without any consequent benefit. Even if Mauritius were to bend to the pressure from various quarters to close Port Louis to vessels landing toothfish, there would be little preventing the unauthorised fishing fleet to switch to other ports in Africa or even further afield. The range of a typical Southern Ocean trawler makes it possible for the vessel to be based

²⁸⁵ See CCAMLR, *Report of the Sixteenth Meeting of the Commission*, 27 October - 7 November 1997, p.6

²⁸⁶ See ISOFISH press release, 15 March 1999: <<http://www.isofish.org.au/news/index.htm>>

²⁸⁷ See Australian Broadcasting Commission news report, 18 March 1999: <<http://www.abc.net.au/news/state/tas/archive/mettas-18mar1999-3.htm>>

thousands of miles from the fishing grounds. This leaves the range of possible ports open an impossibly large number to make port State control a viable option to stem the tide.

CCAMLR's third response was to endorse the actions of the various coastal States in the CCAMLR area in domestic enforcement. Most of the areas where toothfish is taken are within the EEZs of the various sub-Antarctic islands, and consequently, the relevant coastal States can take unilateral action against unauthorised fishing. Enforcement efforts of this type have been taken by Britain, France, South Africa and Australia.²⁸⁸ However the difficulties of enforcement in waters that are extremely remote, and are plagued with huge seas on a regular basis indicate the limits which the physical world place upon the law. Although the Law of the Sea Convention gives Southern Ocean States the authority in international law to arrest vessels fishing illegally in their EEZs, merely having the right to make an arrest belies the difficulty of actually doing so. In waters that cannot be regularly patrolled, or where the costs of surveillance are high, the ability of States to react to uphold their sovereign rights may be limited, hence undermining the whole management regime.

In 1997, CCAMLR sought to institutionalise its efforts at port State control and Article X influence of States with Conservation Measure 118/XVI. The measure

²⁸⁸ For example see Bateman & Rothwell, *supra* note 170, p.131

was retained and updated as Conservation Measure 118/VII in 1998. It creates a presumption that all non-CCAMLR flagged vessels fishing in the Convention Area are undermining the effectiveness of the regime.²⁸⁹ Any CCAMLR flagged vessel is obliged to notify the CCAMLR Secretariat of the other vessel's location immediately and the Secretariat in turn will notify all the contracting parties within one business day, and to the flag State as soon as possible.²⁹⁰ In addition the CCAMLR vessel must attempt to notify the other vessel that it has passed its location on to the Secretariat, and the vessel's activities are undermining CCAMLR. Conservation Measure 118/XVII continues by requiring port States to investigate arriving fishing vessels that have been the subject of reports. No fish can be landed from such vessels unless it can be determined that the catch originated outside the CCAMLR area, or was caught in a manner consistent with CCAMLR conservation measures.²⁹¹ While improving the intelligence available to CCAMLR on unauthorised fishing, the measure does not do more than build upon existing approaches to combat the problem.

What is apparent, is that CCAMLR is unable to take effective action against fishing vessels flagged in non-CCAMLR States, and that these vessels are taking a large portion of the patagonian toothfish catch. Leaving aside the economic ramifications

²⁸⁹ Conservation Measure 118/XVII(1)

²⁹⁰ Conservation Measure 118/XVII(2)

²⁹¹ Conservation Measure 118/XVII(4) and (5)

of the destruction of a managed fishery for CCAMLR parties, such a situation bodes ill for the management of the Southern Ocean as an ecosystem. Scientists prior to the toothfish crisis were questioning the ability of CCAMLR to construct the vast data-set necessary to give meaningful information on the complete inter-species interactions taking place in the Southern Ocean ecosystem. CCAMLR has moved to address this, and its efforts at ecosystem monitoring and modelling are impressive. Yet all of this must be called into question when CCAMLR does not even have access to the data arising out of the unauthorised fishing, which of itself must create untold difficulties in using an ecosystem approach. Rather the efforts of these fishing fleets must, simply through the estimated scale of activities, be exerting a substantial influence on the structure of the Southern Ocean ecosystem. The removal of a species of finfish must have consequential effects on the rest of the ecosystem, and this makes CCAMLR's efforts at management more difficult than they would otherwise be.

CHAPTER SIX

COMPARISONS AND CONCLUSIONS

Introduction

In the opening chapter of this work, a number of bases of comparison were outlined against which the maximum yield and precautionary management systems were assessed. In the first part of this concluding chapter, those bases of comparison will be revisited¹, and the relative merits of the two approaches operating in the regimes in Chapters 4 and 5 examined. Findings in relation to the specific regimes will also, where possible, be extrapolated to determine whether differences between the regimes are applicable to other agreements where similar management approaches might be used, or whether any observed differences arose out of particular circumstances.

The second part of the chapter will consider the issue of compliance, which is fundamental to any management system, regardless of the principles embodied within it. Obviously, in comparing two marine living resource management systems, it is necessary to ensure that law has not exceeded the reach of what may

¹ The bases of comparison are: State satisfaction as evidenced in international relations; stakeholder satisfaction from the perspective of exploitation; and stakeholder satisfaction from the perspective of environmental protection.

be done to enforce it. If a State or international organization has no ability or capacity to ensure that its management of a fishery is complied with, then the merits of the principles underpinning that management are irrelevant. Compliance, from both a legal and a practical perspective, is therefore extremely important.

However, effectiveness and compliance, while related, are conceptually distinct.² A regime which has poor compliance is unlikely to be effective, but it does not follow that a regime which everyone complies with will necessarily be effective in functioning as it was intended. Thus, the comparison of the two management approaches is considered separately from the issue of compliance with international fisheries management regimes. Since the two concepts are so closely related, it is appropriate that they be discussed within the confines of the same chapter, to provide an overall assessment of merits of contemporary approaches to fisheries regulation.

Bases of Comparison

As was discussed in Chapter 1, there are a number of bases of comparison upon which the relative effectiveness of the different management systems can be assessed. These are: State satisfaction as evidenced in international relations,

² This point is made by Mitchell: R.B. Mitchell, "Compliance Theory: An Overview" in J. Cameron, J. Werksman and P. Roderick (eds), *Improving Compliance with International Environmental Law*, (London: Earthscan Publications, 1996) p.3 at pp.24-26

considered in the context of regime theory and epistemic communities; stakeholder satisfaction from the perspective of exploitation; and, stakeholder satisfaction from the perspective of environmental protection. Each basis is considered below.

State Satisfaction - International Relations

Regime Theory

A common feature of both the Doughnut Hole Convention³ and CCAMLR⁴ was their negotiation out of a perceived or actual threat to a marine living resource: in the former case, pollock; in the latter case, krill. This is consistent with a regime theory analysis. As noted in Chapter 1, regime theory requires external events to generate a need for States to undertake the negotiation of a new regime, out of a perceived inadequacy of any unilateral response to the events.⁵ However, there is consensus by theorists that an issue area must emerge between States. From this point, States may choose to act cooperatively, or establish systems of rules to circumscribe their actions, in order to address the issue area more effectively. This can only take place where the States concerned are of the view their participation

³ *Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, done at Washington on 16 June 1994, entered into force 8 December 1995: reprinted in 34 ILM 67 (1995) [hereafter cited as the Doughnut Hole Convention]

⁴ *Convention for the Conservation of Antarctic Marine Living Resources*, done at Canberra 20 May 1980, entered into force 7 April 1981: UKTS No.48 (1982) [hereafter referred to as CCAMLR]

⁵ This describes only the essence of the process, which is necessarily more complex.

would be more beneficial than choosing not to do so.⁶ In essence, the States undertake a form of cost/benefit analysis, where the diminution of State sovereignty and independence of action are weighed against the advantages of cooperative action, and the likely problems arising out of the failure of the regime, or the State's absence from an existing regime.⁷

This cost/benefit analysis was evident with CCAMLR, where the ATCPs chose to react collectively to the threat to the krill stock, and their own position in controlling events in the Antarctic.⁸ Although large scale fishing took place in the Southern Ocean in the 1970s, and the ATCPs had previously negotiated the Convention for the Conservation of Antarctic Seals, until events served to threaten intervention in living resource management from outside the Antarctic Treaty System, there were no moves to negotiate any general living resource regime.⁹

The elements of regime theory were particularly evident in the negotiation of the

⁶ Often State participation was explained through the identification of a hegemon, although as noted in Chapter 1, the presence of a hegemonic State is not necessary to a regime analysis: see Chapter 1 at p.23

⁷ The application of regime theory to the polar regions is not novel. Rothwell has incorporated an analysis of the application of regime theory to the Arctic and the Antarctic from the perspective of international law: Rothwell, *supra* note 24, pp.405-426. As already noted in Chapter 1, Young has made extensive use of regime theory in the context of the Arctic: see Chapter 1 at p.25; see also O.R. Young, *Creating Regimes: Arctic Accords and International Governance*, (Ithaca: Cornell University Press, 1998)

⁸ See Chapter 5 at p.387

⁹ See Chapter 5 at p.385

Doughnut Hole Convention, where DWFN cooperation in the negotiations was not substantive until the pollock stock in the high seas portion of the Bering Sea had collapsed. Applying a regime analysis, the DWFNs perceived no benefit in cooperation with the coastal States initially, as their vessels were able to harvest as much pollock as they could catch, and the adoption of an agreement to regulate the fishery would have prevented that situation from continuing. Once the stock was in the advanced stages of collapse, the long term preservation of the stock became more important than short term catch, and the negotiation of a regime was advisable.¹⁰

Regime theory can also be applied to indicate why CCAMLR and the Doughnut Hole utilised two different approaches to management. In the case of the former, the actuating crisis that gave rise to the negotiations was not solely commercial in character. While there was potentially a threat to the krill stock, fishing for krill had not reached levels which were likely to be in any way threatening to it.¹¹ The greater concern was the potential for non-ATCP participation in an explosion in the krill catch, which would create the dual problem of undermining the dominant influence of the ATCPs, while at the same time ensuring the stock would not be overfished. As such, the objective was to put in place a stable regulatory structure, well before the krill stock, and other species, were threatened with collapse. The

¹⁰ See Chapter 4 at p.346

¹¹ See Chapter 5 at p.442

fact the negotiations were closely linked to the scientific-oriented ATCP meeting¹², and in the absence of any existing large commercial interest to drive State policies during negotiation, the regime that ultimately formed did not reflect commercial interests. Rather than adopt the maximisation of yield, the concerns were wider, and based on the need for greater research to ensure stability of the ecosystem.

In contrast, the factors that gave rise to the crisis in the Bering Sea were essentially commercial in character. The coastal States, having largely expelled DWFNs from their EEZs, were concerned that the doughnut hole was being used for "pirate fishing" of their EEZs, and that overfishing in the high seas would detrimentally impact their own stocks.¹³ The DWFNs were concerned over the loss of the commercial fishery in the doughnut hole, and were seeking a regime designed to facilitate its recovery.¹⁴ Accordingly, management is directed to fulfil these ends, and the maximisation of pollock yield is the stated goal.¹⁵

Applying regime theory to the two conventions in their current form suggests that they are likely to continue for the foreseeable future. Once formed, regimes tend to persist, even if the State parties find the regime does not entirely meet their

¹² This is discussed below in the context of epistemic communities at p.476

¹³ See Chapter 4 at p.359

¹⁴ See Chapter 4 at p.346

¹⁵ Article II(2), Doughnut Hole Convention

expectations. This was demonstrated in the early years of CCAMLR when the Convention did not function as intended and States frustrated attempts to make conservation measures, particularly dealing with krill.¹⁶ Although for its first five years CCAMLR's record was poor, the States parties maintained their commitment to it, and in the early 1990s the regime flourished.¹⁷ Given the increased importance of regional marine living resource agreements under the Straddling and Highly Migratory Fish Stocks Agreement¹⁸, and the fact that no previous regional arrangement has been disbanded without being replaced by a new regime¹⁹, it would seem probable the two instruments will continue for some time to come.

However there is no guarantee that the content of the arrangements will not vary to cope with existing problems. It is clear there is rising dissatisfaction among the

¹⁶ See Chapter 5 at p.422

¹⁷ See Chapter 5 at p.440

¹⁸ See Chapter 3 at p.265

¹⁹ For example, the International Commission for Northwest Atlantic Fisheries (ICNAF): *International Convention for the Northwest Atlantic Fisheries*, done at Washington on 8 February 1949, entered into force on 3 July 1950: 157 UNTS 158; was replaced by the Northwest Atlantic Fisheries Organization (NAFO): *Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries*, done at Ottawa on 24 October 1978, entered into force 1 January 1979: OJ 1978, L 378. *International Convention between the United States of America, Canada and Japan for the High Seas Fisheries of the North Pacific Ocean*, done at Tokyo 9 May 1952, entered into force 12 June 1953: 205 UNTS 65; was replaced by the *Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean*, done at Moscow on 11 February 1992, entered into force 16 February 1993: reprinted <<http://www.npafc.org/convention.html>>.

DWFNs with the terms of the Doughnut Hole Convention²⁰, and to maintain the adherence of all the States previously active in that fishery, it may be necessary to permit harvesting to recommence at a lower level than originally anticipated.

Epistemic Communities

Although the introduction of economics in the 1950s revolutionised fisheries management theory²¹, it is clear that fisheries science still has a major role to play in the implementation of both the maximum yield approach or the precautionary approach to the management of a fish stock. Sound scientific advice is indispensable to administrators regardless of where they are operating, or the principles under which management is intended to take place, although it is clear that a management system incorporating an ecosystem approach will require greater scientific resources than other systems. The importance of science raises the questions as to the extent to which fisheries scientists function as an epistemic community, and if such a community exists, as to the extent to which it has influenced the content and operation of fisheries regimes?

In the case of CCAMLR, it is possible to establish the existence of an epistemic community. CCAMLR was derived out of the Antarctic Treaty System, which itself functions as an epistemic community. The Antarctic Treaty was established to

²⁰ See Chapter 4 at p.372

²¹ See Chapter 2 at p.64

ensure a continuation of the goodwill and research cooperation developed between scientists during the International Geophysical Year (IGY). For the last forty years, virtually the entire, if transient, population of Antarctica has consisted of scientific personnel and their support staff. Regular visits between stations, together with research collaboration, and regular scientific conferences have engendered strong links among Antarctic researchers. Exchanges of personnel are common, and the coordination of research means that to save capacity States share results, necessitating regular contact between the different research teams. The Treaty itself requires international scientific cooperation in terms of personnel and data exchanges²², and gives the scientific staff of bases special status, by exempting them from the application of the laws of other States.²³

The cooperation and legendary goodwill between Antarctic researchers has translated to influence within the ATS in a number of ways. It is evidenced by the strength and influence of the Scientific Committee on Antarctic Research (SCAR). Although an international committee consisting entirely of Antarctic scientists, SCAR

²² Article III(1), Antarctic Treaty

²³ Article VIII, Antarctic Treaty. Quilty notes that if anything, the ATS requirements for the exchange of data are *too* generous, and as such are imposing substantial costs on the ATCPs: P.G. Quilty, "The Sharing of Scientific Knowledge in Regime Management" in R.A. Herr, *Antarctica Offshore: A Cacophony of Regimes?*, (Hobart: Antarctic CRC, 1995) p.79 at pp.80-83. Quilty also notes that the levels of scientist participation in national delegations at Antarctic Treaty Consultative Party meetings since 1985 have declined: *Ibid.*, p.82

has been at the centre of the provision of advice to the Antarctic Treaty Consultative Parties (ATCPs) for decades, functioning as the Antarctic Treaty System's informal science committee.²⁴ Similarly, it can be anticipated that the introduction of environmental impact assessment to all activities taking place in the Antarctic under the Madrid Protocol will only increase the influence of scientists.²⁵

Scientists also play a significant role in the administration of national Antarctic programmes. This can be seen in the qualifications and backgrounds of the individuals who attend CCAMLR on behalf of national delegations. Restricting consideration to those attending as representatives or alternate representatives, only three of twenty-three delegations attending as full Commission members at the 1996 meeting did not have a representative of a scientific institute, or individual with a background in Antarctic science as a participant. In contrast, only eight individuals representing industry groups attended the 1996 meeting in any capacity, with half of these being attached to the Japanese delegation. As such, industry was out

²⁴ Rothwell describes SCAR as having operated as "the *de facto* science secretariat under the [Antarctic] Treaty": D.R. Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press, 1996) pp.74-75; see also J.A. Heap, "The Role of Scientific Advice for the Decision-Making Process in the Antarctic Treaty System" in R. Wolfrum (ed.), *Antarctic Challenge III: Conflicting Interests, Cooperation, Environmental Protection, Economic Development*, (Berlin: Dunker & Humblot, 1988) p.21 at pp.21-23

²⁵ Quilty questions whether research science may ultimately become a servant of the EIA process: Quilty, *supra* note 23, pp.82

represented by science by a factor of at least ten.²⁶

Similarly, the depolitization of CCAMLR meetings, and the accompanying increase in cooperation are indicators of the influence of science. The explosion in conservation measures, that are in substance largely drafted by consensus in the CCAMLR Scientific Committee, show that the cooperative effort has translated to greater influence for a body that is made up of Antarctic scientists, whose task it is to provide scientific advice.²⁷

The contrast between CCAMLR and the Doughnut Hole Convention is striking. While scientists did lead calls for an international conference on the level of high seas fishing in the Bering Sea, it is clear that the process was driven by the fishing interests in the various States. This is underscored by the fact there was little progress in negotiations until the stock in the doughnut hole had effectively collapsed in 1994. At this point in time, the fishing interests in the DWFNs were prepared to accept a moratorium on fishing and ultimately the Doughnut Hole Convention.²⁸ Similarly, although only five States participated in the 1998 meeting, compared to 23 with full rights of participation under CCAMLR, there

²⁶ CCAMLR, *Report of the Fifteenth Meeting of the Commission*, 21 October - 1 November 1996, pp.93-103

²⁷ Some of the fears expressed by Heap dealing with the provision of scientific advice under CCAMLR have not been realised, in the more cooperative contemporary environment: Heap, *supra* note 24, pp.24-26

²⁸ See Chapter 4 at p.346

were 14 industry representatives on delegations, compared to 12 with attachments to science on the same criteria as used above for CCAMLR delegates.²⁹

The existence of an epistemic community of scientists has a number of consequences. Firstly, it has meant that Antarctic scientists have largely dominated as a source of advice for policy formulation with regard to the Southern Ocean for the States active there. The relatively small scale of the fisheries in the Southern Ocean has meant that this dominance has never been seriously challenged by fishery interests. As such, it allowed for CCAMLR to adopt a precautionary/ecosystem approach to management over a decade before such an approach was palatable elsewhere.³⁰ The wisdom of preserving an ecology in the same form it exists in nature is consistent with a research-orientated mindset, whereas it is not necessarily consistent with a mindset fixed upon the maximisation of profit.

Secondly, it has made cooperation between CCAMLR and environmental NGOs far easier. CCAMLR's focus on the ecosystem, and the strong participation within it

²⁹ *Report of the Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Tokyo, 30 November - 4 December 1998, Appendix 7

³⁰ Note that SCAR had coordinated the commencement of the BIOMASS programme prior to the commencement of the CCAMLR negotiations: W. Bush, *Antarctica and International Law*, (London: Oceana, 1982) Vol.1, p.348 and p.512; see also D. Vignes, "Protection of the Antarctic Marine Flora and Fauna: The Canberra Convention of 20 May 1980 and the Commission set up by it" in F. Francioni and T. Scovazzi (eds), *International Law for Antarctica*, (The Hague: Kluwer Law, 1996) p.159

by scientists have meant that ideologically it is far closer to the views of most environmental NGOs than any other international marine living resource organization. Such NGOs are typically opponents of large scale fishing interests, and the absence of influence in CCAMLR of such interests, as well as many scientists being sympathetically disposed to the NGOs, has made for an active collaboration between ASOC and CCAMLR. The nature of this collaboration is explored below.

Stakeholder Satisfaction - Exploitation

Both CCAMLR and the Doughnut Hole Convention are responsible for stocks of commercial significance: the patagonian toothfish and Alaskan pollock respectively. Both stocks are under great pressure, in case of the former, or have collapsed, in the case of the latter. Both deal with fisheries which are relatively remote, and which require a significant investment in vessels to be exploited. Consequently, stakeholder satisfaction rests upon stable and long term access to stocks, and the minimisation of unauthorised fishing. In the case of the former, this is to ensure that the capital and other substantial costs incurred can be recouped and the risk diminished, while the latter serves to ensure the stock is managed effectively, and the price for the fish is maintained, not being reduced by additional quantities dropped onto the market by competitors with necessarily lower costs.³¹

³¹ Unauthorised fishing can generally be undertaken at lower cost, as there is not the necessity for the vessel to comply with, and therefore pay for, a variety of conservation and observation measures. The substantial costs

There are two viewpoints on the efficacy of the Doughnut Hole Convention from the point of view of exploitation. The coastal States, the United States and Russia, are apparently satisfied with the regime, as their catches, while somewhat reduced, have not ceased, and the potential damage being done to the stock by untrammelled harvesting in the Doughnut Hole has ended.³² In contrast, there is increasing dissatisfaction with the regime in the DWFNs. DWFN fishing vessels have lost access to the Doughnut Hole through the Convention, ostensibly to allow the stock to recover, yet the biomass calculated to be present in the central Bering Sea has fluctuated considerably without ever approaching the level to permit harvesting. These States are increasingly seeing the potential benefit of leaving the stock alone to rebuild as illusory, and their dissatisfaction with the method of calculating the annual harvest level is growing.³³

In contrast, although there has been some grumbling over CCAMLR's approach to management, States are generally satisfied with its management. There has been some expressed concern that CCAMLR has "lacked teeth" from its slow adoption of compulsory vessel monitoring systems, and from its retention of "Olympic

involved in Southern Ocean fishing are considered in Chapter 5 at p.453

³² See Chapter 4 at p.372

³³ See Chapter 4 at p.372

fisheries"³⁴ rather than national allocations.³⁵ However, CCAMLR has, albeit slowly, responded to these concerns, and while its consensus decision-making system has hampered its ability to respond, initial disquiet at the high standards of reporting and data collection, and the costs of maintaining observers has reduced over time.³⁶ In part this may be a factor of the change in participation in the fisheries. Since the fisheries currently exploited are capital intensive, the large operators are better able to absorb the costs of high levels of reporting. Those who were unwilling to comply have either left the fisheries altogether, or have left the CCAMLR system by reflagging their vessels. The greatest degree of dissatisfaction directed at CCAMLR has been its relative impotence in dealing with the rise of third State fishing in the CCAMLR Area. CCAMLR has been shown to be hopelessly inadequate in addressing this issue, and the only effective measures to curb the unauthorised fishing have come from coastal States exercising their jurisdiction based on their EEZ rather than anything to do directly with CCAMLR. This issue of compliance with CCAMLR, and other fisheries bodies is considered below.³⁷

³⁴ Setting a competitive total allowable catch (TAC) means that fishing vessels "race" to catch as much fish as possible before the TAC is reached, and fishing must cease - hence the use of the term "Olympic".

³⁵ See T. Stone, "Fishing in the Freezer: Challenges for Fisheries Managers in Australia's Sub-Antarctic Fisheries" in S. Bateman and D.R. Rothwell, *Southern Ocean Fishing: Policy Challenges for Australia*, (Wollongong: Centre for Maritime Policy, 1998) p.89 at pp.97-101

³⁶ See Chapter 5 at p.453

³⁷ See below at p.494

Certainly before the crisis, stakeholder satisfaction concerning exploitation within CCAMLR was generally strong. Those stocks harvested, particularly krill, appear to have been well managed, and there was good cooperation between the State parties.³⁸ In contrast, while the Doughnut Hole Convention has not broken down, there is increasing evidence of disquiet from the DWFNs as to the existing mechanisms for determining catch, and there has yet to be a recommencement of fishing in the Doughnut Hole.³⁹

Stakeholder Satisfaction - Environmental Protection

NGOs

The emergence of NGOs since World War II has presented some difficulties for classical international lawyers. Traditionally, States were the only actors with a formal role within the international system, as international law was essentially the legal relationships that existed between States interacting within the international community.⁴⁰ As such, traditional international law structures were not comfortable with intergovernmental organizations, such as the United Nations or its agencies, or State-based organizations such as the European Union, and special provisions to deal with these entities are often incorporated into treaties and

³⁸ See Chapter 5 at p.440

³⁹ See Chapter 4 at p.373

⁴⁰ For example see the discussion by Shearer: I.A. Shearer, *Starke's International Law*, (London: Butterworths, 1994) pp.51-62

conventions.⁴¹ Individuals typically had no status in international law, beyond the right of a State to act on behalf of its nationals in its dealings with other States.⁴² NGOs, being mere informal associations of individuals, without necessarily possessing any connection to a particular State, effectively did not exist within international law.

Lacking an existence in international law has not prevented a proliferation in the number and range of NGOs around the world, particularly in the western democracies.⁴³ In a number of fields, including environmental protection and marine species conservation, NGOs have become increasingly prominent. In some cases, the activities of these bodies have extended beyond the dissemination of data

⁴¹ This is evident in both the Doughnut Hole Convention and CCAMLR. In the case of the former, the parties were unable to reach agreement of a request by the EU to attend an annual meeting as an observer, in part because the provision for observers under Article XII dealt with States, not supra-national organizations: *Report of the Second Annual Conference of the Parties to the Convention on Conservation and Management of Pollock Resources in the Central Bering Sea*, Seattle, 5 - 7 November 1997, para. 6.J.4. In the case of the latter, Article XXIX(2) of CCAMLR was included to allow "regional economic integration organizations" made up of States to become members of the Commission. Only the EU has chosen to do so to date.

⁴² Over time, particularly in the field of international human rights law, this rule has been eroded, but to a large extent still exists: for example see Shearer, *supra* note 40, pp.54-62

⁴³ See generally T.A. Winings, *A Quantitative Description and Partial Explanation of Growth and Development Trends for International Intergovernmental and Nongovernmental Organizations*, (Ann Arbor: UMI, 1984); M.T. Schweitz, "Indigenous Environmental NGOs and International Law: A Reconstruction of Roles and Possibilities" (1993) 27 *University of British Columbia Law Review* p.133 at pp.133-144

and purely domestic events, to the chartering of ships, and pursuing vessels fishing contrary to their views of the environmentally sound practice.⁴⁴

The level of participation of NGOs within the management system of an international regime can vary from quite substantial to absolutely nothing. The Doughnut Hole Convention and CCAMLR are excellent examples of two quite different approaches to NGO participation. Under the Doughnut Hole Convention, NGOs have no role whatsoever. Participation in the annual meetings is limited to the State parties, and observers representing other States can only be invited with the consent of all the State parties.⁴⁵ The State parties have shown themselves reluctant to seek the participation of observers.

In contrast, CCAMLR has embraced NGO participation to a level unknown in other instruments. An umbrella NGO, the Antarctic and Southern Ocean Coalition (ASOC) has been accorded observer status at CCAMLR Commission meetings since an invitation was extended to it in 1988.⁴⁶ ASOC itself is a coalition of some 240

⁴⁴ For example, in 1998/99 Greenpeace employed the vessel *Arctic Sunrise* to shadow and observe vessels fishing in the Southern Ocean: see Greenpeace press release, "Pirate Fishing Vessel Revealed: Belize-Registered *Salvora* is a Repeat Offender", 5 March 1999: <<http://www.greenpeace.org.au/Releases/1999/march/05mar99.htm>>

⁴⁵ See Chapter 4 at p.353

⁴⁶ CCAMLR, *Report of the Seventh Meeting of the Commission*, 24 October - 4 November 1988, p.41

separate NGOs with interests in the Antarctic⁴⁷, thereby ensuring that all the groups that have some legitimate concern in the subject of the meetings can get representation, albeit through a representative body.⁴⁸ ASOC participation is contingent upon the organization not disclosing confidential information discussed at CCAMLR meetings, but this does not appear to have hampered ASOC.⁴⁹

Informal representation of NGOs can also occur through their inclusion in national delegations, thereby removing the obstacle of the lack of international status for the NGO. Again CCAMLR and the Doughnut Hole provide examples of the differing viewpoints. In the case of CCAMLR, a number of the larger western delegations have regularly included members drawn explicitly from NGOs.⁵⁰ In contrast, NGO representation on delegations to Doughnut Hole meetings has been non-existent, with most delegations consisting entirely of officials and scientific advisers, together with some representation from their domestic fishing organizations.⁵¹

⁴⁷ The 240 NGOs are based in 50 States. A list of the constituent members of ASOC is reproduced at <<http://dtc.net/~rick/TAP/members.htm>>

⁴⁸ See Chapter 5 at p.399

⁴⁹ CCAMLR, *Report of the Seventh Meeting of the Commission*, 24 October - 4 November 1988, p.41

⁵⁰ For example in 1986, the United States, Britain and Australia included representatives of NGOs within their delegations: CCAMLR, *Report of the Fifteenth Meeting of the Commission*, 21 October - 1 November 1996, Annex 1

⁵¹ *Report of the Third Annual Conference of the Parties to the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, Tokyo, 30 November - 4 December 1998, Appendix 7

CCAMLR goes even further in terms of informal involvement of NGOs. To assist in the placing of pressure on States to curb the unauthorised patagonian toothfish catch, some States have actively collaborated with NGOs. For example, Australia pledged A\$40000 to supplement industry contributions to establish the International Southern Oceans Fisheries Information Clearing House (ISOFISH).⁵² ISOFISH has used these funds to commission reports into the activities of vessels fishing illegally in the Southern Ocean using Mauritius as a point of trans-shipment⁵³, and into the activities of Norwegian and Chilean companies attempting to avoid CCAMLR regulation.⁵⁴ ISOFISH has strong links to other environmental NGOs, notably Greenpeace, and the data gathered from the report has been used as part of a campaign to directly pressure the Mauritian government to close Port Louis to

⁵² ISOFISH was established in late 1997 with funding of A\$50,000 from an Australian fishing company active in the Southern Ocean. Since that time, nine fishing and fish trading companies in five States have pledged financial support: see ISOFISH press release at <<http://www.isofish.org/news/98/mr.18jun98.govtsupport.htm>>

⁵³ ISOFISH, *The Involvement of Mauritius in the Trade in Patagonian Toothfish from Illegal and Unregulated Longline Fishing in the Southern Ocean and What Might Be Done About It*, (Hobart: International Southern Oceans Longline Fisheries Information Clearing House, 1998) <<http://www.asoc.org/currentpres/mauritius.htm>> [hereafter cited as ISOFISH1]

⁵⁴ ISOFISH, *The Vikings: The Involvement of Norwegian Fishermen in Illegal and Unregulated Longline Fishing for Patagonian Toothfish in the Southern Ocean*, (Hobart: International Southern Oceans Longline Fisheries Information Clearing House, 1998): <http://www.isofish.org.au/news/98/Isofish_Norway_full.zip> [hereafter cited as ISOFISH2]; ISOFISH, *The Chilean Fishing Industry: Its Involvement in and Connections to the Illegal, Unreported and Unregulated Exploitation of Patagonian Toothfish in the Southern Ocean*, (Hobart: International Southern Oceans Longline Fisheries Information Clearing House, 1998): <<http://www.isofish.org.au/news/99/ChileReport/ChileReport.htm>> [hereafter cited as ISOFISH3]

unauthorised toothfish vessels.⁵⁵

A fundamental difference clearly exists in attitude over the participation of NGOs between the Doughnut Hole Convention and CCAMLR, but it is unlikely that this difference can be entirely attributed to the different management styles embodied in the two conventions. The State parties to the Doughnut Hole Convention include China, the only State not also a party to CCAMLR. The Chinese Government does not generally encourage NGOs, and its presence in one regime and not the other could be a factor in NGO participation. In addition, there is no suggestion that NGOs have a formal role in the decision-making in CCAMLR, and while they have observer status, this only entitles them to participation in plenary sessions. As such, although NGOs are present, their role is not necessarily as significant as may first appear.

However, it is more likely that NGO participation will accompany a precautionary/ecosystem-management based convention than one operating under the older maximum yield system. This is because environmental NGOs have long supported the adoption of precaution. NGOs participated heavily at UNCED, and generally are far more supportive of a convention like CCAMLR than a more

⁵⁵ For example ISOFISH press releases concerning Southern Ocean fishing have been based on reports from the Greenpeace vessel *Arctic Sunrise*: see Greenpeace press release, "Pirate Fishing Vessel Revealed: Belize-Registered *Salvora* is a Repeat Offender", 5 March 1999: <<http://www.greenpeace.org.au/Releases/1999/march/05mar99.htm>>

conservative approach to management, as embodied by the Doughnut Hole Convention. Participation by an NGO in a regime such as CCAMLR is likely to be far more positive, and far less critical, and may even extend to actively supporting pressure on outside bodies that might undermine the organization. In contrast, NGO observers at meetings of a convention such as the Doughnut Hole Convention are likely to be critical of the decisions made and hold the decisions made up to public ridicule if they are unhappy with the outcomes. States may be far more sympathetic to NGO collaboration if it criticises other States rather than their own actions, hence a precautionary approach may give rise to increased NGO participation.

Relative Merits of the Different Approaches

In Chapter 2, the observation was made that States had tended to focus on problems of jurisdiction in the context of fisheries rather than management. States have consistently attempted to resolve jurisdictional questions, usually by moving towards increasing the rights of coastal States, rather than expounding at greater length upon what principles management ought to be conducted upon.

That position has begun to change, as the international community has become increasingly accepting of precaution. To some extent, general principles of international law are gradually catching up with the approach embodied in CCAMLR. The change in policy by the FAO is a clear indicator that support for

the older maximum yield approach has diminished. In the last few years FAO has given its strong approbation to a precautionary approach to fisheries management, which as an organ of the United Nations, suggests broad-based international approval of the newer approach.

The precautionary approach clearly has a number of advantages over the maximum yield system. First, all things being equal, it lessens the possibility of collapse of a stock, simply because the level of fishing will usually be lower. The very nature of a precautionary system involves the implementation of risk management strategies, making the system far more responsive to potential threats. In contrast, a system based upon maximising yield is necessarily reactive to changes in the fishery rather than proactive. As such, if data in any given year proves inaccurate, or cannot be obtained, the threat of damage to the stock is a distinct possibility.

Second, precautionary management that implements an ecosystem approach will take the wider view of the health of the ecology, rather than just one element of it, or one part of it. The failure of a maximum yield fishery to do this is demonstrated by the Doughnut Hole Convention. In spite of no commercial fishing in the doughnut hole for over five years, the size of the pollock stock there appears to fluctuate, and has not rebuilt itself. Given the Convention can only deal with ten percent of the area of the Bering Sea, it is difficult to see how it can effectively oversee the recovery of the stock, as events outside the Convention's area of

operation must have some impact, and likely a significant impact. In contrast, although CCAMLR does have areas subject to national jurisdiction, the Chairman's Statement and agreement from the coastal States to ensure conservation measures at least as strong as CCAMLR for those areas means that the efficacy of management is not damaged.

It would be wrong to suggest that there are not problems in using a precautionary approach. A significant concern is bridging the gap between science and law, to give an objective meaning to terms such as "precautionary approach" and "ecosystem management". As noted in Chapter 3, exactly how cautious decision-makers ought to be in assessing risk is rarely spelled out in conventions, and was the principal concern of States hostile to the implementation of precaution in the early 1990s. In this, CCAMLR is useful as its provisions set a standard of damage not reparable in two to three decades. Most agreements do not set such a standard, and providing guidance to scientific advisors as to exactly how precaution can be factored into their decisions is likely to prove difficult.⁵⁶ Similarly, the mechanics of implementing an ecosystem approach are yet to be seriously considered outside of CCAMLR, and within the difficulties inherent have kept the Commission occupied for most of the last two decades. Those who have blithely tossed the phrase "ecosystem approach" into international instruments would be wise to note the ongoing and substantial efforts CCAMLR has made to the present, and the

⁵⁶ See Chapter 3 at p.286

limited returns thus far for those efforts.

In the long term, the costs of an ecosystem approach also need to be considered. Obtaining data about non-commercial species is necessarily more expensive than commercial fish data, essentially because of the large proportion of research data that is derived direct from fishing vessels. Details concerning what these vessels caught, where and in what quantities, greatly assist in providing data on the abundance of a stock and the relative strength of a particular cohort. Since the collection of such data is essentially incidental to fishing, as well as being of some commercial utility, fishing vessel operators generally do not object to the slight costs involved. However, the collection of non-commercial species data, with the possible exception of data concerning by-catch, is of little commercial significance, and may involve resources being channelled away from commercial activities. Vessel operators are likely to attempt to avoid the collection of such data if possible, and resent the costs associated with it if not.

Similarly, the full implementation of an ecosystem model may prove either technically or economically impossible. A number of scientists have cast doubt on whether effective and accurate ecosystem models can be designed, and as noted above, CCAMLR has spent over a decade collecting data for modelling purposes, with some likelihood that decades more will have to be spent. Even if technically possible, there is the question as to whether an ecosystem model is economically

viable. The regular collection of data concerning all the species in an ecosystem, or at least the key indicator species, if these can be identified, may ultimately cost more than the profit that can be derived from the fishery, in which case the abandonment of the fishery is the likely result.

Compliance

Introduction

The effectiveness of any management system is predicated on ensuring that the measures implemented under the system are complied with. "Management" itself implies a degree of control over the environment, and such control can only be asserted over human impacts. If some or all of the participants in a fishery choose not to comply with conservation measures, then logically the efficacy of the measures must be diminished and, if the scale of non-compliance is sufficiently large, potentially destroyed. Further, non-compliance may mean that data sets obtained to assist managers to determine appropriate catch limits are not accurate, or incomplete, as recalcitrant vessels are unlikely to transmit data concerning their catch. Regardless of which principles of management are employed, basing decisions upon accurate information is fundamental, and therefore the question of compliance lies at the heart of fisheries management. This section will consider issues of compliance, and then propose how those issues might be addressed.

Before that can be done, some consideration of the definition of compliance is

necessary. According to Joyner, compliance is "the process of conforming to official requirements and reflects behaviour by an actor that demonstrates adaption to specific legal rules".⁵⁷ The rules with which the actor must comply can be national or international in character, although generally the application of the former category is directed towards individuals, and the latter at States.⁵⁸ Where international obligations are concerned, compliance will often take place both nationally and internationally to achieve the same end. For example, when a fishing vessel obeys a conservation measure devised by an international organisation, compliance is taking place on two levels. On an international level, the flag State of the vessel is meeting its treaty obligation to give the conservation measure legislative effect within its jurisdiction, while on the national level, the fishing vessel will have to act in accordance with the legislation passed.⁵⁹ Some publicists have sought to distinguish domestic and international compliance, recognising that where the former is used to implement the latter the two are part of

⁵⁷ C.C. Joyner, "Compliance and Enforcement in New International Fisheries Law" (1998) 12 *Temple International and Comparative Law Journal* p.271 at p.274; but cf. the challenge to such a definition posed by Kingsbury: B. Kingsbury, "The Concept of Compliance as a Function of Competing Conceptions of International Law" (1998) 19 *Michigan Journal of International Law* p.345

⁵⁸ See I.I. Lukashuk, "Control in Contemporary International Law" in W.E. Butler (ed.), *Control over Compliance with International Law*, (Dordrecht: Martinus Nijhoff, 1991) p.5 at pp.5-7

⁵⁹ This duality of compliance is most evident in States that have to legislate to give effect to international obligations, such as those adopting the British tradition that treaties have no direct legislative effect on the domestic law. The duality is less distinct, but still conceptually present in those States where treaties have direct legislative effect upon adoption.

the same process.⁶⁰ In this study, as the focus has been the content of international law, compliance will be considered from the international perspective. Domestic compliance designed to implement international obligations by necessity will be discussed, but only insofar as a State is acting in accordance with its rights and obligations in international law.

Discussion of compliance theory has also focussed on compliance with formal obligations expressed in treaties, rather than less distinct sources of international law.⁶¹ In this work, although not all of the applicable international law is encapsulated in binding treaties, it is clear that the bulk of the principles in issue are contained in international instruments which either crystallise custom or are *de lege ferenda*.⁶² Further, up to this point, discussion has been directed at the identification of management systems with which States, in certain circumstances, may be obliged to comply, so it is not proposed to embark upon a re-examination

⁶⁰ For example, Joyner refers to the domestic element as implementation of the international obligation: Joyner, *supra* note 57, p.275

⁶¹ Mitchell, *supra* note 2, p.5; A. Chayes and A.H. Chayes, "On Compliance" (1993) 47 *International Organization* p.175 at pp.175-176. Sands notes in the context of international environmental law seeking compliance with treaty norms has been used increasingly as a vehicle for bringing about change in international environmental practices: P. Sands, "Compliance with International Environmental Obligations: Existing International Legal Arrangements" in J. Cameron, J. Werksman and P. Roderick (eds), *Improving Compliance with International Environmental Law*, (London: Earthscan Publications, 1996) p.48 at pp.48-49

⁶² See discussion in Chapter 3 at p.279

of that material. Rather, this section will consider the avenues available in international law for States to ensure that management schemes, whether multilateral or based upon a unilateral exercise of jurisdiction, are complied with, and the responses to non-compliance which are permissible in international fisheries law.⁶³

International fisheries law permits compliance to be compelled in a number of situations: coastal State; flag State; non-flag State by agreement; port State; and jurisdiction based upon the nationality of owners and crew. Each of these situations needs to be considered separately, as each raises distinct issues, in terms of both legality and practicality. The chapter will conclude by posing solutions for the problems of compliance.

Coastal State

As considered in Chapter 2, the basis of coastal State control over fisheries management is the EEZ, which gives, *inter alia*, States sovereign rights over living marine resources. The range of measures in the management of fisheries in the EEZ open to States is wide, giving a large degree of freedom of action in the mechanisms which the State may employ. The principal issue of compliance with

⁶³ It should be noted that a State may choose to comply voluntarily with a management scheme, even when it is not obliged to do so. Such voluntary compliance is envisaged under the SS/HMS Agreement as part of a State's duty to cooperate upon its embarking on a new fishery: Article 11, SS/HMS Agreement; see discussion in Chapter 3 at p.267

coastal State management is therefore not primarily a question of law, but the practicality of coastal State management of the EEZ.

CCAMLR provides an excellent, if extreme, example of the practical difficulties in coastal State management. As noted in Chapter 5, there are a number of islands within the CCAMLR area which give rise to uncontested EEZ claims. The waters in the vicinity of these islands are extremely important in the ecology of the Southern Ocean, as they are the areas where a large proportion of the finfish species are concentrated. The recent crisis in the Southern Ocean concerning the patagonian toothfish illustrates this, as the stock is most common in the shallower waters around the various sub-Antarctic islands. Although CCAMLR itself has been unable to take any effective action against unauthorised fishing, Britain, South Africa, France and Australia have all arrested vessels fishing within their EEZs.⁶⁴ These arrests have been made pursuant to national legislation, which itself is valid in international law, by virtue of Article 73 of the Law of the Sea Convention.⁶⁵

⁶⁴ For example see S. Bateman and D.R. Rothwell, "Challenges and Prospects for Fishing in the Southern Ocean" in S. Bateman and D.R. Rothwell (eds), *Southern Ocean Fishing: Policy Challenges for Australia*, (Wollongong: Centre for Maritime Policy, 1998) p.133 at p.135; CCAMLR, *Report of the Sixteenth Meeting of the Commission*, 21 October - 1 November 1996, pp.138-139; CCAMLR, *Report of the Fifteenth Meeting of the Commission*, 24 October - 3 November 1996, pp.121-123

⁶⁵ Especially Article 73(1), Law of the Sea Convention, which provides:
The coastal State may, in the exercise of its sovereign rights to explore, exploit, conserve, and manage the living resources in the exclusive economic zone, take such measures, including boarding, inspection, arrest and judicial proceedings, as may be necessary to

Yet even with the clear support of international law, and the fact that the bulk of illegal fishing appears to be taking place inside the EEZ, the collapse of the stock is confidently predicted.⁶⁶

The reasons for this are twofold. Firstly, the Southern Ocean EEZs are remote, and it is extremely difficult in practice to effectively patrol these areas to ensure that vessels are fishing legally. For example, in the CCAMLR area Australia has an unchallenged claim to the sub-Antarctic Heard and McDonald Islands. These are some 2,350 nautical miles from the nearest Australian port, and experience weather conditions that make extended operations in them extremely difficult.⁶⁷ Aerial surveillance is difficult, as aircraft are operating at very long range, and in the poorest weather conditions. Enforcement actions to police the EEZ are costly exercises, requiring the deployment of a frigate and a fleet oiler.⁶⁸ To date only

ensure compliance with the laws and regulations adopted by it in conformity with this Convention.

⁶⁶ See Greenpeace, "Southern Ocean in Crisis", October 1998: <<http://www.greenpeace.org.au/Biodiversity/SOcrisis/index.htm>>

⁶⁷ Bateman and Grove note that Heard Island experiences winds above Force 8 or above over 30 percent of the time, and above Force 4 over 80 percent of the time in July, above force 8 between 10 and 20 percent, and above Force 4 over 60 percent of the time in January: S. Bateman & E. Grove, "Maritime Enforcement in the Southern Ocean: Some Operational and Policy Considerations" in S. Bateman and D.R. Rothwell, *Southern Ocean Fishing: Policy Challenges for Australia*, (Wollongong: Centre for Maritime Policy, 1998) p.115 at p.117

⁶⁸ The combined crews of the vessels concerned number in excess of 250 individuals.

two such operations have been mounted, resulting in the arrest of three vessels. In spite of these efforts, it is apparent that illegal fishing is continuing.

The second reason for continued illegal fishing in the EEZ around Heard Island is the Law of the Sea Convention limits the ability of States to institute penalties for offences that would operate to prevent the recurrence of illegal fishing. Article 73(2) of the Law of the Sea Convention provides a State must release a vessel and its crew on the posting of a reasonable bond. This means that even where national legislation might prescribe confiscation of a fishing vessel, the vessel must be released if a bond is posted, sufficient to cover the value of the vessel, and any additional penalties that might be imposed. In practice, this diminishes the effectiveness of confiscation, as it assumes that the monetary value of the vessel equates to its replacement value. Southern Ocean trawlers are specialised vessels, and replacing one is more difficult than being in possession of the funds reflecting its purchase price. For example in October 1997 the frigate *HMAS Anzac* apprehended the *Salvora* fishing off Heard Island. *Salvora's* owners subsequently posted a bond, and the vessel departed Australia. Since that time, in February and March 1999, *Salvora* has been observed by Greenpeace fishing illegally in French waters to the north of Heard Island. Confiscation of the vessel, without the option of a bonded release, would have made it more difficult for *Salvora's* owners to

obtain a replacement, and go back to fishing illegally in the same part of the world.⁶⁹

Similarly, Article 73(3) of the Law of the Sea Convention provides a coastal State cannot imprison the crew of vessels breaching fisheries regulations, in the absence of a special agreement between the coastal State and the flag State.⁷⁰ Since the potential fines imposed upon a ship's master are typically factored into the bond payable for the release of the ship and crew, the master can depart with the ship, and need not return to the jurisdiction.⁷¹ Further, whatever fines might be payable are ultimately covered by the master's employer, meaning there is no personal disincentive for a master to fish illegally.⁷²

⁶⁹ This is by no means an isolated example. In February 1998, *HMAS Newcastle* arrested the *Big Star* off Heard Island. *Big Star* had previously been arrested by the French Navy in January 1998, and subsequently released: Bateman & Rothwell, *supra* note 64, p.139

⁷⁰ Article 73(3), Law of the Sea Convention provides:
Coastal State penalties for violations of fisheries laws and regulations in the exclusive economic zone may not include imprisonment, in the absence of agreements to the contrary by the States concerned, or any other form of corporal punishment.

⁷¹ For example the captain and the fishing master of the *Alicia Glacial*, which was arrested fishing illegally in the Heard Island EEZ in October 1997, failed to appear in court to answer charges. They had left Australia, and had not subsequently returned: see ISOFISH2, *supra* note 54.

⁷² For example, of the bond posted for the release of *Salvora* after its apprehension for fishing illegally in Australian waters for patagonian toothfish, A\$100,000 of the bond represented the potential fine for the master of the vessel: see Greenpeace press release, "Pirate Fishing Vessel Revealed: Belize-Registered *Salvora* is a Repeat Offender", 5 March 1999: <<http://www.greenpeace.org.au/Releases/1999/march/05mar99.htm>>

The EEZ around Heard Island is an extreme example of a situation found elsewhere around the world: a limited physical capacity to enforce fisheries laws by coastal States. Although a developed State, with naval forces with a blue-water capability and aerial support, it is apparent Australia is hard pressed to police its EEZ effectively. The same is true of France and Britain, who have greater capacity to enforce their law, by virtue of having limited facility on or near their sub-Antarctic possessions. The EEZs in question are in excess of 100,000 square nautical miles, making surveillance by a single vessel or two problematic at best.

The problem of enforcement in the EEZ is not limited to the Southern Ocean. Many States have vast EEZs making their patrol a substantial logistical burden. In the South Pacific, and most of Africa, and parts of the Caribbean, coastal States have a rudimentary ability at best to mount an enforcement action offshore. Few coastal States have the capacity to patrol the entirety of their EEZ to ensure complete compliance with their fisheries law, and some States have virtually no capacity to do so. Even the United States, prior to the doughnut hole negotiations, was concerned that the high seas area in the Bering Sea was being used as a "base" for illegal fishing incursions into the US EEZ.⁷³ If the State with the greatest capacity for patrol and enforcement in the world can experience difficulties with illegal fishing, there are few States with significant littorals that cannot face similar

⁷³ See Chapter 4 at p.340

problems.⁷⁴ In gratefully receiving the benefits of extended jurisdiction, States were generally unconcerned with what requirements such an extension might impose upon them.⁷⁵

As it is easy to point to examples of coastal States unable to enforce their fisheries laws in their EEZs because of the practical constraints of doing so, it is difficult to see that the situation could be improved by the internationalisation of the EEZ, even in the extremely unlikely event States could be persuaded to relinquish their vast areas of maritime jurisdiction. States without the capacity to patrol a national EEZ would not suddenly acquire the capability to police international waters - if anything the reverse is true. It is submitted a State is far more likely to expend funds on a limited capability for its own benefit, than to promote compliance in international waters.

The most effective response to the problem of coastal State enforcement capacity is

⁷⁴ For example, Canada's response to enforcement in its vast ocean areas was the subject of a series of papers delivered at a workshop held in Halifax in 1998: see particularly F.W. Crickard and G.J. Herbert, "Ocean Strategy, Maritime Security and Enforcement: An Analytical Approach" in G.J. Herbert and F.W. Crickard (eds), *Canada's Three Oceans: Strategies for Maritime Enforcement*, (Halifax: Centre for Foreign Policy Studies, 1998) p.43; D. Knight, "A Strategy for Maritime Surveillance and Information Management" in *Ibid.*, p.69

⁷⁵ The problem of legal requirements over-reaching domestic capacity is by no means limited to the law of the sea, nor is it uncommon: see Chayes & Chayes, *supra* note 61, pp.193-195

increasing cooperation in enforcement between neighbouring States. Given such cooperation on the high seas is unusual, with the SS/HMS Agreement and the Doughnut Hole Convention being two of the more striking examples, obtaining it with respect to waters subject to national jurisdiction is a difficult task. That this is so is another reflection of the dominance of State sovereignty, and the reluctance of States to dilute their rights. Exceptions do exist, such as arrangements under the Torres Strait Treaty⁷⁶, and through the aggregation of fishing jurisdiction by the member States of the European Union.⁷⁷

Flag State

Regardless of their location, all vessels are subject to the law of their flag State. When a vessel is in the EEZ or territorial sea of another State, that State obtains limited jurisdiction with respect of its sovereign rights over marine living resources, but at no stage does the flag State ever lose its jurisdiction. On the high seas, where coastal State jurisdiction ceases to have application, only the flag State

⁷⁶ See Article 19, *Treaty between Australia and the Independent State of Papua New Guinea concerning the Maritime Boundaries in the Area between the Two Countries, including the Area Known as Torres Strait, and Related Matters*, done at Sydney on 18 December 1978, entered into force 15 February 1985: AustTS 1985 No.5. [hereafter cited as Torres Strait Treaty] See also S.B. Kaye, *The Torres Strait*, (The Hague: Martinus Nijhoff, 1997) pp.107-108

⁷⁷ The Common Fisheries Policy, in its various forms since 1970, has permitted access for fishing between the various member States. The Policy is presently administered by Directorate General 14, concerned with Fisheries: see <<http://europa.eu.int/comm/dg14/dg14.html>>

retains jurisdiction, except in exceptional circumstances. This places the entire burden of ensuring compliance with international conservation measures on the high seas upon flag States, many of whom lack the capacity to effectively enforce domestic law in their own EEZs.⁷⁸

The difficulties inherent in flag State enforcement have been recognised for some time. As considered in Chapter 3, the FAO has promoted its Compliance Agreement⁷⁹ in an effort to ensure that all vessels active on the high seas are licensed, and can be subjected to the actual authority of the flag State in an effective manner.⁸⁰ This is designed to minimise the use of flags of convenience in shipping vessels, as clearly the flag State must be able to exert some authority over the vessel.⁸¹ Essentially, the Compliance Agreement utilises the existing international structure of flag State enforcement on the high seas, but obliges the flag State to be able to take effective action against the vessel if it is to be licensed to fish on the high seas.⁸² This is a substantial advance on a State's discretion determining which vessels might fly its flag with little regard for the loose

⁷⁸ See Chapter 2 at p.164

⁷⁹ See Chapter 3 at p.232

⁸⁰ A provision of similar effect is also found in the SS/HMS Agreement: see Article 19, SS/HMS Agreement; see also Chapter 3 at p.272

⁸¹ Joyner, *supra* note 57, pp.285-286; see also Chapter 3 at p.272

⁸² See Joyner, *supra* note 57, pp.283-288; see Chapter 3 at p.236

connection test outlined in the Law of the Sea Convention.⁸³

In practice, the Compliance Agreement will need the vast majority of States as parties to produce an improvement in the present exploitation of high seas fisheries. If flag of convenience States choose not to become parties to the Compliance Agreement, then they can continue admitting vessels to their registries in the same fashion as present. Signing up to the Compliance Agreement would oblige those States to withdraw the registration of any fishing vessel they would be unable to effectively exercise responsibility over. Given that many flag of convenience States, such as Vanuatu, Belize and Liberia are unlikely to be ever visited by the vessels flying their flags, nor be the home of substantial assets owned by the vessel's owners, it is difficult to see that effective control is extended. This would encompass a very large proportion of their registries, destroying their status of a flag of convenience, and depriving them of the revenue derived from offering "open" registries. Without other inducements, no flag of convenience State would become a party to the Compliance Agreement.

⁸³ Article 91(1), Law of the Sea Convention provides:

Every State shall fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag. Ships have the nationality of the State whose flag they are entitled to fly. *There must exist a genuine link between the State and the ship.*

My emphasis.

See also C.J. Colombos, *The International Law of the Sea*, (London: Longman, 1972) pp.289-291

Non-Flag State

For fisheries not subject to national jurisdiction, as observed in Chapter 2, the Law of the Sea Convention largely restricts efforts at enforcement to flag States. This greatly hampers the efficacy of high seas living resource management systems, especially where the flag State concerned is unwilling, or unable, to ensure compliance with conservation measures in place.

The first way to attempt to tackle this problem is to attempt to use the duties of cooperation in the Law of the Sea Convention to oblige a flag State to join in a regional arrangement. As was noted in Chapter 2, these duties are not couched in such terms as to permit any meaningful action to be taken against an uncooperative State.⁸⁴ This was evident in the period before the conclusion of the Doughnut Hole Convention, where little progress was made in negotiations until the pollock stock had been destroyed.⁸⁵ However, the measures incorporated into the SS/HMS Agreement take a more proactive line, and under Article 17 oblige non-parties to regional arrangements to comply with the scope of conservation measures promulgated under such arrangements. These issues were discussed in some detail in Chapter 3, and it is unnecessary to canvas them again. However, it is worth reinforcing that unless and until the SS/HMS Agreement comes to represent custom or has been ratified by a large number of States, the Law of the Sea Convention

⁸⁴ See Chapter 2 at p.166

⁸⁵ See Chapter 4 at p.346

provisions will represent the only response sanctioned by international law. In addition, even if the State concerned ultimately becomes party to a regional arrangement for the high seas area in issue, there is no guarantee the flag State will be obliged to cooperate within the arrangement to the extent of permitting other States to enforce regional conservation measures on its behalf.

The second way around the problem is cooperative enforcement through a regional arrangement, which has also been considered elsewhere in this work. The SS/HMS Agreement recognises the value in concluding such schemes, although the language used is somewhat limited in scope.⁸⁶ The cooperative enforcement scheme in the Doughnut Hole Convention is somewhat more expansive than the provisions of the SS/HMS Agreement. The Doughnut Hole Convention scheme represents a more positive model of other agreements in the future, in that it was designed to address the problem of "absentee" flag States; that is, a flag State geographically remote from the fishery, and therefore unable to maintain a presence in the fishery.⁸⁷

Port State

Port State control was considered briefly in Chapter 5.⁸⁸ It reflects the traditional paradigm of the primacy of State sovereignty in the Law of the Sea. As the port of

⁸⁶ See Chapter 3 at p.272

⁸⁷ See Chapter 4 at p.367

⁸⁸ See Chapter 5 at p.465

any State may be part of the internal waters of that State⁸⁹, it follows that a foreign vessel is subject to the law of State concerned. The application of the port State's domestic law applies to all vessels, although this is subject to limited exceptions, including vessels with sovereign immunity, such as warships, and other less significant exceptions.⁹⁰ It follows since the port State can validly enforce legislation on the visiting vessel, it can regulate the vessel's behaviour prior to entering the port⁹¹, or possibly deny the vessel access to facilities to discharge its cargo.

The potential uses of port State control in the regulation of fisheries are wide, as logically fishing vessels need to port at some point in order to discharge their cargo, refit and refuel. The ability of a State to regulate adjacent high seas fisheries by possession of a convenient port alone as in times past are now somewhat diminished. Some large freezer trawlers can remain at sea for months, have ranges

⁸⁹ All port areas can be enclosed by territorial sea baselines under the Law of the Sea Convention. Even where the port is nothing more than a simple roadstead, or has been constructed with artificial harbour works, it may still be enclosed under Articles 11 and 12, Law of the Sea Convention

⁹⁰ For example, port State controls are not usually available to a vessel that enters a port in distress, or as a result of *force majeure*: for a general discussion of port State control in international see P.B. Payoyo, *Port State Control in the Asia-Pacific: An International Legal Study of Port State Jurisdiction*, (LLM Thesis, Dalhousie University, 1993) pp.35-72; see generally G.C. Kasoulides, *Port State Control and Jurisdiction: Evolution of the Port State Regime*, (Dordrecht: Martinus Nijhoff, 1993)

⁹¹ This has been done principally in the context of environmental legislation: see Kasoulides, *supra* note 90, pp.110-141

of thousands of miles, giving some choice in the selection of a port. Nevertheless, all vessels must make a landfall eventually, at which time they come under the jurisdiction of the port State.

Port State control has been used by CCAMLR to hamper the efforts of non-CCAMLR flagged vessels fishing for patagonian toothfish. South Africa, whose ports had been used for transshipment of catches of toothfish, closed its ports to such vessels relatively quickly in the crisis. The vessels then sought to use other ports, in Mauritius and Namibia, leading the CCAMLR States, and NGOs, to pressure these States, particularly the former, into closing. To date, this pressure has not seen Port Louis in Mauritius closed.⁹²

The SS/HMS Agreement also envisages port State control as playing a role in fisheries compliance and enforcement.⁹³ Article 23 authorises port States to institute non-discriminatory measures to inspect catches and gear, and to prohibit

⁹² See Chapter 5 at p.456

⁹³ Support for port State control is also evident in the Code of Conduct for Responsible Fisheries, although in rather vague terms. Paragraph 8.3.2 of the Code urges port States to provide assistance to flag States "as is appropriate" when a vessel is voluntarily in port, and a request from the flag State for assistance is received. Assistance can include, *inter alia*, non-compliance with subregional, regional or global conservation and management measures: Para 8.3.2, *Code of Conduct for Responsible Fisheries*, adopted at Rome on 31 October 1995: reprinted in (1995) 11 *International Organizations and the Law of the Sea Documentary Yearbook* p.700

landings and transshipments where it has been established that the catch has been taken in a manner that "undermines the effectiveness of subregional, regional or global conservation measures on the high seas".⁹⁴ The terminology here is enlightening, as it is clear that port State control to prohibit landings need not be directed at fishing which is illegal *per se*. Rather it is enough that a consequence of the fishing is to weaken the effectiveness of existing management systems.

Potentially, this form of control can be most effective, but its major limitation is evident again through the example of CCAMLR. Not all States are prepared to close their ports to assist in campaigns to save fishing grounds which they themselves have no interest in, nor organizations which they are not members of. Mauritius receives no benefit from the closure of Port Louis to toothfish vessels, beyond the approbation of CCAMLR and the conservation movement. On the other

⁹⁴ Article 23, SS/HMS Agreement provides:

1. A port State has the right and duty to take measures, in accordance with international law, to promote the effectiveness of subregional, regional and global conservation and management measures. When taking such measures a port State shall not discriminate in form or in fact against the vessels of any State.
2. A port State may, *inter alia*, inspect documents, fishing gear, and catch on board fishing vessels, when such vessels are voluntarily in its ports or at its offshore terminals.
3. States may adopt regulations empowering the relevant national authorities to prohibit landings and transshipments where it has been established that the catch has been taken in a manner which undermines the effectiveness of subregional, regional or global conservation and management measures on the high seas.
4. Nothing in this article affects the exercise by States of their sovereignty over ports in their territory in accordance with international law.

hand, the presence of toothfish vessels generates trade and aids the local economy in terms of stevedoring and the use of port facilities. The type of enforcement available under Article 23 of the SS/HMS Agreement requires the port State to be a willing and enthusiastic supporter to be effective. At present, Article 23 is far from entering into force, or having a truly wide application even when that takes place. It is difficult to see why a non-fishing port State should forgo the economic benefits of receiving vessels, in the absence of any alternative compensation.

Nationality

Nationality is a clear source of jurisdiction in international law, and it is equally clear that a State can pass legislation designed to regulate the behaviour of its nationals on the high seas.⁹⁵ As such, a State may make laws to forbid its nationals from engaging in a particular fishery, either as crew members of vessels, or as the owners, in whole or in part, of corporate entities that owned vessels in the fishery. Some States have chosen to take such action⁹⁶, and there have been calls from within CCAMLR to address the ownership of unauthorised fishing vessels by CCAMLR State party nationals.⁹⁷

⁹⁵ See Shearer, *supra* note 40, p.210

⁹⁶ For example under section 9 of the Australian *Whale Protection Act* 1980 (Cth), it is an offence for an Australian national to participate as a crew member of any vessel engaged to whaling.

⁹⁷ See Chapter 5 at p.457. See also the discussion by Ridings: P. Ridings, "Compliance, Enforcement and the Southern Oceans: The Need for a New Approach", Paper presented at *Sovereignty at Sea Conference*, Hobart, October 1998, pp.8-11

Utilising the nationality of the crew as a basis for regulation has some serious limitations. First, international law does not give States an enforcement jurisdiction over their nationals wherever they might be in the world. Accordingly, legislation banning the participation of nationals can only be implemented once the recalcitrant individual returns home. Second, there may be evidentiary problems in proving an offence in the absence of an admission by the former crew member. Witnesses may be outside the jurisdiction of the State concerned, and therefore not be easily compellable to give evidence. Finally, punishing crew members may not necessarily have a positive impact upon a declining fishery, unless similar measures were implemented universally by other States. Fishing companies could simply source their employees from a State that chose not to punish its nationals for fishing, so until a sufficient number of States supported such measures to begin to shrink the available pool of labour, those ultimately responsible for unauthorised fishing would be largely unaffected. In addition, imposing hefty fines on ordinary members of the crew is attacking those with both the least capacity to pay and least responsibility for initiating the fishing.

Using the nationality of the owners of a vessel is potentially more effective, as the owners are ultimately responsible for the dispatch of the vessel, and limiting their range of action goes to the root of the problem. In practice, corporate structures make this form of regulation problematic. In international law, the nationality of a

corporation is determined by its registration.⁹⁸ Each State determines what an appropriate level of disclosure about the corporate structure should be, and to whom such information ought to be available. Accordingly it is possible for an individual resident in one State to create a corporate entity in another, whose principal asset, the ship, is registered in a third State. This is demonstrated with an example drawn from CCAMLR and the toothfish crisis. ISOFISH has reported that a Norwegian national and his financial supporters operated a number of fishing vessels in the Southern Ocean, registered in flag of convenience States through corporations registered in Panama, the Cayman Islands, Argentina and Norway.⁹⁹ While legislation targeting the individual in question, and the Norwegian registered company was open to Norway, it would be equally possible to utilise corporate structures in jurisdictions where there is no disclosure of shareholdings of companies, creating an evidentiary barrier to proving a link between the illegal fishing and the individual responsible.

Suggested Solutions

Universality and Objective Regimes

The FAO's approach to deal with problems in management and compliance have been to promote improved fishery practices, and agreements which tackle recalcitrant States and seek improved cooperation. The Code of Conduct for

⁹⁸ *Barcelona Traction Light and Power Co Ltd Case* ICJ Reports 1970 p.3

⁹⁹ ISOFISH2, *supra* note 54

Responsible Fisheries advocates sustainability and precaution¹⁰⁰, while the Compliance Agreement seeks to have all flag States capable of possessing a meaningful enforcement potential.¹⁰¹ The approach has been implicitly endorsed in the context of high migratory and straddling fish stocks, with similar support for precaution, effective enforcement, cooperative measures, the promotion of regional agreements to regulate areas, and the prevention of new participants from disrupting stable arrangements.¹⁰² The measures proposed in these instruments are all sound, and were they universally adopted by the international community would likely be most effective in reducing the likelihood of overfishing and collapse.

However, there is little or no prospect in obtaining universal support, and the difficulty that raises lies at the heart of contemporary international legal theory. States are bound by international obligations by consent, and in the absence of consent they need not comply. This principle of *pacta tertiis nec nocent* is embodied in the Vienna Convention on the Law of Treaties¹⁰³, and is implicit in customary international law, insofar as that custom requires very widespread

¹⁰⁰ See Chapter 3 at p.240

¹⁰¹ See Chapter 3 at p.234

¹⁰² See Chapter 3 at p.250

¹⁰³ Article 34, *Vienna Convention on the Law of Treaties*, done at Vienna on 22 May 1969, entered into force 27 January 1980: reprinted 8 ILM 679 (1969) provides:

A treaty does not create either obligations or rights for a third State without its consent.

practice and *opinio juris* before crystallising. As such, if a State does not wish to join a regional fisheries body, or become a party to the SS/HMS Agreement, or to the FAO Compliance Agreement, it need not do so. The scope of its obligations are limited to those under the Law of the Sea Convention, which as has been observed, both within its EEZ and beyond, give a State great discretion in its behaviour, constrained only by weak duties of negotiation.

Failure by a State to participate in these instruments undermines their effectiveness. The example of the patagonian toothfish crisis is an excellent case in point, as there is little utility in a number of participants showing restraint and complying with conservation measures, if a third State can enter, and without the financial or logistic burdens of compliance, take a share of the stock. CCAMLR's efforts to save the patagonian toothfish will likely be set at nought, yet for that portion of the third State fishing that is taking place outside zones of national jurisdiction, international law would appear to have been complied with.

The question is then how might universality of these arrangements be achieved. The Vienna Convention on the Law of Treaties, by virtue of its endorsement of the customary rule allowing third States to be bound,¹⁰⁴ does permit an exception for State consent in the formation of an objective regime. As considered earlier, objective regimes are intended to bind all States to comply with the obligation

¹⁰⁴ Article 38, Vienna Convention on the Law of Treaties

therein, regardless of consent.¹⁰⁵ However, a third State can avoid the impact of the regime if, prior to acceptance of its objective quality, it protested the application of the obligation to it.¹⁰⁶ It would seem likely that using such a measure to compel States to cease acting as ports of transshipment, or offering flags of convenience would elicit protest action very quickly.

Even in the absence of protest, while the imposition of an objective regime would give the required degree of universality, in practical terms the exercise would be doomed to failure. Universality is necessary to prevent recalcitrant vessels from circumventing national or international regulation, making it equally difficult to avoid the application of the law, regardless of the registry of the vessel or its port of operations. If States, particularly developing States, are deprived of the revenue from such vessels, and then are obliged to implement a regime they have not ratified, to take positive steps to remove such revenue, compliance by these States will be half-hearted. No State is likely accept the cost of an enforcement and inspection scheme if the only outcome is the deprivation of its former trade, especially where such measures are imposed by other States. It might be expected

¹⁰⁵ See Chapter 3 at p.280

¹⁰⁶ The absence of protest equates with acquiescence in this context. See the discussion of objective regimes by Sir Humphrey Waldock: (1964) 2 *Yearbook of the International Law Commission* pp.27-34; H. Ballereich, "Treaties, Effect on Third States" in R. Bernhardt (ed.), *Encyclopedia of Public International Law*, (Amsterdam: North-Holland, 1984) Vol.7, p.476 at pp.478-480; C.M. Chinkin, *Third States in International Law*, (Oxford: Clarendon Press, 1993) pp.30-32

State efforts to meet these imposed obligations may be poor.

Any attempt to gain universality must be accompanied by inducements for States to cooperate. These inducements must be sufficient to make the imposition of effective monitoring of vessels, as envisaged in the Compliance Agreement, at least cost-neutral to the State concerned. It is no coincidence that the States most prepared to assist in the provision of port facilities and flags of convenience are developing States, whose interest in providing these services is financial rather than an attempt to undermine world fisheries. If the international community, on a regional or global basis is prepared to offer financial inducements to States, in return for signing up to various fisheries instruments considered elsewhere in this work, then some progress towards universality might be made. If all States would support the measures presently open for adoption, many of the problems of compliance would be clearly diminished, and the way might be open for additional measures to attack remaining difficulties.

In this context, some analogy can be drawn from international practice in supporting financial aid to developing States, and the reluctance of developed States to contribute. Chapter 33 of Agenda 21 established an ambitious programme for the financial support of sustainable development around the globe.¹⁰⁷ The funds

¹⁰⁷ Paragraph 33.13, Agenda 21 indicated that a target of 0.7 percent of Gross National Product for Official Development Assistance ought to be set: Para. 33.13, *Agenda 21*, adopted at Rio de Janeiro on 13 August 1992:

involved are extremely large, calculated just for the implementation of the programmes under Chapter 17 in excess of US\$13 billion per year.¹⁰⁸ These funds were to be provided in part from the Global Environment Facility (GEF)¹⁰⁹, which to date has only managed to fund ocean and coastal management programmes to the value of US\$177 million to the present, and a further US\$400 million over the next 3 to 5 years.¹¹⁰ Even the most generous estimates of international contributions indicate funding at less than ten percent of the programme targets.¹¹¹ This underwhelming support would suggest a likely lack of enthusiasm for funding for improved international compliance.

The prospect of funding compliance from within the fishing industry is also problematic. International environment taxes have been proposed since

A/Conf.151/26 (Vol.II): reproduced in N.A. Robinson (ed.), *Agenda 21 and the UNCED Proceedings*, (New York: Oceana Publications, 1993) Vol.4

¹⁰⁸ See the table reproduced in E.M. Borgese, *Ocean Governance and the United Nations*, (Halifax: Center for Foreign Policy Studies, 1996) p.63

¹⁰⁹ Additional funding was to come from international development banks, other UN agencies, bilateral assistance, debt relief, and private funding: Para. 33.14, Agenda 21

¹¹⁰ Commission for Sustainable Development, *Report of the Secretary-General: Oceans and Seas*, 27 January 1999: <<http://www.un.org/esa/sustdev/report99/sg4-99.pdf>>, para. 9

¹¹¹ Borgese, *supra* note 108, p.63

UNCED¹¹², and Borgese has suggested an ocean user tax, levied on all oceans activities.¹¹³ Funds from these taxes would be directed towards ocean environmental programmes. In theory, such a tax, based upon the level of fishing activity or the value of the catch, could be levied on the fishing industry to assist in compensating States for entering into the various compliance regimes.

In the medium term, there are reasons to suggest that the adoption of an international fishing tax is unlikely. First, there is no indication that there is support for such a move. The Commission for Sustainable Development as recently as April 1999, while urging States to adopt the SS/HMS Agreement and the various

¹¹² Most notable of these was the so-called "Tobin tax" where funds for global environment projects would be provided by an international value tax on foreign exchange transactions. Set at a level of 0.01% of the value of converted currency, it was hoped the tax would provide tens of billions of dollars in revenue, and dampen enthusiasm for currency speculation: Commission for Sustainable Development, *Financial Resources and Mechanisms for Sustainable Development: Overview of Current Issues and Developments: Report of the Secretary General*, 22 February 1996, UN Doc. No.: E/CN.17/1996/4: <gopher://gopher.un.org:70/00/esc/cn17/1995-96/finance/96-4.en>, para. 24

¹¹³ Borgese, *supra* note 108, pp.90-96; E.M. Borgese, *The Future of the Oceans: A Report to the Club of Rome*, (Montreal: Harvest House, 1986) pp.63-66; see also the discussions of the Commission for Sustainable Development's Intercessional Ad Hoc Open-Ended Working Group on Finance in February 1994: Commission for Sustainable Development, *Financial Resources and Mechanisms for Sustainable Development: Overview of Current Issues and Developments: Report of the Secretary-General*, 22 February 1994, UN Doc. No.: E/CN.17/ISWG.II/1994/2: <gopher://gopher.un.org:70/00/esc/cn17/1993-94/wg-2/iswg-2-2>, paras 95-96

FAO measures, did not call for funding to compensate States for doing so.¹¹⁴ Second, there is some doubt whether the fishing industry could afford the imposition of a tax. For a number of years the industry worldwide has received substantial subsidisation, to the extent that the cost of fishing greatly exceeds the value of the catch. The subsidies are presently estimated by the World Bank at between US\$14 to \$20 billion per annum¹¹⁵, which suggests the industry is ill equipped to be the subject of a tax, and is already in receipt of substantial financial support from governments. Third, and perhaps most significantly, has been the reaction of the international community to the adoption of international taxation. The reaction is neatly summed up by the Commission for Sustainable Development:

Advocates of such taxes and charges tend to assume that they would easily become widely accepted by national governments and have thus chosen to focus on technical details. Unfortunately this may not be a realistic approach because global taxes and charges, even if technically feasible, may not be readily accepted. There is currently little apparent willingness on the part of many governments to cede sovereign taxation power to any international body. In addition, global taxes would probably result in enormous wealth transfers, depending on the design of individual taxes; this

¹¹⁴ Commission for Sustainable Development, *Report of the Secretary-General: Oceans and Seas*, 27 January 1999: <<http://www.un.org/esa/sustdev/report99/sg4-99.pdf>>, para. 19-24; see also Commission for Sustainable Development, *Report of the Commission for Sustainable Development on the Fourth Session*, New York, 18 April - 3 May 1996: <<http://www.un.org/esa/sustdev/oceans/oceans2.htm#decision>> para. 22 and paras 36-43

¹¹⁵ See M. Milazzo, *Subsidies in World Fisheries: A Re-Examination*, World Bank Technical Paper No.406, 1998; see also C.D. Stone, "Too Many Fishing Boats, Too Few Fish: Can Trade Laws Trim Subsidies and Restore the Balance in Global Fisheries?" (1997) 24 *Ecology Law Quarterly* p.505

factor alone would make the negotiation of global taxes extremely difficult.¹¹⁶

While such taxes may be the solution to the problem of compliance in the longer term, it is clear that at present there is little likelihood of States supporting them, or other schemes directed at financial inducements for compliance.

Technology and Compliance

At present, technology exists that can indicate a ship's position in the ocean, anywhere on the globe, and regularly report that position by satellite to a central location, or alternatively record the vessel's entire journey to be downloaded on its return. Referred to as Vessel Monitor Systems (VMSs), these devices are presently used in the Southern Ocean by CCAMLR State parties in the patagonian toothfish fishery.¹¹⁷ The devices are typically sealed, to prevent tampering, and should a VMS unit fail, the central authority, which in the case of the patagonian toothfish conservation measures is CCAMLR, must be informed as soon as practicable.

The rationale behind VMS is simple. If it is known where a vessel went and how long it spent there, it can be determined if it was engaged in any unauthorised activity.

¹¹⁶ Commission for Sustainable Development, *Financial Resources and Mechanisms for Sustainable Development: Overview of Current Issues and Developments: Report of the Secretary General*, 22 February 1996, UN Doc. No.: E/CN.17/1996/4: <gopher://gopher.un.org:70/00/esc/cn17/1995-96/finance/96-4.en>, para. 25

¹¹⁷ See Chapter 5 at p.460

As long as the vessel is returning to a port where enforcement is a possibility, then the need for at sea compliance measures, such as patrols, is reduced. The mere presence of the device will ensure that a fishing vessel will not enter a closed area, nor will it be able to stop at sea for extended periods to tranship catch from recalcitrant vessels free of VMS, without giving an explanation as to why it halted.

If a universal VMS scheme could be instituted for vessels over a specified size, then the practical difficulties facing States in monitoring EEZs and high seas areas would be greatly reduced. However such a scheme would require a significant degree of cooperation, and some diminution of State sovereignty. The difficulties are best illustrated by example.

Firstly, if on returning to port VMS equipment was downloaded to reveal a vessel had been fishing in the EEZ of another State, and there was no authorisation to do so, an arrest of the vessel would be on behalf of that other State, in effect exercising its sovereign rights. Any regional or global VMS agreement would have to permit for mutual enforcement, and potentially for extradition. Such a scheme would be somewhat in advance of the one presently operating in the Doughnut Hole Convention, which itself is one of the more forward-looking and cooperative arrangements in mutual enforcement. Presumably, any such agreement would have to incorporate extradition provisions to allow the coastal State to launch its own prosecution, however holding individuals and vessels pending their extradition for

fisheries offences may be problematic if the vessel's owner quickly posts an appropriate bond.¹¹⁸ The dispute resolution mechanisms of the Law of the Sea allow for a flag State to expedite the release of a vessel flying its flag held in a foreign port¹¹⁹, and this may make a VMS agreement difficult to operate.

Secondly, if it was apparent that the vessel had fished contrary to international conservation measures on the high seas, any action taken by the port State would have to be on behalf of the flag State. Obviously, if ultimate prosecution is in the hands of a flag State, a flag of convenience State might be unenthusiastic in expending the cost of trying the recalcitrant vessel. Again, the problem of universality of application is significant in this regard.

Finally, if a VMS system is not universal, the beneficial consequences for patrol will not occur. In the CCAMLR area, patrol of the remote fishing grounds is necessary to deter non-participants, as a VMS system will only indicate where the legal vessels are, not the illegal ones. The principal advantage of such a system is providing certainty to observers whether a vessel spotted on the sea is licensed to fish in the area or not.

¹¹⁸ See the discussion above at p.500

¹¹⁹ Article 292, Law of the Sea Convention

Restricting Trade

Another possibility is restricting trade in fish that are not caught in accordance with regional conservation measures, or in a coastal State's EEZ with that State's authorisation. The idea, posed by environmental groups, is that fish caught in contravention of good management practice would be made harder sell, and therefore unauthorised fishing would be discouraged.¹²⁰ However such a scheme is dependent upon the assumption that all fish not caught in accordance with international conservation measures are caught contrary to international law. Aside from meeting the weak duty of negotiation, it is clear a flag State has no other obligation to fulfil under the Law of the Sea Convention if it wishes to authorise its vessels to fish on the high seas. Without knowing where a vessel has been, it can be difficult to prove that particular fish were caught inside a particular EEZ, and the vessel's master can simply plead the fish were caught on the high seas. This plea was used by vessels fishing in the doughnut hole prior to collapse, and is presently employed by masters fishing for patagonian toothfish in the Southern Ocean. It would be difficult to justify the restriction of trade in a particular fish, when, in the absence of evidence other than suspicion, that fish had been caught in accordance with rights exercisable under international law.

¹²⁰ See Greenpeace, "Southern Ocean in Crisis", October 1998: <<http://www.greenpeace.org.au/Biodiversity/SOcrisis/index.htm>>

Co-Management

One method open to States to improve compliance is to use co-management structures in the management of particular stocks or ecosystems. Co-management as a concept has not been considered in this work, and it is therefore appropriate to briefly consider what it is, and how it might be utilised to improve management systems. Co-management is not a solution with universal applicability, and the discussion will consider the advantages and disadvantages of its employment.

Advantages of Co-Management

The principal advantages of the use of co-management systems are improvements in terms of access to additional expertise and data, significant improvements in domestic compliance and management costs and reactivity to problems. The expertise of the community members, particularly traditional ecological knowledge, can be a valuable addition to the data available to resource managers from scientific sources. In years where scientific studies of a stock is incomplete or unable to be conducted, community representatives on decision-making bodies are able to bring perceptions of the current state of the resource, based upon observations of natural phenomenon and comparing these within a collective community memory of generations. In addition, co-management schemes are excellent vehicles for the collection of baseline scientific data. Communities are far more sympathetic to the additional chore of noting catches and location, when they can see direct benefit to

their community from doing so.¹²¹

In addition to being a valuable source of data, community participation through the committee can also legitimise the placing of greater burdens in enforcement and monitoring than otherwise might be acceptable. In a community where management decisions are imposed from without, resentment arising from the lack of input may translate into the ignoring of stock quotas, size or age of harvested stock or season or area restrictions. Where significant disobedience takes place, the viability of any management system is threatened, and the only alternatives left to government are greater effort towards compelling compliance, or abandonment of the management system. With co-management in this context, the participation of the community legitimises decisions, and encourages meaningful self-regulation. Community involvement through the employment of local individuals to collect data and to provide for actual enforcement of promulgated management decisions

¹²¹ For example, in the western Canadian Arctic, under the Inuvialuit Final Agreement, the FJMC operated a detailed survey of all hunting and trapping activity. It provided calendars with photos of particular species to assist with identification, and employed individuals in each centre to encourage participation and ensure data was collated effectively. In 1995, FJMC possessed a more complete data store on some Arctic fisheries than the Canadian Department of Fisheries and Oceans: ref to reports and interview. More generally on the benefits to data collection see T.M. Cloutier, "Conflicts of Interest on Regional Fishery Management Councils: Corruptions or Cooperative Management" (1996) 2 *Ocean and Coastal Law Journal* p.101 at p.110

reinforces the community cooperation that is possible by this method.¹²²

In relation to the last advantage, by placing more responsibility with local communities, central government regulators can reduce their own involvement, and limit their costs. Further, the collection of additional data, and improved compliance mean that fewer resources need be channelled into those areas. Further, community satisfaction with a co-management scheme is likely to be higher, and therefore requests and complaints directed to central agencies are likely to be reduced.¹²³ By operating at a local level, the system is also more likely to be responsive to local problems, and to address them more specifically and effectively than an agency charged with overseeing a large number of fisheries. Sen and Raakjær Nielsen note that co-management systems have often been implemented by government in response to crises, or perceptions that governance of the fishery was not effective.¹²⁴ As such, co-management is perceived as a means to improve management, without pouring more resources into centralised and ineffective

¹²² For example, Ostrom has noted a high level of compliance in a co-management scheme operated by the inshore fishermen of Alanya, in Turkey: E. Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action*, (Cambridge: Cambridge University Press, 1990) pp.18-20; see also Cloutier, *supra* note 121, pp.111-112

¹²³ These benefits were noted by Pomeroy and Pido in their examination of a new fisheries co-management system for San Miguel Bay in the Philippines: R.S. Pomeroy and M.D. Pido, "Initiatives towards Fisheries Co-Management in the Philippines: The Case of San Miguel Bay" (1995) 19 *Marine Policy* p.213 at pp.217-226

¹²⁴ S. Sen & J. Raakjær Nielsen, "Fisheries Co-Management: A Comparative Analysis" (1996) 20 *Marine Policy* p.405 at pp.416-417

systems.¹²⁵

Disadvantages of Co-management

The principal disadvantage with co-management is its lack of possible application to a large proportion of the world's fisheries. Co-management requires community-oriented management: that is, fishing has to be conducted on a scale compatible with community control, which is generally quite modest. Few, if any, communities could outfit and operate the type of large scale freezer vessel used in the Southern Ocean. Community-based management cannot cope with the economic demands of most oceanic fishing, and therefore such systems will almost always be directed at inshore fisheries, conducted by small owner operators. This is implicitly attested to by the fact the vast majority of co-management arrangements are domestic rather than international, as community groups are more usually found entirely within the bounds of one State.¹²⁶

This inapplicability of co-management to large scale fisheries is also demonstrated by the manner in which accumulated knowledge on a fishery is dealt with. Under a

¹²⁵ See generally J. Raakjær Nielsen & T. Vedsmand, "Fishermen's Organisations in Fisheries Management: Perspectives for Fisheries Co-Management Based on Danish Fisheries" (1997) 21 *Marine Policy* p.277 at pp.278-279

¹²⁶ S. Jentoft & B. McCay, "User Participation in Fisheries Management: Lessons Drawn from International Experiences" (1995) 19 *Marine Policy* p.277 at pp.242-243

co-management system, traditional ecological knowledge is built up over generations, and is shared within the community for combined benefit. While the existence of a central agency charged with data collection and dissemination, such as CCAMLR, fulfils a similar function, the process is very different in character. Fishing companies regard the location of their vessels, and areas which are found to be high yielding, as economic data, and therefore data to be kept from competitors, if possible. There is no sense of community cooperation between rival fishing companies, and cooperation is only sought in the event of distress at sea.¹²⁷

Similarly, co-management does not sit well with corporate structures. Co-management is based around individuals accumulating knowledge, and using that to assist in the care of the ecology. A corporation's interest in a fishery will rarely extend beyond the maximisation of profit, and the individuals it hires to fish on its behalf may, or may not, be familiar with the fishery they are exploiting. Community-based fisheries are exploited by individuals whose society is tied directly to the fishery, and hence their knowledge of it is far greater, since it has figured prominently in their society throughout their lives. The same point can be made in terms of the living individuals draw from the fishery. For individuals

¹²⁷ As Jentoft, McCay and Wilson note:

...it seems naive to assume that co-management will transform what has become an extremely competitive and often antagonistic relationship into a cooperative and responsible one."

S. Jentoft, B.J. McCay, and D.C. Wilson, "Social Theory and Fisheries Co-Management" (1998) 22 *Marine Policy* p.423 at p.424

engaged in large commercial fisheries, their interest in the fishery itself is diminished, as they draw their livelihood from the wages taken from the company exploiting the stock. If the fishery collapses, the individuals seek employment elsewhere, or the company chooses to fish elsewhere, whereas in communities reliant upon a particular fishery, the fabric of their social structure is tied to the fishery, so the fishery's collapse is of far greater importance.¹²⁸ The community cannot relocate¹²⁹, nor can it switch to a different stock unless one is available in the immediate vicinity.

An additional disadvantage is the strain co-management places upon the community. In theory, the establishment of representative committees to combine with government to management resources allows for the empowerment of communities. In practice, effective participation in cooperative arrangement requires a certain level of skill in oral and written communication, and some understanding of the principles and terminology involved in modern fisheries management and oceanography. In small communities, such individuals may be in short supply, and

¹²⁸ The linkage between co-management and a sense of community has been pointed out in the context of Nova Scotian "fixed gear" fishermen: Jentoft, McCay & Wilson, *supra* note 127, p.430. The same point is made by Crean in the context of communities in the Solomon Islands and the Shetland Islands: K. Crean, "Centralised and Community-Based Fisheries Management Strategies: Case Studies from Two Fisheries Dependent Archipelagos" (1999) 23 *Marine Policy* p.243

¹²⁹ Although not the tendency towards the displacement of young people from fishery communities in search of employment elsewhere.

therefore the demands upon those individuals may be great. Participation of individuals with poor communication skills, or a lack of understanding of the science involved in managing a fishery may lead to a failure to effectively communicate. This problem of communication is by no means all one way, as scientists may have difficulty in articulating their conclusions and data in terms readily understandable to lay persons.¹³⁰ Care must be taken to ensure that each co-management scheme is tailored to the particular needs and structures of the particular community or region, to ensure that communication between the participants is constructive, and the overall operation of the scheme is effective.¹³¹

Application of Co-management

Co-management is clearly gaining wide support, and its application to fishing communities is taking place in a growing number of States around the world. The disadvantages in a co-management system are such that as the fishery and its participants grow in size, numerically and economically, the benefits of co-

¹³⁰ The difficulties of communication between scientists and users of fisheries are noted by Jentoft and McCay: Jentoft & McCay, *supra* note 126, pp.239-241

¹³¹ The importance of tailoring a co-management system is stressed by Pomeroy and Carlos, who note the initial limited success of co-management in the Philippines: R.S. Pomeroy and M.B. Carlos, "Community-Based Coastal Resource Management in the Philippines: A Review and Evaluation of Programs and Projects, 1984-1994" (1997) 21 *Marine Policy* p.445 at pp.459-462; see also R.S. Pomeroy & F. Berkes, "Two to Tango: The Role of Government in Fisheries Co-Management" (1997) 21 *Marine Policy* p.465 at pp.470-471

management are largely diluted, and consequently using such systems for smaller fisheries is advisable. In addition, co-management arrangements are generally only applicable to national regulation, and therefore would be of no utility in either of the two conventions considered in Chapters 4 and 5. Co-management is essentially concerned with improving domestic decision-making, and hence its application to larger fisheries or to international fisheries is problematic. In terms of localised and small-scale fisheries, there is every reason to assume co-management can be implemented successfully, and done in such a way so as to incorporate precautionary and ecosystem management techniques into the structure.

Conclusion

Ultimately, the prognosis for international fisheries management is not good. While there has been genuine progress in the application of principles in management over the last decade, there is still uncertainty as to what these new principles entail, and how they might be implemented. These uncertainties appear unlikely to stop the march of precautionary and ecosystem management, but they may give decision-makers cause to reflect in the future, once the terms that so easily roll off lawyers' tongues have to be put in to practice. Of greater concern is compliance, which remains a fundamental issue. The efforts made to combat the problem to date are admirable, but it is difficult to see they can be successful when there are States willing to assist individuals subvert the rules intended to keep a management system functioning effectively. Compulsion of these States to toe the line is unlikely to

succeed, and to get them to withdraw their services from those manipulating the system will require more than platitudes about the good of the planet, and the benefits of cooperation.

What problems are present, from both a management and a compliance perspective, illustrate the limitations of international law. Much international effort since UNCLOS III, particularly in the last decade, has been expended in the formulation of new approaches to fisheries management. These approaches are creative and if successfully implemented would provide the planet with a system for the sustainable management of one of the most relied on resources. The law has provided an admirable solution.

Yet the solution is flawed as it cannot be implemented. A precautionary approach is easily described by lawyers, but its representation in a format that can be conveyed in an objective and meaningful way is more difficult. Complete ecosystem management may well be beyond the capacity for science to deliver, or require such an investment in research, that meaningful answers would require more funding than the value of the fisheries in issue. It may be no coincidence that the only international body charged with implementing an ecosystem-based system is operating in the Antarctic, where commercial considerations have never played a significant role, and research has dominated the international agenda.

Even if these difficulties can be overcome in time, and it is not inconceivable that they may be, the management system must rest upon the base provided for it by international law. Any management system must require compliance to operate effectively. The tools provided for international compliance are ill suited to their task. Flag State enforcement is significantly diminished by the use of flags of convenience. Port State control depends upon the active cooperation of the port State to monitor catches and ascertain where vessels have been. Coastal State and even cooperative at sea enforcement requires a physical presence over vast areas. In each case there are significant limitations on the effectiveness of the means to ensure compliance.

International responses to these problems are necessarily limited. The FAO, through its promotion of the Compliance Agreement, and the Code of Conduct for Responsible Fisheries, has recognised the difficulties, and is working towards persuading States to adopt these measures. However as already noted, there is little incentive for flag of convenience States, or port States to participate in schemes designed to improve compliance with international arrangements unless national interests favour participation. Few flag of convenience States would gain any benefit from ratifying the Compliance Agreement or the SS/HMS Convention, whereas they would lose the revenue generated by their open registry. The same is true for port States, where compliance might involve closing a port to vessels that wish to tranship an unauthorised catch. This deprives the port State of the benefits

of trade, while at the same time not providing any consequential income from taking that action.

The same problems are evident in any proposal for the establishment of a "World Fisheries Organization" to manage high seas or even domestic fisheries. States cannot be compelled to participate in such an arrangement under international law, and the use of objective regimes to remove State consent will also not be effective. Under the Law of the Sea Convention, the only existing duty imposed upon States are the weak duties to negotiate considered in Chapter 2, and these will clearly be ineffective in forcing a flag State or a port State to actively support a regional fisheries body. Dispute resolution under the Law of the Sea Convention is certainly available for high seas fisheries disputes, but if the scope of the duty is no greater than a mere *pactum de negotiando* it is difficult to see what positive outcomes can flow from the use of such procedures.¹³²

Cooperative enforcement might be a way around this problem, but cooperation in enforcement in international waters to date has generally been poor, which bodes ill for a supra-national body reliant upon such a system. The use of enforcement measures on the high seas by non-flag State vessels flies in the face of a principal tenet of the law of the sea, and it is difficult to see flag of convenience States consenting to such measures. In addition, the problems of adequate resources for

¹³² See Chapter 2 at p.124

patrol are present, and emphasised, as the waters concerned are more remote from those subject to national jurisdiction.

In the final analysis, it is submitted that contemporary international law does not provide a solution to effective fisheries management, nor can changes to international law alone bring about effective management. The international fora that have considered world fisheries, principally the FAO, and to a much lesser extent the Commission for Sustainable Development¹³³, have made recommendations to improve fisheries management, which on balance are sound and positive measures.¹³⁴ Yet these are mere recommendations, and there is little reason to assume that the States that are presently subverting management principles, but not breaking international law, will change their ways. The States concerned would make the change at some cost, and yet are States which are by no means wealthy. The universality required to make the SS/HMS Convention or Compliance Agreement or any other similar scheme work can only be achieved if States adversely affected by the imposition of the scheme are compensated for their participation. At present, there are no moves afoot to compensate States to join any

¹³³ Commission for Sustainable Development, *Report of the Secretary-General: Oceans and Seas*, 27 January 1999: <<http://www.un.org/esa/sustdev/report99/sg4-99.pdf>>, para. 19-24; see also Commission for Sustainable Development, *Report of the Commission for Sustainable Development on the Fourth Session*, New York, 18 April - 3 May 1996: <<http://www.un.org/esa/sustdev/oceans/oceans2.htm#decision>> paras 36-43

¹³⁴ See Chapter 3 at p.284

fisheries scheme. Efforts at compensation after UNCED to assist developing States implement environmental protection measures have enjoyed limited success.¹³⁵ There is no reason to suppose that fishing States will be any more eager pay in this instance.

Whither fisheries management? The developments to the present time outlined in this work are positive steps, and there is little doubt that the international community has responded to the perceived inadequacies of management systems. The effectiveness of that response is hampered by the nature of international law, and the capacity of States to meet the obligations imposed upon them. Progress, in the absence of monetary incentives for wider participation, is likely to be incremental at best. In the meantime, the periodic attack on stocks and their subsequent collapse in various locations around the globe is likely to continue.

¹³⁵ The Global Environment Facility has had some US\$2 billion pledged since 1993: <<http://www.gefweb.org>>.

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APPENDIX

INTERVIEWS CONDUCTED

Dr David Agnew
Data Manager
Commission for the Conservation of Antarctic Marine Living Resources
Hobart TAS
AUSTRALIA
Interview conducted March 1996

Leslie Beckman
Canadian Arctic Resources Committee
Ottawa ON
CANADA
Interview conducted June 1995

Lloyd Binder
Inuvialuit Joint Secretariat
Inuvik NWT
Interview conducted June 1996

Dr R. McV. Clarke
Department of Fisheries and Oceans
Central and Arctic Region
Winnipeg MB
CANADA
Interview conducted June 1996

Michael Fabijan
Harvest Study Coordinator
Joint Secretariat
Inuvik NWT
Interview conducted June 1996

Dr Terry Fenge
Canadian Arctic Resources Committee
Ottawa ON
CANADA
Interviews conducted June 1995 and July 1996

Professor Milton M.R. Freeman
Henry Marshall Tory Professor
Department of Anthropology
University of Alberta
Edmonton AB
CANADA
Interview conducted June 1996

Dr Dan Goodman
Department of Fisheries and Oceans
Ottawa ON
Interview conducted July 1996

Dr Albert Haller
Canadian Polar Commission
Ottawa ON
Canada
Interview conducted June 1995

Bruce Hanbidge
Resource Person
Wildlife Management Advisory Council
Inuvik NWT
Interview conducted June 1996

Professor Clifford Hickey
Director
Canadian Circumpolar Institute
University of Alberta
Edmonton AB
CANADA
Interview conducted June 1996

Dr Michelle Ivanitz
Canadian Circumpolar Institute
University of Alberta
Edmonton AB
CANADA
Interview conducted June 1996

Patricia Low-Bedard
Department of Foreign Affairs and International Trade
Ottawa ON
Telephone interview conducted June 1995

Fred J. McFarland
Northern Environment Directorate
Department of Indian and Northern Affairs
Hull PQ
CANADA
Interview conducted July 1996

Dr Robert Mosherenko
Department of Fisheries and Oceans
Arctic and Central Regions
Winnipeg MB
CANADA
Interview conducted June 1996

Chester Reimer
Inuit Circumpolar Conference
Ottawa ON
CANADA
Interview conducted July 1996

Dr Pierre Richard
Department of Fisheries and Oceans
Central and Arctic Region
Winnipeg MB
CANADA
Interview conducted June 1996

Professor Fred Roots
Environment Canada
Ottawa ON
CANADA
Interview conducted July 1996

Esteban de Salas
Executive Secretary
Commission for the Conservation of Antarctic Marine Living Resources
Hobart TAS
Interview conducted March 1996

Bob Simpson
Inuvik NWT
Interview conducted June 1996

Dr L. Skalova
Committee on Fisheries
Moscow
RUSSIAN FEDERATION
Interview conducted May 1995

Dr Norm Snow
Joint Secretariat
Inuvik NWT
Interview conducted June 1996

Matt Stabler
FJMC
Joint Secretariat
Inuvik NWT
CANADA
Interview conducted June 1996

Dr Marc Stephenson
Canadian Circumpolar Institute
University of Alberta
Edmonton AB
CANADA
Interview conducted June 1996

Tim Surette
Department of Fisheries and Oceans
Truro NS
CANADA
Interview conducted June 1995

Dr Brian Wong
Department of Fisheries and Oceans
Ottawa ON
Interview conducted June 1995

Peter Wyse
Department of Indian and Northern Affairs
Hull PQ
CANADA
Interview conducted July 1996

Selected North American Co-management Agreements 1975-1995

Agreement	Location	Year	Parties	Species
James Bay & Northern Quebec Agreement	Quebec	1975	Canada; Quebec; Cree; Inuit	All
Inuvialuit Final Agreement	Western Canadian Arctic	1984	Canada; GNWT; Yukon; Inuvialuit	All
Tungavik Federation of Nunavut	Eastern Canadian Arctic			All
Porcupine Caribou Management Agreement	Western Canadian Arctic	1985	Inuvialuit; Council for Yukon Indians; Dene Nation; Metis of the NWT; Canada; GNWT; Yukon	Caribou
Yukon-Kuskokwim Delta Goose Management Plan	Alaska	1984	Alaska; California; United States Fish & Wildlife Service; Association of Village Council Presidents	Geese
Beverly-Qamanirjuaq Caribou Agreement	Eastern Canadian Arctic	1982	Saskatchewan; Manitoba; GNWT; Canada; Misc. native board members	Caribou
Wisconsin Wildlife Management Agreement	Wisconsin	1984	Wisconsin; Chippewa	All
Chapel Island First Nation Contribution Agreement	Atlantic Canada	1993	Micmac; Crown in Right of Canada	Fisheries

Selected North American Co-management Agreements 1975-1995

Agreement	Location	Year	Parties	Species
Barriere Lake Trilateral Agreement	Quebec	1995	Canada; Quebec; Algonquin	Forestry and wildlife
Wendaban Stewardship Council	Ontario	1990	Ontario; Teme-Augama	Forestry
Shoal Lake Reserve	Manitoba	1989	Shoal Lake Band #40	
Pen Island Caribou Management Council	Manitoba; Ontario	1991	Manitoba; Ontario; Shamattawa First Nations; Fort Severn First Nation	Caribou
Skownan Moose Board	Manitoba	1985	Manitoba; Waterhen Indian Band	Moose
Mathais Colomb Moose and Woodland Caribou Agreement	Manitoba	1991	Manitoba; Mathais Colomb First Nation	Moose & Caribou
Sipanok Area Management & Development Agreement	Saskatchewan	1992	Queen in Right of Saskatchewan; Red Earth Band Cree; Shoal Lake Band Cree	Renewable resources
James Smith First Nation Agreement	Saskatchewan	1994	Saskatchewan; James Smith First Nation	Resources & Enviro. Management

Selected North American Co-management Agreements 1975-1995

Agreement	Location	Year	Parties	Species
Metis of Saskatchewan Agreement	Saskatchewan	1995	Saskatchewan; Metis Nation of Saskatchewan	Resources & Enviro. Management
Whitefish Lake Agreement	Alberta	1994	Alberta; Whitefish Lake First Nation	Commercial fisheries & other renewable resources
Little Red River Cree and Tallcree MOU	Alberta	1995	Alberta; Little Red River Cree Nation; Tallcree First Nation	Forestry
Xax'lip Joint Stewardship Agreement	British Columbia	1992	Queen in right of British Columbia; Xax'lip First Nation	Land use
Clayoquot Sound Agreement	British Columbia	1993	Queen in right of British Columbia; Hwiih of Clayoquot Sound	Forestry
Homalco Fisheries Management Agreement	British Columbia	1992	Queen in right of Canada; Homalco Indian Band	Fisheries
Haida Framework Interim Measures Agreement #2	British Columbia	-	Queen in right of Canada	Fisheries

Selected North American Co-management Agreements 1975-1995

Agreement	Location	Year	Parties	Species
Alaska Bowhead Whale Management Regime	Alaska	1977	Alaska Eskimo Whaling Commission; NOAA	Bowhead whale
Great Slave Lake Advisory Committee	Western Canadian Arctic	1977	Dene Nation; Metis of the NWT; Canada; GNWT; Fresh Fish Marketing Corp.; Commercial & Recreational Fishing Org.	Fisheries
Pacific Walrus Management Regime	Alaska	1978	Eskimo Walrus Commission; US Fish & Wildlife Service	Walrus
North Quebec Beluga Management Regime	Quebec	1986	Anguvigaq Wildlife; Anguvigapiks; Canada	Beluga

Selected North American Co-management Agreements 1975-1995

Agreement	Location	Year	Parties	Species
Great Bear Lake Management Committee	Western Canadian Arctic	1986	Native Communities; Sport lodge industry; Canada; GNWT	Fisheries
Alaska-Inuvialuit Beluga Whale Committee	Western Canadian Arctic; Alaska	1988	Inuvialuit Game Council and FJMC; North Slope Borough; NW Alaska Natives Assoc.; Alaskan regional corps.; US National Marine Fisheries Service; Alaska Dept of Fish & Game; Canada	Beluga