

The Tragedy of the Independent: Public Policy and Traditional Recruitment in Nova Scotia's  
Small Boat Fishery

By

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## Abstract

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### Abstract

The industrialization and modernization of the fishery in Atlantic Canada has had a destructive effect on small boat dependent fisheries communities. The neoliberal policies and processes of the current political economy support corporate, wealth accumulation fishing and make it extremely difficult for small boat marine harvesters to participate in the fishery. This disrupts important local level social and economic processes that underwrite family and community in coastal settings. In particular, traditional patterns of recruitment based on networks of kith and kin relations are challenged by restrictive management policies. These traditional processes mobilize the continuation of local knowledge, fishing skills, and the family unit over generations, and as such are a key source of human and social capital, and thus sustainability, in small boat dependent fisheries communities. However, restrictive entry and allocation policies such as limited entry licensing and individual quota management make it increasingly difficult for youth to choose fishing as a livelihood.

This research assembles fundamental data regarding small boat dependent fisheries communities and how they have changed in response to the political economy over time. It also incorporates survey data from a sample of small boat marine harvesters which illustrates family and life histories in coastal communities in Nova Scotia. The Sustainable Livelihoods Approach (SLA) is used to illustrate the value of the social and human capital present in social networks in fisheries communities, and argue that these more qualitative types of capital assets are necessary for achieving sustainable livelihoods, fisheries and communities.

*Keywords:* small boat fishery, community, recruitment, neoliberal, sustainable livelihoods approach, fisheries management

## **List of Abbreviations**

AGAP: Atlantic Groundfish Adjustment Program

CBCM: Community-based co-management

DFID: Department for International Development

DFO: Department of Fisheries and Oceans

EA: Enterprise Allocation

EEZ: Exclusive Economic Zone

EI: Employment Insurance

FRCC: Fisheries Research and Conservation Council

FSRS: Fishermen and Scientists Research Society

FSWEP: Federal Student Work Experience Program

GCIFA: Guysborough County Inshore Fishermen's Association

GRT: Gross Registered Tonnes

ICNAF: International Convention for the Northwest Atlantic Fisheries

IQ: Individual Quota

ITQ: Individual Transferable Quota

JPA: Joint Project Agreement

NAFO: Northwest Atlantic Fisheries Organization

NCARP: Northern Cod Adjustment and Recovery Program

NSP: National Sea Products

PIIFCAF: Policy for Preserving the Independence of the Inshore Fleet

SLA: Sustainable Livelihoods Approach

SRSF: Social Research for Sustainable Fisheries

TAC: Total Allowable Catch

TAGS: The Atlantic Groundfish Strategy

YES: Youth Employment Strategy



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## Chapter I – Introduction

The dominant neoliberal political economy that has governed the fisheries management system in North America for over one hundred years challenges the very existence of the small-boat marine harvester. Neoliberal management policies are based on erroneous assumptions about human behaviour, and they lack due consideration for the social and cultural qualities that underwrite family and community in small-boat dependent fisheries communities (Thiessen and Davis, 1988; Davis and Wagner, 2006; Davis and Ruddle, 2012; McCay and Jentoft, 1998; St. Martin, 2006; Symes and Phillipson, 2009).

One particular outcome of neoliberal policies on small-boat dependent fisheries communities is that the traditional processes of recruitment are challenged and largely disabled. Fewer young people from fishing communities have the ability to fish for a living, as fishing as a viable livelihood option diminishes. Symes and Phillipson (2009) suggest that these fishing communities were once bound together by social networks with a common dependence on fishing, but now they are being replaced by “dispersed occupational communities embedded in a more diverse economy” (p. 2). The social and family unit is disrupted by this process, which ultimately affects the sustainability and dynamism of small-boat dependent fisheries communities.

Through adopting a more socially-oriented analytical framework such as the Sustainable Livelihoods Approach (SLA), fisheries managers could develop policies that are sensitive to the value of social and cultural capital in small-boat dependent fisheries communities. Traditional patterns of recruitment are based on networks of kith and kin relations which stimulate the growth of social and human capital. It has been argued that human and social capital are critical

components to a sustainable livelihood (Scoones, 1998; Allison and Ellis, 2001; Berkes, 2003; Olsson, Folke, and Berkes, 2004; Ostrom, 2005; Pretty, 2003; Pretty and Smith, 2004), yet the dominant political economy's emphasis on financial capital and economic rationality make little room for them (Pretty and Smith, 2004; Allison and Ellis, 2001). What is needed is a new frame of reference within which to understand and enable the political economy as not defined solely by the neoliberal capitalist wealth accumulation model, but one informed by the merits of community structure and the requirements for sustainable livelihoods.

A discussion of the dilemma of recruitment invariably involves a debate over “analytical paradigms and value systems” (Copes, 1997 as cited in Wingard, 2000, p. 51). Indeed, the current fisheries management system is framed by neoliberal economic theory and places principal emphasis on economic rationality, efficiency, and profitability. The rival position is that which concerns the social impacts of allocation management, and it is interested in understanding and highlighting the social and socio-economic well-being of those being managed (Copes and Charles, 2004; McCay, 2004; Péreau, Doyen, Little, Thébaud, 2012; Sumaila, 2010). Needless to say, these positions occupy opposing paradigms and value systems. Their continued deliberation will hopefully lead to the development of new frames of reference for fisheries management that better reflect empirical realities. A discussion of the dilemma of recruitment is just one part of this debate.

The purpose of this study is to investigate traditional recruitment as a critical factor in the sustainability and dynamism of small-boat dependent fisheries communities. The research focuses on how these communities in Nova Scotia have changed over time in response to the dominant neoliberal political economy and its resource management framework, and the effects of this change on traditional patterns of recruitment. Social surveys conducted over the past

thirty years reveal the rich social fabric of small-boat fishing families, and the kinship networks that support the small-boat dependent fisheries community. As Symes and Phillipson (2009) state, “...fishing communities and their nexus of social relations describe the true social identity of the fishing industry” (p. 2). These social relations express informal labour systems that are hidden from formal statistics, but without which, the family unit and community would not survive (Symes and Phillipson, 2009).

The Sustainable Livelihoods Approach (SLA) is adopted in this research as a framework through which to understand the value of these social relations, and the social and human capital present in them. The SLA is a set of principles and a related framework that represents a different way to assess how communities, households and individuals construct their livelihoods. It is fundamentally focused on people, either at the individual, household or community level, and the assets that they hold. Its purpose is to examine the interactions between people and their assets on the one hand and the activities they construct on the other. The SLA also examines the policies, institutions and processes, as well as external factors, as determinants of how people acquire assets and choose activities. (Allison and Ellis, 2001; Scoones, 1998; Carney, 1998). It is recommended that fisheries managers incorporate such a socially-oriented framework to develop fisheries policies that recognize and support the informal processes, such as traditional recruitment, that sustain fishing communities and viable livelihoods.

This paper opens with a brief description of the research design and methodology used. This is followed by a review of key concepts and a concise examination of the relevant literature. Next, the context is set with a review of some of the major events in fisheries management that have shaped the political economy of the fishery today. Following this chapter is an in-depth examination of the small-boat dependent fisheries community, using small case studies and life

history and social survey data to illustrate the kinship embeddedness in the fishery. Next is a discussion regarding how the dominant political economy challenges kinship networks within small-boat dependent fisheries communities. This section also explores how the sustainable livelihoods approach might be used to account for these social and familial qualities underwriting family and community in coastal settings. Finally, the paper ends with management recommendations regarding approaches offering considerable prospect for achieving viable and sustainable livelihoods within Nova Scotian small boat fishing communities.

## Chapter II - Research Design and Methodology

The research strategy involved in this project includes a secondary literature review, secondary analysis of data gathered through several social surveys and interviews, and a review of data from Statistics Canada and the Department of Fisheries and Oceans. This strategy provides adequate data through which to approach the research question, and to examine the connection between traditional recruitment in the Nova Scotian small-boat fishery and sustainable coastal communities.

The research presented here explores the relationship between traditional recruitment and sustainable communities. In order to examine this relationship, the key concepts outlined in the literature review are applied to the Nova Scotia data in order to answer the research questions. For example, attributes of neoliberal economic theory will help to demonstrate the neoliberal assumptions and content of fisheries management policies and their impact on the small-boat fishery in Nova Scotia. Likewise, the sustainable livelihoods approach will provide a prospective framework to help understand the key role social and human capital play in determining community sustainability.

The context of a changing political climate in Nova Scotia's small-boat dependent fisheries communities is presented through analysis of data from annual statistical reviews from the Department of Fisheries and Oceans and census data from Statistics Canada. Data on catch landings and the number of marine harvesters, licenses and vessels were retrieved from annual statistical reviews from DFO. In most cases, data was selected for every other year available since 1977. Moreover, DFO publications such as the *Socio-Economic Profile of Canada's Fishing Industry Labour Force 1994–2006* provide relevant data regarding employment income

for small-boat marine harvesters. Additionally, census records from Statistics Canada provide data regarding population decline, out-migration, education and employment in the fishery. These datasets were particularly important for setting the context within which to analyze the primary data.

The data used in the secondary data analysis comes from three primary datasets. Survey results from all three datasets were analyzed using the Statistical Package for the Social Sciences (SPSS) software. All three datasets include responses to a selection of recruitment and community attachment related questions which were all identically worded. As such, this allows for a comparative study of the response distributions over time. Such attributes enable study of similarities and differences, as well as the potential for isolating notable changes regarding community and livelihood attachment and the small boat marine harvester recruitment.

The first data set was collected in 1988 by Drs. Anthony Davis and Victor Thiessen. This dataset was gathered through interviews of a sample of small boat Captains, their wives, their non-kin related crew members and their crew members' wives. These interviews were completed with a sample covering all of Atlantic Coast Nova Scotia, from Neil's Harbour/Whitehead in Cape Breton to Little Harbour and Westport on Digby Neck. There were a total of 125 Captain-wife and 44 crew-wife participants in this study. Included among the data gathered was information regarding life histories in fishing, community attachment and livelihood satisfaction.

The second dataset was collected in 2001 in Chedabucto Bay as part of the Social Research for Sustainable Fisheries project. Its objectives were to document thoroughly characteristics of family and fishing histories, fishing practices and local knowledge about the fishing grounds. The Chedabucto Bay survey was conducted during May and June 2001. All 211 lobster license holders were surveyed in the first phase of this study within a region extending



from St. Peter's, Richmond County through to Marie Joseph in Halifax County. Surveys were conducted by telephone, and there was a 75.4% (159) participation rate. The survey gathered basic context information respecting participants' fishing activities, fishing capacity, community attachment, livelihood attachment, and social background, employing several questions whose wordings were identical to those developed for and used in the 1988 study. Additional information was gathered about family and life history experience within the fisheries through extensive face-to-face interviews with peer-nominated 'local ecological knowledge' experts. Some of this information has been employed here as a means to illustrate core qualities of kith and kin related recruitment and learning.

The 2007 dataset was generated from a collaborative study by DFO and the Fishermen and Scientists Research Society (FSRS). The primary objectives of this study were to map marine harvesters' knowledge of the distribution, seasonal changes in abundance, and life history and habitat associations of fish, invertebrates, birds, mammals and macrophytes, as well as to identify areas considered to be ecologically and biologically significant. It focused on nine sites along Nova Scotia's Atlantic coast, ranging from Cape Sable to Cape North. The first phase of this study employed a telephone survey of a random sample of license holders wherein several questions adapted from the Chedabucto Bay survey research were asked regarding various aspects of community and livelihood attachment.

In addition to these data sources, this research has also included a review of vessel and license prices over a span of nearly thirty years. To illustrate the fluctuation in prices, a study was conducted that used a local Nova Scotian fishing industry newspaper called the *Sou'wester*. In this exercise, the classifieds section from the September issue from every other year since 1984 up to 2010 was consulted. For every year used, the average listed price for a vessel under

45 feet, a vessel under 45 feet and a license, and a lobster license was calculated. In the instance where there was only one appropriate listing and an average price was not available, the one listed price is used. In some instances another monthly issue had to be consulted. The prices are listed in Appendix C, Table 1.0 in both real and constant dollars from 1984.

There are obvious limitations to the research approach adopted here that should be noted. Points are made based on connections and correlations, but are considered to be nonetheless warranted based upon the attributes and trends apparent in the complete set of evidence presented. In addition, some of the suggestions made in the research, for example, the graph depicting changes in vessel prices over the years, are meant to serve only as an additional illustration of factors impacting recruitment. As such, these data are not meant to be taken as a representative or complete presentation of the key economic factor of cost as it may be impacting recruitment and entry into the small boat fishery.

## **Chapter III - Key Concepts and Selected Literature Review**

For the purposes of data collection and analysis, the scope of this research is limited to the Nova Scotian Atlantic seaboard coastal communities within the DFO Maritimes Region. This area comprises ten counties, stretching from the eastern part of Cape Breton Island along the Eastern Shore to the southern tip of Nova Scotia. A map outlining the counties considered in this research is provided in Appendix A. The focus of the research is on the small-boat dependent fisheries communities within these counties, which are characterized by the small-boat marine harvester operating in fishing vessels with a length of 44'11" or less. Vessels of this size are highly unlikely to be fishing for wealth accumulation, as the size of the vessel does not permit this. Also, current DFO statistic classifications include the 44'11" category, thus enabling accurate statistical representation of this group.

### *3.1 Recruitment*

The key concepts associated with and informing this research include recruitment, neoliberal policies, social and human capital, and the sustainable livelihoods approach (SLA). The term 'recruitment' is generally understood to mean enlist, enrol, or obtain and strengthen. In the context of fisheries, it is most commonly understood to mean the number of new young fish that enter a population in a given time (Myers, 1995). This contrasts with recruitment in the sociological sense of attracting and retaining new participants in a livelihood activity, whether it is fishing, farming or hunting. In this research, the term adopts the notion of 'traditional', where it refers to a specific pattern of recruitment that is governed by a network of kith and kin relations wherein entering the fishery is contingent upon one's relations in the community. As such, the 'dilemma of recruitment' refers to the decline in the amount of young people from

small-boat dependent fisheries communities in Nova Scotia choosing fishing as a livelihood option. This problem is situated in the context of how the current political economy challenges the traditional pattern of recruitment.

### *3.2 Neoliberal policies*

Neoliberal fisheries management policies refer to those policies implemented in the 1970s that were heavily influenced by neoliberal economic theory. Neoliberalism is a political and economic philosophy with many interpretations and generalizations. Economically, it is generally understood as a way to deregulate economic transactions and privatize state-owned enterprises and services (Jessop, 2002). In a political sense, it encourages more market-driven forms of governance (Jessop, 2002).

Within the context of resource management, the general assumption behind neoliberal economic theory is that the best way to optimize the economic activities of a nation is to privatize the commons by making anything of value a marketable commodity that can be privately owned, and to leave it up to individuals as self-interested owners of such property, to make rational economic choices that are guided by market forces (Mansfield, 2004). As such, in resource management systems, the market becomes the central form of governance. The problem with neoliberal management systems, however, is that they “lack any semblance of appreciation for the cultural, historical, or social characteristics of the “real world”” (Davis and Ruddle, 2012, p. 246). Additionally, this model is based upon the motive of individual wealth accumulation through competitive efficiencies. This premise directly contrasts with the notion of ‘community’ and challenges the viability of informal kinship networks upon which the small-boat fishery is built.

### *3.3 The Sustainable Livelihoods Approach*

The SLA was originally created for use within the international development context, and was commonly applied to rural, poor agro-economies. Since its adoption in that regard, its application has grown to include community development and natural resource management, including fisheries management, in developing and developed societies (Allison and Horemans, 2006). The most comprehensive model of the SLA was developed by the Department for International Development (DFID); however, it is important to note that empirical application of the SLA (or any theoretical model for that matter) must avoid adherence to rigid model structures, as rarely does a theoretical model account for all the complexities of reality (Hinshelwood, 2003). With that in mind, the model used herein is from DFID, and it is applied to small-boat dependent fisheries communities in Nova Scotia with the understanding that it is not a ‘one size fits all’ prototype, nor a final solution to the dilemma of recruitment. The SLA in this context should be considered as a tool for understanding the need for a paradigm shift in fisheries management. The outcomes of its application will hopefully influence a change in approach to fisheries management policies, from one that is influenced by neoliberalism, to one more qualified by the social and cultural complexities on the ground.

The SLA framework as illustrated in Appendix B is a modified diagram of the SLA from DFID as presented by Scoones (1998). The diagram indicates all the assets/resources, processes and forces that influence activities which determine livelihood choices. There are of course, contexts, conditions and trends that influence the assets and resources that an individual, household or community can acquire. These environmental, political, economic and social conditions are often uncontrollable by the individual, yet play a large part in determining their capital assets or, in other words, their vulnerability (Allison and Horemans, 2006).

The application of the SLA framework is based on a series of principles that set it apart from the neoliberal economic theory of measuring livelihood success (see Appendix B). The overarching theme of the SLA is people-focused, which makes it an excellent candidate for a fisheries management framework, as fisheries management strategies essentially manage people and their actions, not the resource (fish). The first principle of the SLA as defined by Allison and Horemans (2006) is putting people's social and economic activities at the centre of the analysis. In terms of small-boat marine harvesters, this requires understanding "more about people than just their fishing effort" (p. 758). In terms of recruitment, it requires understanding what people value in a livelihood.

The second core principle is interdisciplinary management. That is, understanding that assessing options for fisheries management requires not only consulting with fisheries economists and biologists, but acknowledging that issues such as education, political representation, social and health services all play into the effectiveness of a fisheries management plan – indeed, it really is community development planning that needs to occur. Similarly, the third principle encourages considering the links between local and national processes and issues. For example, it could help in considering how the adoption of a new fisheries policy at the international level will affect resource allocation in a community-based management initiative at the local level. (Ashley and Carney, 1999).

The SLA is also based on the principles of being participatory and responsive to empirical realities that require adaptation and flexibility (Carney, 1998). It reinforces building on people's individual strengths and it is based on the principle of taking a broad view of sustainability – one which is extended beyond economic and ecological considerations to include social and cultural sustainability (Scoones, 1998). This principle is implemented through the

SLA's recognition of human and social capital in the group of capital assets that an individual/group can acquire. Social capital refers to the kith and kinship networks and peer-groups that people can access, while human capital includes people's health, skills, knowledge and capabilities (Allison and Horemans, 2006; Macken-Walsh, 2012). The consideration of these more qualitative assets gives the SLA the ability to critique, challenge and change neoliberal management systems.

### *3.4 The Dilemma of Recruitment*

The shortcomings of the neoliberal economic paradigm have been acknowledged by many researchers in the social sciences. For example, Degnbol et al. (2006) assert that fisheries management has been characterized by quick and technical solutions that ultimately neglect "empirical reality...[and] the social and cultural context within which the fishery operates" (534). Similarly, Reed, Courtney, Urquhart, and Ross (2013) discuss how resource conservation policies have come at a "substantial social cost" for fishing communities (p. 62). They also identify that there is little knowledge and conceptual understanding of this social cost on fishing communities.

Davis and Ruddle (2012) acknowledge the role that social science can have filling in this knowledge gap, as they state that "cultural characteristics, social relationships, labour supply, and marginalization, are of critical, if largely still unappreciated, importance to designing and implementing fisheries policies" (p. 251). This research hopes to contribute to this literature base by offering a greater understanding of how socially-oriented fisheries policies could benefit the small-boat dependent fisheries community.

How neoliberal policies have affected communities, especially small-boat dependent fisheries communities in Nova Scotia, has also been extensively documented. Davis (2004)

claims that these policies “reduce participation and consolidate fishing effort in fewer fishing ports” (p. 8). He also asserts that “access and allocation policies have created an economic crisis wherein most cannot afford...fishing licenses and equipment” (Davis and Wagner, 2006, p. 484). When fishing is no longer a viable livelihood option in small-boat dependent fisheries communities, a common option is to migrate elsewhere. This out-migration of youth has been documented by McGaw (2006), with particular reference to the situation faced by non-native communities after the Marshall Decision and the subsequent license buy-back program<sup>1</sup>. This research will contribute to these discourses by closely examining fishing families in small-boat dependent fisheries communities in Nova Scotia.

The connection between kinship embeddedness in the small-boat fishery and traditional patterns of recruitment has been documented by many social science researchers (Davis, 2004; Davis and Ruddle, 2012; Davis and Wagner, 2006; Macken-Walsh, 2012; Clay and Olsen, 2006). Traditional fishing networks of kith and kin relations are recognized as representing “not only an income-generating activity but a way of life where particular forms of social and cultural capital surround effective fishing practices, local knowledge, and fishing identity” (Macken-Walsh, 2012, p. 201). In Nova Scotia, familial relationships in the fishery can be traced back nine or ten generations, indicating that fishing is an important source of social and human capital in the province’s coastal communities (Davis and Thiessen, 1988).

The importance of securing social and human capital is confirmed by several researchers. Putnam (1993) states that social capital “facilitates coordination and cooperation for mutual benefit” (as cited in Bodin and Crona, 2008, p. 2764). Macken-Walsh (2012) discusses how

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<sup>1</sup> See page 30 for more detail on the Marshall Decision.



traditional fishing practices and kinship networks in small-scale European fisheries build social capital in the form of local knowledge systems, collective action and local cultural identity.

It is increasingly recognized that the sustainability of a community is not only determined by financial capital, but by social and human capital as well. This notion is captured by literature that acknowledges the value of social and human capital by perceiving fisheries communities as social-ecological systems. For example, Berkes (2003) advocates for “the need to manage environment and resource systems for resilience, rather than for products and commodities” (Berkes, 2003, p. 7). Addressing community resilience and sustainability involves going “beyond fishery regulations and... encompass[ing] a more holistic approach to fishing communities (Jentoft, 2000, p. 58).

Strategies that account for human and social capital need to “engage the knowledge of resource users and their institutions of self-governance...[and] redefine resource to mean not commodity, but elements of an ecosystem that supports essential processes as well as human need” (Berkes, 2003, p. 7). This literature encourages a shift toward a more socially-oriented style of fisheries management. By working through the sustainable livelihoods approach (SLA) with regard to the Nova Scotian small-boat fishery, this research hopes to be both theoretically and practically grounded, and illustrate the benefit of adopting a more socially-oriented fisheries management plan.

## Chapter IV - Fisheries Management Policies

The customary projection of the first world is framed by the dominant neoliberal economic theory; that is, it is considered as “homogenously capitalist and populated by utility maximizing individuals and corporations” (St. Martin, 2006, p. 170). This quality is expressed as if simply a factual representation of reality. Processes such as community and culture are counter-intuitive to this image, and as such, have remained unaccounted for, especially in the context of fisheries. In fisheries management discourses, community and culture are considered as places and values, and not functioning elements of the economic dynamic of fisheries (St. Martin, 2006).

Since the colonization of Atlantic Canada, fishing has been the backbone of Nova Scotian coastal communities’ social, cultural, political and economic organization. This was the era of mercantile capitalism; fish production has always been about producing commodities for exchange within international market systems (*e.g.*, salt fish as food for West Indian plantation slaves). So, commodity values, prices and the political economy determining these within capitalist class systems (mercantile/industrial) are critical to understanding what developed and goes on within coastal communities and family-centred marine harvesting systems of production (Innis, 1940).

The valuable resources in the Northwest Atlantic have for long attracted foreign and national industrial-scale harvesting and processing enterprises. Effort in the fishery grew throughout changing socio- economic and political conditions. It is commonly held that the number of marine harvesters actively fishing during these times caused what has come to be known as the ‘tragedy of the commons’. However, the profit maximization motive of

capitalist/industrial enterprises created this problem. These entities fostered a competitive, hostile atmosphere that was mistakenly attributed to arising from some inherent non-owned feature of the targeted resource in a mythical condition of ‘open access’ (Davis and Thiessen, 1988).

Open access has never really existed, as those who fished were only those with the knowledge, resources and technologies to harvest marine resources successfully. Additionally, adjacency to resource harvesting grounds establishes a somewhat customary basis for access and exclusivity (Davis and Wagner, 2006). Ergo, the ‘tragedy of the commons’ outcome was created by features of the political economy, coupled with contextual considerations. Indeed, as Barrett and Davis (1984) claim,

For small-boat marine harvesters with deep historical-familial roots in their communities, making a living neither requires nor features the hostile and chaotic behaviour predicted by the common property perspective...hostilities only emerge when outsiders, such as fisheries officers threaten the fishermen’s livelihood, or violate local rules.” (p.128)

Nonetheless, government began to control who fished, when to fish, and how to fish through various management measures. Policies were based in liberal ideas of economic rationality. They were designed to maximize the economic return for the dominant players in the fishery while at the same time protecting the resource for future exploitation from the destructive, over-harvesting activities of the dominant players.

Since the modernization and industrialization of the fishery began, policies were designed with an economic rationality that fails to recognize the complex social components of small-boat marine harvesters’ livelihoods. Over time there have been some policies that recognize the

vulnerability of the small-boat marine harvester and are supposedly intended to protect their interests. Some examples include the fleet separation and owner-operator policies and the *Policy for Preserving the Independence of the Inshore Fleet*. Understanding what these and other policies are and the assumptions behind their formation and implementation are keys to understanding how they have affected small-boat dependent coastal communities, and how they impact traditional recruitment. This section includes a concise presentation and discussion of a timeline of major events and developments that have shaped the contemporary Atlantic Canadian fishery. Following is an overview of the policies that currently guide the fishery and how they affect recruitment and coastal communities.

#### *4.1 The 19th and 20th Centuries*

The late 19<sup>th</sup> century was marked by new technologies that expanded the fishery to include steel vessels, larger nets and processing and canning technologies (Parsons, 1993). Into the 20<sup>th</sup> century industrial interests began to expand in the Atlantic fishery, but policies reflected an attentiveness to the welfare of local small-boat marine harvesters. For example, small boat marine harvesters protested the emergence of the otter trawl, which occupied traditionally inshore fishing grounds. Their outrage led to the McLean Commission in 1927 which resulted in the prohibition of steam trawlers from landing fish in Canadian ports, a moratorium on adding new trawlers to the existing fleet, and the imposition of a tax on all Canadian and foreign trawlers (Apostle and Barrett, 1992). Due to these restrictions, the number of trawlers diminished from more than 200 in 1930 to 3 in 1939 (Blake, 2000). Conversely, the expansion of small-boat marine harvesters was encouraged at this time via programs such as the Fisherman's Loan Board, created in 1936 which assisted in the creation of vessels in the small-boat fleet (Apostle and Barrett, 1992).

#### 4.2 World War II and the post-war world

The onset of World War II changed the direction of fisheries development and the associated policies. During the war, the demand for fish increased. As a result, the restrictions on trawling were lifted (Parsons, 1993). As transportation infrastructure developed and international markets opened, the push for modernizing the fishery began. In 1944 the *Report on the Atlantic Sea Fishery* by Stewart Bates called for the expansion and industrialization of the offshore fleet and the modernization of the small-boat fleet (Parsons, 1993). More vessels and processing plants were built with the help of government assistance programs such as the 1942 Fishing Vessel Assistance Program which provided subsidies for fleet expansion. New vessel designs also emerged, such as the Cape Island long line design, stern trawlers, draggers and purse seiners (Apostle and Barrett, 1992). The growth in the industry is also evident in the number of processing plants that increased from 168 in 1944, to 357 in 1950, an increase of almost 1.5 times (see Figure 4.0).

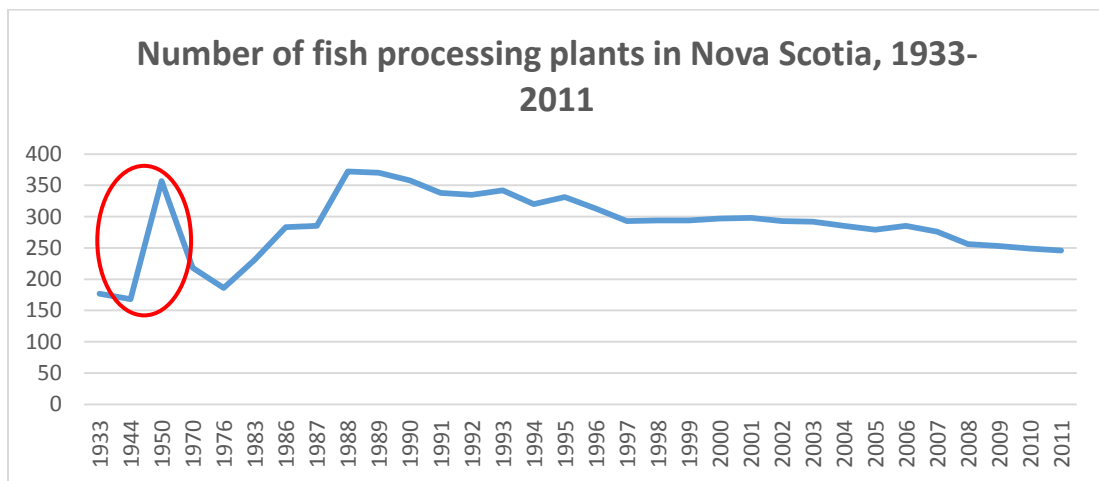


Figure 4.0 Number of fish processing plants in Nova Scotia, 1933-2011. (Nova Scotia Department of Fisheries and Aquaculture)

After the war ended in 1945 the industry continued to grow, mainly due to the availability of advanced technology such as Loran-C, radar, hydraulic deck machinery, auto pilot and UHF/CB radios, and even the development of the factory-freezer trawler in 1955 (Apostle and Barrett, 1992; Blake, 2000). This era was also marked by the expansion of the US frozen fish market, which led to the consolidation of small fishing companies and processing facilities into larger plants that could capitalize upon these market opportunities (Apostle and Barrett, 1992).<sup>2</sup> Immediately following a sharp increase from 1944-1950, processing facilities declined by almost half from 1950-1976, from 357 to 176 (see Figure 4.0), as many of the smaller plants lacked the capital to maintain pace with the rapidly advancing fleet which required larger plants with new technologies like filleting and freezing (Davis, in Apostle and Barrett, 1992).

Expansion was not only occurring in the industrial sector. The post-war encouragement of economic expansion had influenced the small-boat fishery, and it was flooded with government subsidies and support. From 1947-1955 programs like the Fisheries Price Support Board, the Fishermen's Indemnity Plan and the Fisheries Improvement Loans Act were adopted to assist small-boat marine harvesters during market downturns and with insurance and credit (Parsons, 1993). Additionally, unemployment insurance coverage was extended to self-employed marine harvesters by 1957 (Parsons, 1993). This was done to alleviate abject poverty in an industry run on a patron-client and credit/indebtedness basis, where harvesters were paid landed prices determined solely by buyers in a political-economic context of extreme exploitation/value appropriation. The Fisheries Loan Board also extended subsidies to vessels less than 35 feet and under 25 gross registered tons (GRT) from 1964-1965, which resulted in the addition of more vessels to the small-boat fishery (Apostle and Barrett, 1992).

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<sup>2</sup> Indeed, by 1945, some of the major local companies in Nova Scotia merged to form National Sea Products (NSP) which lent significantly to the expansion of the offshore trawler fishery (Apostle, Barrett and Barber, 1992).

### *4.3 The 1960s and 1970s: Competition on the sea*

Up until 1977, fishing effort by national and foreign fleets expanded in the Northwest Atlantic with minimal regulation. One of the few major efforts at regulation was the creation of the International Convention for the Northwest Atlantic Fisheries (ICNAF) in 1951 (replaced by the Northwest Atlantic Fisheries Organization [NAFO] in 1980) (Blake, 2000). Arising out of concern from both Canada and the US over fish stocks in the Northwest Atlantic, ICNAF began to regulate fishing effort through input controls such as mesh size, and calculating total allowable catch (TAC) through the maximum sustainable yield (MSY) methodology (Parsons, 1993). These regulations were timely, as the 1960s were plagued by foreign dominance in the Northwest Atlantic. Soviet effort had increased 4.5 times from 1960-1965 while Canadian effort only increased by six per cent; by 1968, foreign fleets were taking eighty per cent of the total catch in the Northwest Atlantic (Blake, 2000).

Canada's response to the growing foreign fleet was to expand its own fleet in an attempt to push out the foreign vessels (Apostle and Barrett, 1992). From 1959-1968 the number of Canadian offshore vessels over 50 tonnes expanded by 1.5 times, and the trawler fleet in Nova Scotia grew from five in 1950 to 37 in 1962, a seven fold increase. For instance, National Sea Products operated 51 trawlers in 1965 which at the time was the largest fleet in North America; by 1976, 61 trawlers over 90 feet long were fishing out of Nova Scotia ports – and 90 per cent of these were owned by corporations (Apostle and Barrett, 1992). In this time of change in the political economy, the fishery came to be represented as modern, economic and industrial.

Ultimately, the post-war industrial scale harvesting fleet expansion led to the twin problem of overfishing and overcapacity. The total catch dropped from 2.8 million tons in 1965 to 1.6 million tons in 1974 (Parsons, 1993). One particular response to this situation was the

implementation of a ground fish price subsidy as awarded per pound landed, which was disproportionately beneficial for the industrial corporate sector because they were landing the most fish.<sup>3</sup> At this time, the Canadian government became increasingly concerned with who could fish where, when and how (Parsons, 1993). In 1967 limited-entry licensing was introduced in the lobster fishery, in 1973 it was extended to offshore scallop and the herring purse seine fishery, and from 1974-1980 it was gradually introduced into the groundfish fleet (Parsons, 1993).

It was soon recognized that limited entry licensing as an input control was not addressing the root cause of the so-called common fisheries problem (Apostle and Barrett, 1992). Although, it was actively disengaging many crew members from the possibility of ever owning a license, as licenses became reserved for those who could afford their inflated price, or they became intended for family inheritance (Thiessen and Davis, 1988). Although the number of vessels was restricted, they were still able to compete with one another through over-capitalization and an increase in effort (Grafton and Lane, 1998; Apostle, McKay and Mikalsen, 2002). As such, more attention was paid to how market-based measures could better manage the fishery, and in 1973 the concept of individual quotas (IQs) was introduced to the fishery, and finally adopted in the groundfish fleet in 1991 (Apostle, McKay and Mikalsen, 2002).

#### *4.4 Canada's Exclusive Economic Zone (EEZ)*

The 1977 declaration of the EEZ in Canada significantly reduced the number of foreign vessels in the Northwest Atlantic, and the Atlantic fishery was eager to seize the opportunity for expansion. The post-declaration of the EEZ era was marked by federal-provincial quarrels over jurisdiction of the fishery; the Atlantic Provinces sought continued fleet expansion, but the

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<sup>3</sup> Data before 1977 is not available, but Table 1.2 in Appendix C illustrates landings by size of vessel for the DFO Maritimes Region (Nova Scotia) from 1977-2001.



federal government was more conservative (Parsons, 1993). Following advice from ICNAF scientists, the federal government implemented new regulations outlined in the 1976 *Policy for Canada's Commercial Fisheries* (Parsons, 1993; DFO, 2010). Regardless of these increased federal restrictions, between 1974 and 1981 there was an eight per cent increase in the number of marine harvesters in Nova Scotia (see Figure 5.6).

In 1981, weak US markets and rising interest rates resulted in some of the largest processing companies, including NSP, claiming bankruptcy (Rose, 2007). The failure of these companies had wide-ranging effects on the fishery, so the government commissioned a report to examine the socioeconomic causes and implications of this downturn. In 1982, the *Task Force on Atlantic Fisheries*, also known as the *Kirby Report*, was released. The report assumed that there was an abundance of resources, and the problem was how to divide it among the corporate and small-boat sectors (Rose, 2007). It included several recommendations to maximize the economic efficiency of the fishery, such as adopting Enterprise Allocations (EA) for the offshore groundfish fishery, and introducing sector management policies and IQs to the inshore groundfish fleet (DFO, 2010). The report also characterized the small-boat fishery as the 'social' fishery, in contrast with the 'economic' industrial fishery. This was one of the most obvious assertions from the state that their interests were not with small-boat marine harvesters, but with large corporate fleets.

The Task Force makes the erroneous assumption that the abject poverty found in many small-boat dependent fisheries communities at the time was captured in the adage of 'too many fishermen chasing too few fish' (Davis, 2004). However, as Davis and Kasdan (1984) noted, the small-boat sector was capable of economic efficiency, but their income was subject to the political processes of price determination and access to resources, which essentially favoured the

industrial corporate sector. One of the Task Force's primary recommendations was the implementation of individual quotas which, it recognized, would lead to the rationalization of the fishery by allowing those inefficient harvesters an exit strategy (through government-assisted license retirement programs) and those efficient harvesters the opportunity to be more prosperous. Barrett and Davis (1984) make a critical remark about this recommendation in that the "Task Force does not speculate either on the character of alternative employment in fisheries-dependent communities or on the consequences of inevitable outmigration for the socio-economic topography of coastal communities" (p. 130). Indeed, this is the very situation plaguing coastal communities today as the dilemma of recruitment.

#### *4.5 The 1980s: Restructuring*

In the 1980s some of the major processing companies that went bankrupt were salvaged by the government's *Atlantic Fisheries Restructuring Act*, which consolidated them into Fishery Products International (FPI) and National Sea Products (NSP), despite a major recommendation of the *Kirby Report* being the need to avoid reliance on government subsidies in the fishery (Parsons, 1993). This second round of consolidation coupled with the consequences of the 1992 groundfish moratorium influenced a steady decline of 33 per cent in the total number of processing plants in Nova Scotia from 372 in 1988 to 246 in 2011 (see Figure 4.0).

Fisheries management policies in the 1980s were prioritized into resource conservation and protection, economic viability, and minimizing social disruptions (Parsons, 1993). At this time the Nova Scotia Maritimes Region witnessed an increase in the number of license holders (registered commercial marine harvesters) by fifteen per cent from 11,780 in 1985 to 13,829 in 1988 (Figure 4.1) but a decline in the total number of vessels (Figures 4.2 and 4.3).

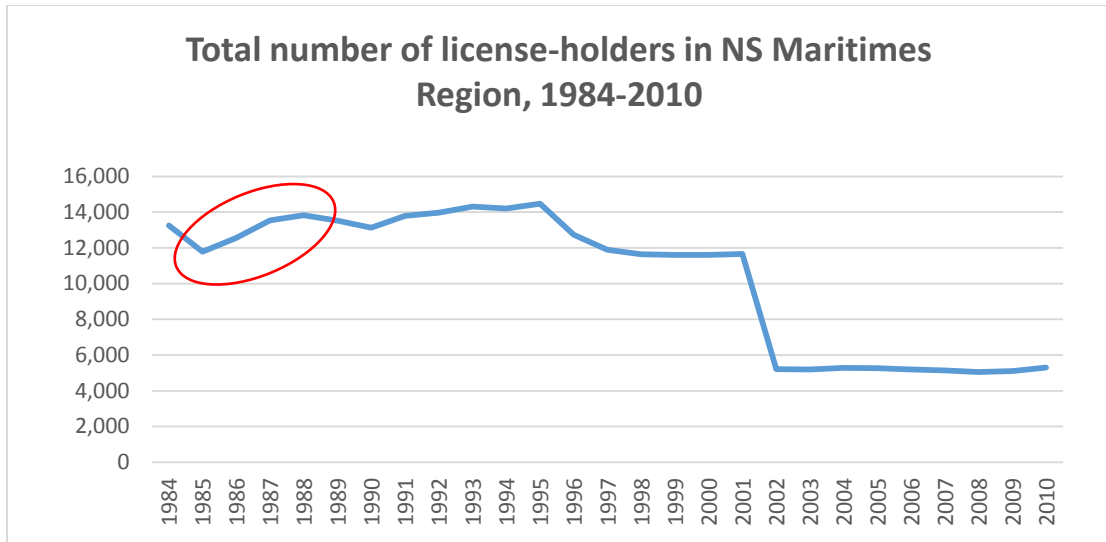


Figure 4.1 Total number of license-holders in the NS Maritimes Region, 1984-2010. Area in red indicates a 15% increase in license-holders from 1985-1988 (DFO, 2013).

Vessels under 45 feet declined by 16 per cent, from 6015 in 1984 to 5045 in 1988; vessels between 45 and 65 feet declined by eight percent from 234 in 1984 to 215 in 1988; vessels between 65 and 100 feet declined by 27 per cent from 56 in 1984 to 41 in 1988, and vessels over 100 feet declined by 15 per cent from 124 in 1984 to 106 in 1988. There was also a decline in the total number of commercial fishing licenses issued until 1987 (Figure 4.4) from 12 811 in 1983 to 9825 in 1987, a 23 per cent decline.

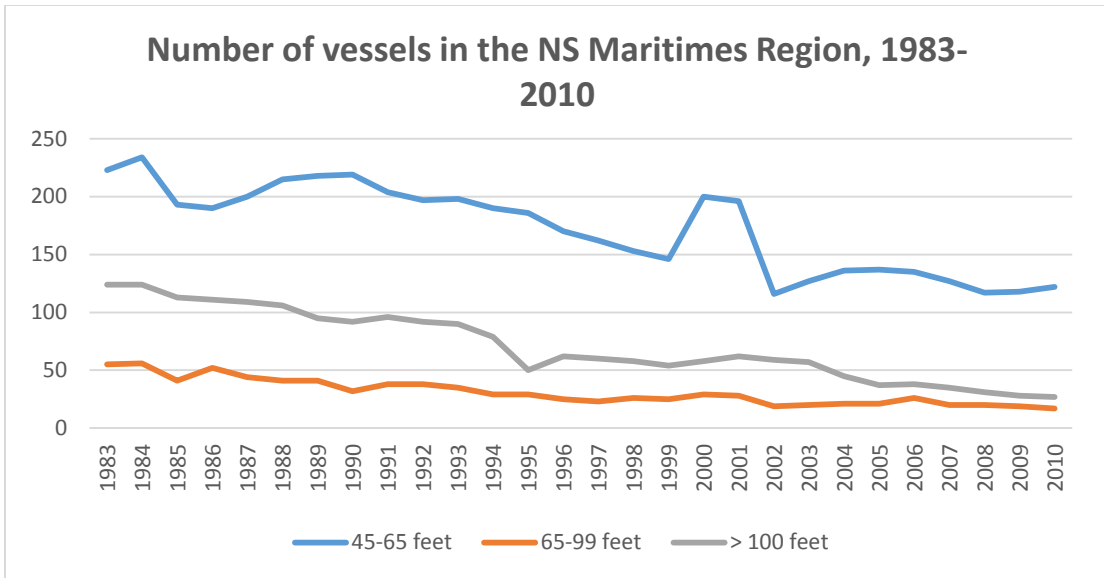


Figure 4.2 The number of vessels 45-65 feet, 65-100 feet and over 100 feet in the NS Maritimes Region, 1983-2010. (DFO, 2013).

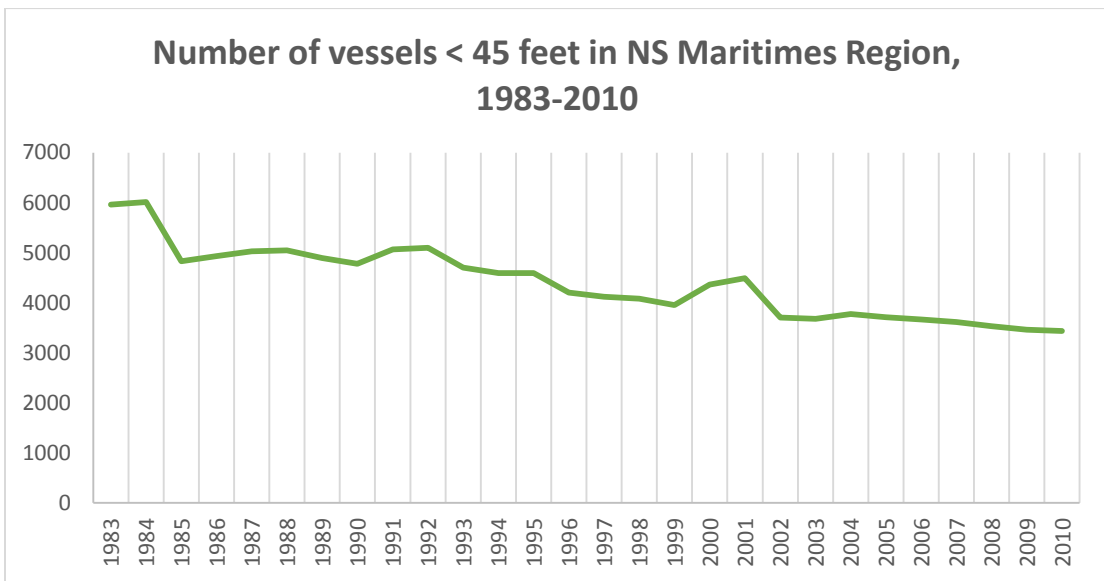


Figure 4.3 The number of vessels less than 45 feet in the NS Maritimes Region, 1983-2010. (DFO, 2013).

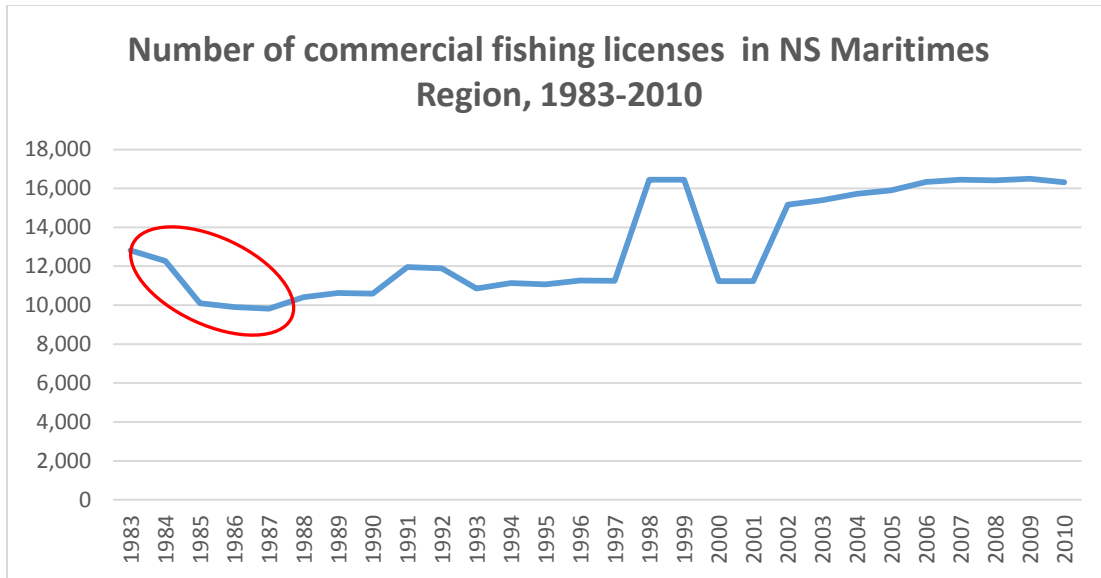


Figure 4.4 Total number of commercial fishing licenses in the NS Maritimes Region, 1983-2010. (DFO, 2013).

So, during the same time period there was a decline in the number of vessels and the number of licenses issued, but there was an increase in the number of registered license-holders. This could be explained by a transfer of licenses from those with multiple licenses to newly registered harvesters.

By 1989, assessments of groundfish, particularly cod stocks, illustrated a sharp downward trend. The declining number of fishing vessels and processing plants illustrates the economic rationality pushed within the industry; however, the number of fishing licenses and the number of license-holders increased until the mid-1990s. Eventually, the endangered stocks and the over-capacitated fleet influenced two major events that drastically affected the industry: the adoption of IQs in the groundfish fleet in 1991 (Apostle, McCay and Mikalsen, 2002) and the groundfish collapse in 1992.

#### 4.6 The 1990s: Control and collapse

The adoption of IQs in the groundfish fleet stimulated a concentration of fishing licenses in the hands of a few marine harvesters, as illustrated in Figure 4.5. After a 9 percent drop in the number of commercial licenses following the imposition of the cod moratorium in 1992, the number of licenses actually increased between 1995 and 1998 by 33 per cent, from 11,073 to 16,441; however, the number of license-holders declined by 20 per cent at this time from 11,465 to 14,647. This can be explained by the individual transferable quota (ITQ) system which permits the accumulation of licenses within a small group of marine harvesters, allowing them to pursue a profit maximization motive.

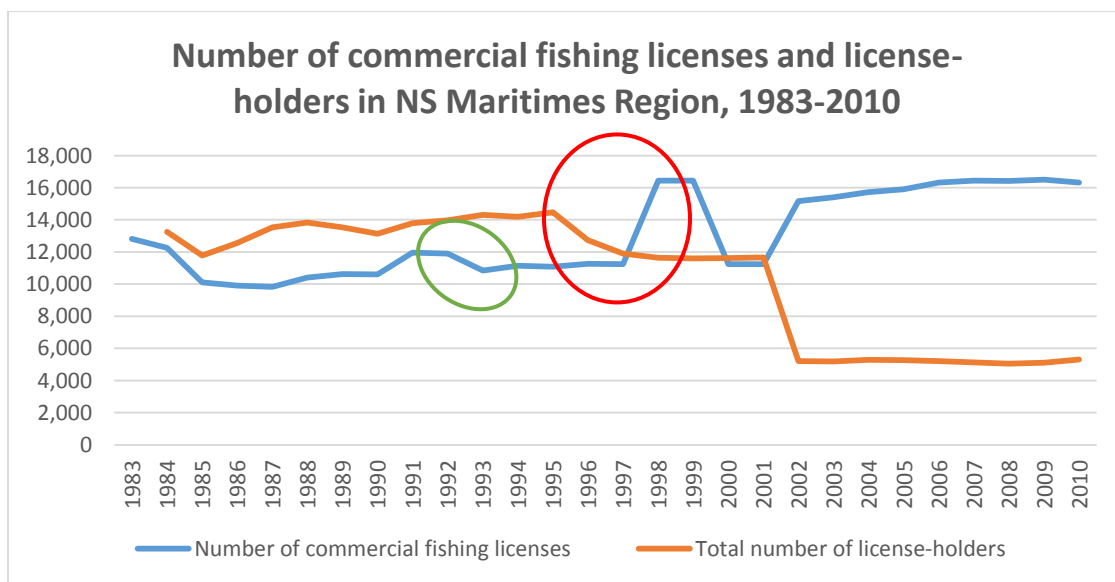


Figure 4.5 Number of commercial fishing licenses and license-holders in the NS Maritimes Region 1983-2010. Area in green indicates the 9% drop in licenses after the cod moratorium. Area in red indicates a 33% increase in licenses and a 20% decrease in license-holders in the same period. (DFO, 2013).

After the groundfish collapse tens of thousands of jobs were lost (Rose, 2007).

Immediately, the government initiated several adjustment programs including the Northern Cod Adjustment and Recovery Program (NCARP). NCARP was a two-year program intended to provide income assistance and retraining for work outside the fishery (Blake, 2000). It was

eventually replaced the next year by the Atlantic Groundfish Adjustment Program (AGAP) after more quota was reduced (Blake, 2000). Upon learning that the cod stocks would not recover anytime soon, the Atlantic Groundfish Strategy (TAGS) replaced both NCARP and AGAP (Blake, 2000). TAGS was intended to provide both income support and retraining, and had the objective of reducing the size of the fishery by half; however, the number of participants in the program was double that expected. As such, the budget could only provide for income support and training programs were cut (Blake, 2000). When TAGS ended, the government offered a last-chance voluntary license retirement program with government assistance, but it was not amenable to many of the small-boat marine harvesters, as giving up their license would have meant giving up their livelihood that was so heavily embedded in kinship.

The mid-1990s were marked by several, and sometimes violent, protests of fishermen at DFO offices. Thousands of marine harvesters lost their livelihoods and the assistance programs had failed to provide them with adequate support. In many cases they demanded larger quotas and access to the more lucrative shellfish fisheries (Blake, 2000). This was not often amenable, as a 1995 amendment to the *Fisheries Act* provided strict criteria for gaining access to and remaining in the industry (Blake, 2000). Additionally, the 1996 *Commercial Fisheries Licensing Policy for Eastern Canada* was adopted to update existing policies such as the owner operator, vessel replacement, foreign ownership and fleet separation policies and established the concepts of core and non-core enterprises (DFO, 2010). Many of these policies were intended to protect the small-boat fishery from the industrial fleet.

At the turn of the century, another event unfolded that had compelling consequences for the fishery. In 1999 a Supreme Court decision based on historical treaty rights, influenced the

creation of the Aboriginal commercial fishery. The Marshall Decision, as it came to be known, followed an earlier treaty-based ruling in the 1990s called the Sparrow Decision that confirmed the aboriginal right to fish for food and ceremonial purposes (Doyle-Bedwell and Cohen, 2001). The Marshall Decision extended aboriginal fishing rights to include fishing commercially to obtain a moderate livelihood. At the time DFO wanted all the native bands to follow DFO management policies; although not every band agreed to this (Wiber and Milley, 2007). Due to the limited entry licensing policy already in place, DFO had to purchase licenses from non-native marine harvesters to supply those native marine harvesters who did agree to the deal with licenses, vessels and gear (Wiber and Milley, 2007; Davis and Jentoft, 2001).

As there was no other way to obtain licenses for the native fishermen in the limited-entry fisheries, DFO offered “grossly inflated prices, in the mid hundreds of thousands of dollars” to non-native fishermen to buy their licenses and quota (Davis and Jentoft, 2001, p. 228). During the license-buy-back program, approximately 1400 non-native marine harvesters offered to sell more than 5000 licenses back to the federal government (CBC, 2004). This drop in the number of license-holders is illustrated in Figure 4.6. Individual sellers benefitted from this arrangement, but it “distorted local market values to the extent that accessing licenses and quotas is now well beyond the financial means of most non-aboriginals” (Davis and Jentoft, 2001, p. 228). This event is a pinnacle moment in fisheries management in Atlantic Canada that will continue to have far-reaching effects into the future, especially regarding the level of recruitment of non-native marine harvesters.



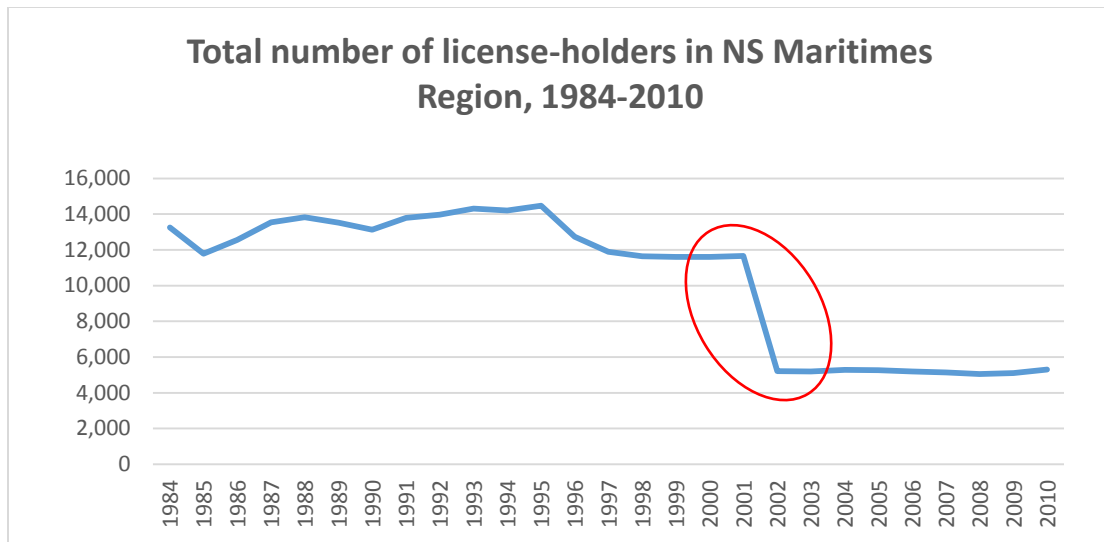


Figure 4.6 Total number of license-holders in NS Maritimes Region, 1984-2010. Area circled in red indicates the drop in licenses after the license buy-back program after the Marshall Decision (the licenses acquired by the native marine harvesters are not included in this DFO data). (DFO, 2013).

The introduction of the aboriginal fishery after tens of thousands of non-native marine harvesters lost their livelihoods was not well-received within the industry (Obeidi, Hipel and Kilgour, 2006). Conflict characterized the fishery, and as such, with the new millennium arrived a different approach to fisheries management which focused on the needs of the community. Community-based management, or community-based co-management (CBCM) was not a new framework, but it became a popular management strategy in the Atlantic Provinces at this time. It is designed to give the community more management and decision-making power in a bottom-up, rather than a top-down structure.

Fanning (2000) defines the concept as one that “...aspires to effect a compromise between government concern for efficient resource utilization and local concerns for equal opportunities, self-determination, and self-control (as cited in Gelcich, et al., 2006, p. 953). CBCM ideally involves communities at a high level of participation during the decision-making process and decentralizes government authority by downloading several responsibilities onto resource users’

organizations, such as fisheries associations. The predicted benefits of CBCM are increased cooperation amongst resource users, better compliance and environmental stewardship, and overall learning and empowerment (Jentoft, 2000).

The CBCM framework looks good on paper but in reality, it often fails to reach its potential, due to the vagueness of the concept. Some of the key ideas to consider include the meaning of ‘community’ and ‘user group’. The socioeconomic assumptions upon which CBCM is based are often ambiguous; as such it can fall short of its intentions. The government can interpret it as an opportunity to allow communities to manage coastal resources independently; and intentionally or unintentionally, governments can get away with contributing little to CBCM (Bradshaw, 2003). As Bradshaw (2003) states, “...acts of devolution likely reflect the desire of upper-tier governments to download responsibilities and costs to lower-tier governments given increasing fiscal pressures, without an explicit interest in improving resource management” (p. 139). Indeed, the CBCM framework in the Atlantic fishery was adopted at the same time that there were planned budget cuts to DFO of 25 per cent - however the budget cuts did not affect DFO’s decision-making power (Grafton and Lane, 1998).

Community has for so long been documented “as a constituent of the economic” and understood through anthropology (St. Martin, 2006, p. 183). Such is the case with community-based management initiatives, and the reason for CBCM’s limitations in challenging the dominant economic theory. Sustainable communities necessitate the valuation of social and human capital and the kinship networks within which they are situated. The neoliberal economic model does not allow for this valuation, as it is based on the valuation of presumed utility-maximizing individuals.

#### *4.7 Fisheries Management in the 21<sup>st</sup> Century*

These policies and events have shaped the current political economy that frames fisheries management policies today. Ultimately, the fishery is regulated by the *Fisheries Act* under the authority of the Minister of Fisheries and Oceans, but additional policies such as the 1976 *Policy for Canada's Commercial Fisheries*, the 1996 *Commercial Fisheries Licensing Policy for Eastern Canada* and the *Policy for Preserving the Independence of the Inshore Fleet in Canada's Atlantic Fisheries (PIIFCAF)* and others have important consequences for small-boat dependent coastal communities. This section describes in detail some of the current policies that most affect small-boat marine harvesters and the dilemma of recruitment in some way.

##### *4.7.1 Core and Non-core*

This policy distinguishes eligibility among marine harvesters. It is intended to discern between those who have a historical dependence on fishing from those who do not, in order to reserve special benefits for those whose livelihood is completely centered on fishing. The policy distinguishes between a core group of marine harvesters on vessels of less than 65 feet who, by December 20 1995, were the head of an enterprise, held key licenses or in some instances a vessel-based license, had an attachment to the fishery, and was dependent on the fishery (DFO, 2010). Under this policy, entry into the core group is possible only by replacing an existing enterprise and the new entrant had to be a certified professional fisher (DFO, 2010). Conversely, non-core is defined as a fishing unit composed of a fisher who is the head of the enterprise, has a registered vessel and licenses, but does not meet the rest of the core eligibility criteria (DFO, 2010).

While this policy came into effect to recognize those marine harvesters who have historically used and depended on the fishery, and to provide them with appropriate benefits,

current contexts are now challenging the applicability of this policy. In some instances, historical use or dependence on the fishery is proven by how many months or years are fished before applying for the status. Currently many people from fishing families move away to find work outside of the fishery. If they ever wanted to join the fishery later in life they would not meet the criteria for dependence and historical use. Such is the case in Prince Edward Island, and the policy there has been adapted. The PEI Fishermen's Association updated the policy so that it only requires an entrant to have one season, and not two years, of fishing experience in the last ten years in order to enter the fishery. This policy was created as a response to the many young people returning home to fish after working for several years in western Canada (CBC, 2013).

#### *4.7.2 Co-Management Approach*

The concept of community-based co-management (CBCM) began to be formally integrated into fisheries management policies in the 1990s (DFO [AFPR], 2004). DFO's commitment to CBCM is guided by the 1999 *Framework and Guidelines for Implementing the Co-Management Approach*. As the concept of co-management is vague and there is no definitive framework, it is employed in a variety of ways in the Atlantic fishery.

There are subsidiary quasi-independent research bodies such as the Fisheries Research and Conservation Council (FRCC) and the Fishermen and Scientists Research Society (FSRS) that are composed of scientists, industry, marine harvesters and DFO officials for the purposes of collaborative fisheries research and provision of management advice. Similarly, other community or academic-led research organizations spearhead collaborative co-management

research projects with the intent of informing fisheries policy (e.g., Coastal Community University Research Alliance [CCURA]<sup>4</sup>).

CBCM is more formally adopted by policy through Joint Project Agreements (JPAs), which are legally-binding agreements between marine harvesters and DFO (DFO, 2010). Generally, JPAs function with DFO providing management services to the industry which the industry finances (Wilson, 2008). JPAs can only be created with marine harvester associations that represent at least two thirds of the license holders in a particular fishery (Wilson, 2008). While JPAs are intended to represent DFO's co-management approach, in a report on shellfish JPAs in 1999, the Auditor General believed that the co-management arrangements were "largely cost-sharing arrangements and have no sharing of real decision-making powers" (Auditor General, 1999, as cited in Wilson, 2008, p. 129).

Regardless of DFO's commitment to co-management, the Minister of Fisheries and Oceans still holds ultimate decision-making authority in the fishery under the auspice of the *Fisheries Act*, and the neoliberal values, worldviews, assumptions, and institutions upon which the fishery is built remain as the basic foundation. The allocation management strategies, value appropriation tactics, and other such conditions of the political economy remain dominant forces in communities; as such, CBCM as it stands today is inadequate. Potential recruits may be discouraged by the convoluted management system that is CBCM.

#### *4.7.3 Limited Entry licensing*

Limited entry licensing was one of the first major input controls that had far-reaching social effects on the community (Blake, 2000). If young people wish to enter a limited-entry fishery, they must obtain an existing license. Especially following the license buy-back program

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<sup>4</sup> See <http://www.coastalcura.ca/> for more information.

after the Marshall Decision, the cost of licenses has increased (see also Appendix C, Table 1.0). This fuelled inequality in communities between license holders and those who were unable to possess a license (Thiessen and Davis, 1988). While this policy intends to benefit coastal communities by specifying criteria needed to enter certain fisheries such as adjacency, historic dependence and economic viability (DFO, 2002), in some of the more lucrative limited-entry fisheries like snow crab and lobster, licenses can cost hundreds of thousands of dollars which is likely unaffordable for new entrants from coastal communities.

#### *4.7.4 Fleet Separation Policy*

The objective of the Fleet Separation policy is to separate ownership of production capacity within the harvesting and processing sectors of the industry, especially within the fleet of vessels 65 feet and under (DFO, 2010)<sup>5</sup>. Under the policy, licenses for fisheries where only vessels 65 feet and less may be used are prohibited from being owned by corporations or the processing sector (DFO, 2010). The policy developed during the time of the declaration of the EEZ in 1977, and the accompanying expectation of a lucrative industry. At this time 48 per cent of large plants owned vessels which helped to internalize costs, but only 21 per cent of small plants owned vessels (Apostle and Barrett, 1992). Concern grew over the dominance that the corporate sector was gaining in the industry from this vertically-integrated structure (Apostle and Barrett, 1992). Therefore, as a means to protect the interests of the small-boat fleet, the Fleet Separation policy was adopted in 1979.

This policy is assumed to protect the interests of small-boat marine harvesters, but it is arguably quite vulnerable to less formal and discrete processes that support corporate control in

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<sup>5</sup> The small-boat sector is often identified by DFO as the 'inshore' sector, and is sometimes represented by vessels less than 25 GRT or by vessels less than 65 feet. The defining characteristic, however, is that these vessels fish mainly in coastal areas. This research takes a somewhat different approach and classifies the small-boat sector as vessels less than 45 feet, as vessels of this size are likely not fishing for wealth accumulation due to their limited holding capacity.

the fishery. Not only are there enterprises with grandfathered clauses that exclude them from this policy's requirements, but independent marine harvesters who participate in the individual quota management system are subject to the "price/cost manipulations of the dominant corporations enabling corporations to limit competition and control supply through the devices of credit fixes (indirect take-overs) and buy-outs (direct-take-overs)" (Barrett and Davis, 1984, p. 130).

Regardless of the policy's arguable ineptness, recent threats to its survival in the current political economy are concerning for marine harvesters and this plays a part in the decision to enter the fishery among potential recruits. Concerns mounted after a DFO report on modernizing the fishery released in 2012 mentioned potential changes to the fleet separation and owner-operator policies (Taber, 2012). The concerns were addressed by the Minister of Fisheries and Oceans who confirmed that the policies would stay intact; however the threat of this change caused great concern throughout coastal communities (Canadian Press, 2012).

#### *4.7.5 Owner/Operator*

The owner-operator policy requires the license-holder to be the operator of the vessel catching the fish. This policy assumes protection for small-boat marine harvesters, as it stands to prevent corporations or large entities from purchasing and holding many licenses. However, like the Fleet Separation Policy, the owner/operator policy is arguably optics, as the informal and discrete processes of corporate control via price/cost manipulations override its applicability (Barrett and Davis, 1984).

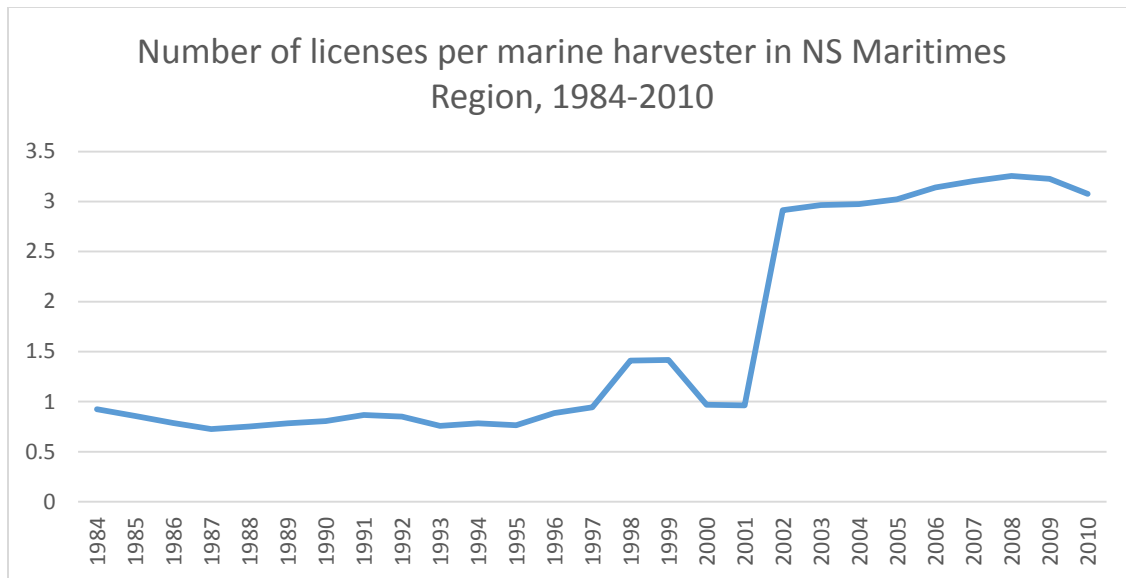
#### *4.7.6 Quota Management*

Individual rights-based fisheries management policies in Canada come in three forms: individual vessel quotas that are non-transferable, individual vessel quotas that are transferable, and enterprise allocations that allocate quota to corporations rather than specific vessels (Grafton

and Lane, 1998). IQs represent portions of the total allowable catch (TAC); they are not property rights to the fish, they are property rights to access the fish. IQs are supposed to improve the economic efficiency of the fishery by ending the costly race for fish illustrated by the over-capitalization in the limited-entry scheme (Apostle, McCay and Mikalsen, 2002). They are based upon the assumption that this sort of exclusive right will encourage conservation stewardship “...as people tend to care more for what they own privately than for what they hold in common with others” (Apostle, McCay and Mikalsen, 2002). ITQs are also designed for economic efficiency purposes, as the market will ensure that they are in the hands of those who can make the most profitable use of them (Apostle, McCay and Mikalsen, 2002).

The assumptions behind IQs/ITQs are based in the neoliberal economics of the developed nations (Apostle, McCay and Mikalsen, 2002); as such, their applicability to those who are smaller and more vulnerable is questionable. Copes and Charles (2004) claim that ITQs are merely “...structured to ignore or override any considerations of equity, resource conservation, or community welfare and sustainability, that conflict with profit maximization by quota owners” (p. 3). Furthermore, they often lead to the concentration of capital (see Figure 4.7). ITQs are initially allocated based on historical use and allocation after that is governed by market forces (Scott, 1996). ITQs can be sold by those who lack the capital and resources to fish enough to make a living, and bought by those with the most capital. Copes and Charles (2004) illustrate that “...without limits on such buying and selling of ITQs, there would be nothing to prevent the fishery from becoming permanently controlled by a few large companies or even a single corporation” (p. 175).





*Figure 4.7* Number of licenses per marine harvester in NS Maritimes Region, 1984-2010. The adoption of allocation management in the fishery has astounding effects on the relationship between the number of licenses and the number of license-holders. Figure 4.7 illustrates how in 1997 the number of licenses per license-holder surpassed one license per license holder, and grew to over 3.5. The other notable increase in 2001 can be explained by the license buy-back program after the Marshall Decision. (DFO, 2013).

The ramifications of this concentration of capital on coastal communities are dire, as opportunities for employment on the boats or in the plants are reduced as participation in the fishery declines. Logically, those vessels that have the financial capital to purchase more quota are likely corporations servicing larger boats that employ fewer people. As with limited entry licensing, ITQs make it difficult for new entrants to join the fishery. In an ITQ system, larger companies, corporations and those marine harvesters able to afford quota accumulation are removing opportunities for new entrants (Wingard, 2000).

Understanding the assumptions behind the key policy dimensions featured in the current political environment is critical to understanding how these policies affect the contemporary context of recruitment in the small-boat fishery. Over time, fisheries policies have created a fishery characterised by the accumulation of wealth by a small group. This is an issue of concern because the fishery remains a valuable industry, and those who have been pushed out and

excluded from this lucrative industry are often the marine harvesters from small-boat dependent coastal communities.

While fisheries management policies generally favour the industrial/corporate sector, even those that do tend to some of the needs and rights of individual harvesters (*e.g.*, fleet separation, owner-operator) are largely focused on and benefit captains/license-holders. Of particular interest is the absence of any mention of crew members and their needs and rights. This misrepresentation indicates a lack of concern for kith and kin networks as they relate to livelihood succession, and a lack of concern for the potential implications of intra-community social inequality. The following section will examine how the structure and dynamism of the small-boat dependent coastal community has changed over time in relation to the political economy, and will discuss how small-boat marine harvesters interact in the contemporary fishery.

## **Chapter V – The small boat fisheries dependent community**

Coastal communities in the Nova Scotian DFO Maritimes Region have undergone massive transformations in the last century. Once active fishing out ports, many of these communities remain today as vestiges of the past. However, marine resources remain the only real basis for sustainable livelihoods in these communities.

Changes in the structure and dynamism of small boat dependent fisheries communities contribute to the contemporary environment that challenges traditional patterns of recruitment. In small-boat dependent coastal communities, fishing was traditionally a family-centred livelihood, as recruitment into the small-boat fishery in Nova Scotia occurred through family relations and connections. In one study of small boat harvesters in Port La Tour, Nova Scotia, only 4 out of 28 crewmen were not immediately related to their captain (Davis and Thiessen, 1988). Traditional recruitment is often the result of “common stakes in productive property, familial obligation, and economic partnerships” and in many cases low income from fishing coupled with high costs of the vessel and equipment encourages the formation, maintenance and reproduction of kinship within crews” (Davis and Thiessen, 1988, p. 607).

As the political and social climate changed, so did the pattern of recruitment into the fishery. While fisheries management policies have fuelled changes within small-boat dependent fisheries communities, a shifting political economy including changing populations, migration, education attainment, and changing social perceptions have also lent to the transformation of the small-boat fishery. All of these changes contribute to the current dilemma of recruitment in the small-boat fishery. Having a better understanding of the extent to which they affect the level of recruitment will help in addressing the issue.

### 5.1 Population

Since the early 1990s, population growth in Nova Scotia is primarily attributable to urban growth in Halifax County. As illustrated in Figure 5.0 between 1996-2011, the great majority of population growth occurred in Kings, Hants, Halifax, Colchester and Antigonish counties. The greatest declines in population have occurred in counties with a high prevalence of dependence on coastal fishing, i.e., Shelburne, Yarmouth, Digby, Queens, Guysborough, Richmond, Cape Breton and Victoria (see Appendix D, Table 1.0-1.9). For example, between 1996 and 2011, the population in Shelburne County declined by over six per cent, in Digby County it declined by seven per cent, and in Guysborough County the population has declined by over ten per cent.

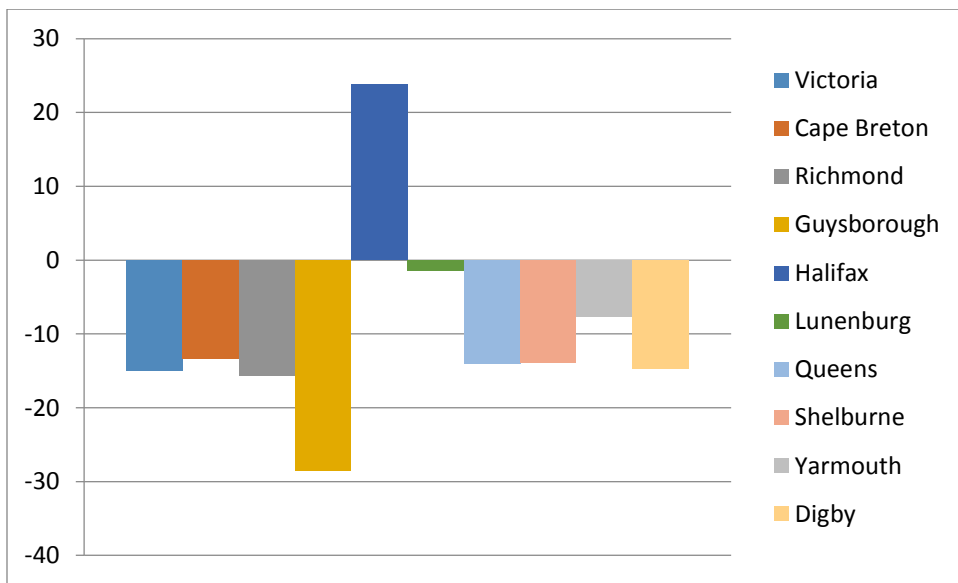


Figure 5.0 Percent change in population in Nova Scotia coastal counties, 1996-2011. (Nova Scotia Department of Finance, 2012)

### 5.2 Migration

Data illustrate that a dominant force of population decline in Nova Scotia is the out-migration of young people between the ages of 20-40. Figure 5.1 illustrates the net migration of this age group. Since the mid-1980s the dominant trend is that of young people leaving Nova

Scotia. Between 1985 and 2012, on average 1200 young people per year left Nova Scotia. This poses a major problem for coastal communities, as this age group is the principal reproducing portion of the population, and without it populations will continue to decline.

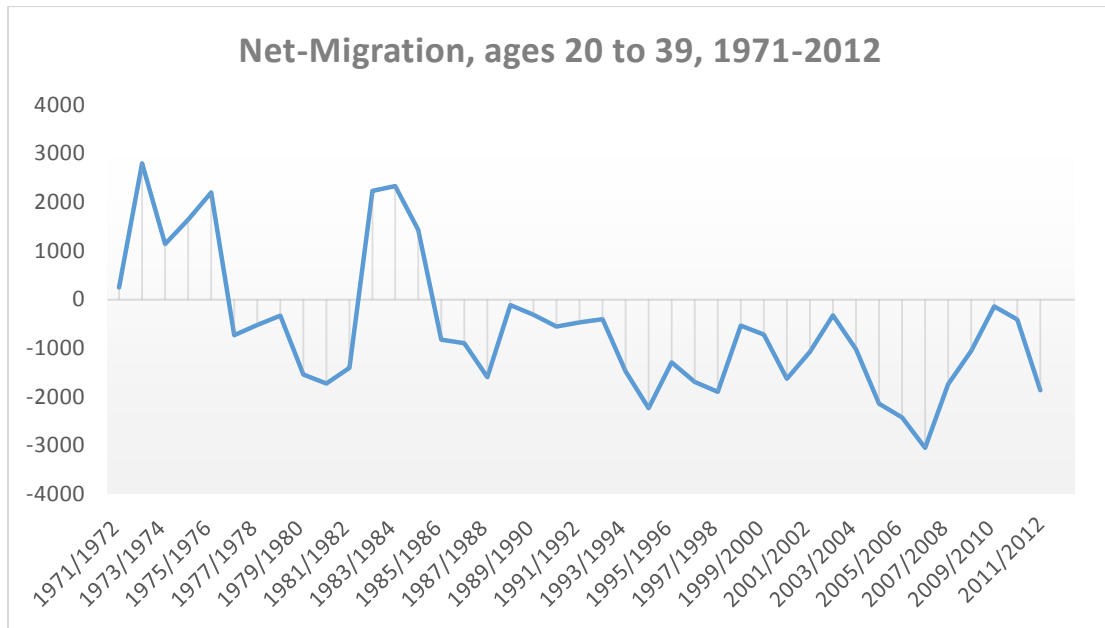


Figure 5.1 Net-migration of people ages 20-39 in Nova Scotia, 1971-2012. (Statistics Canada, 2012).

Interestingly, while there are more people aged 20-40 years who leave the province than enter it, the rate of in-migration for ages 40-99 is steadily increasing, thus contributing to Nova Scotia’s aging population. In 2012, the number of outgoing migrants age 20-39 was almost double that of incoming migrants age 40-99. This trend can be seen in Figure 5.2.

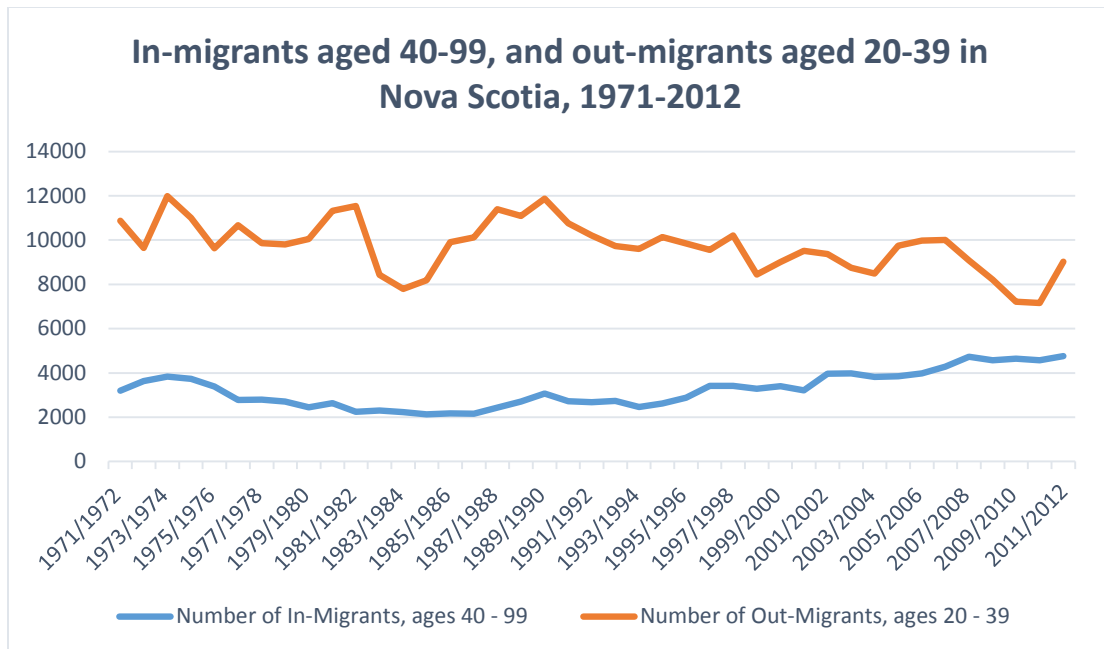


Figure 5.2 In-migrants, ages 40-99 and out-migrants, aged 20-39 in Nova Scotia, 1971-2012. (Statistics Canada, 2012).

Figure 5.3 illustrates how the pattern of a declining population of young people is common to all the counties with coastal communities in Nova Scotia. As such, these demographic changes may certainly alter the traditional pattern of recruitment in coastal communities. However, this out-migration is not a recent phenomenon. The grain harvest of 1890-1928 in Western Canada, opportunities in post-World War II Ontario and the Alberta oil boom of the 1970s are just some examples of the drivers behind out-migration in the Maritimes (Phyne and Stalker, 2011). Since the mid-19<sup>th</sup> century in coastal fishing communities, traditional recruitment favoured the eldest sons, as there was literally no room left on the boat for the younger sons (Davis and Thiessen, 1988). This pattern has continued into the 20<sup>th</sup> century, as indicated by Captains' responses to the question of 'Do any of your children fish?' indicated in Appendix E, Table 1.0. 42.5 per cent of marine harvesters said that their first-born and second-

born children fish; only 17.2 per cent said their fifth-born child fishes and only 3.6 per cent said their sixth-born child fishes.

So while retention of young people in coastal communities depends on various factors including how the political economy determines their access to assets, it is also partly contingent upon the ‘family economy’, i.e., the limitations of dependence on the family unit and its economic capabilities as the social basis of small boat marine resource harvesting (Davis and Thiessen, 1988).

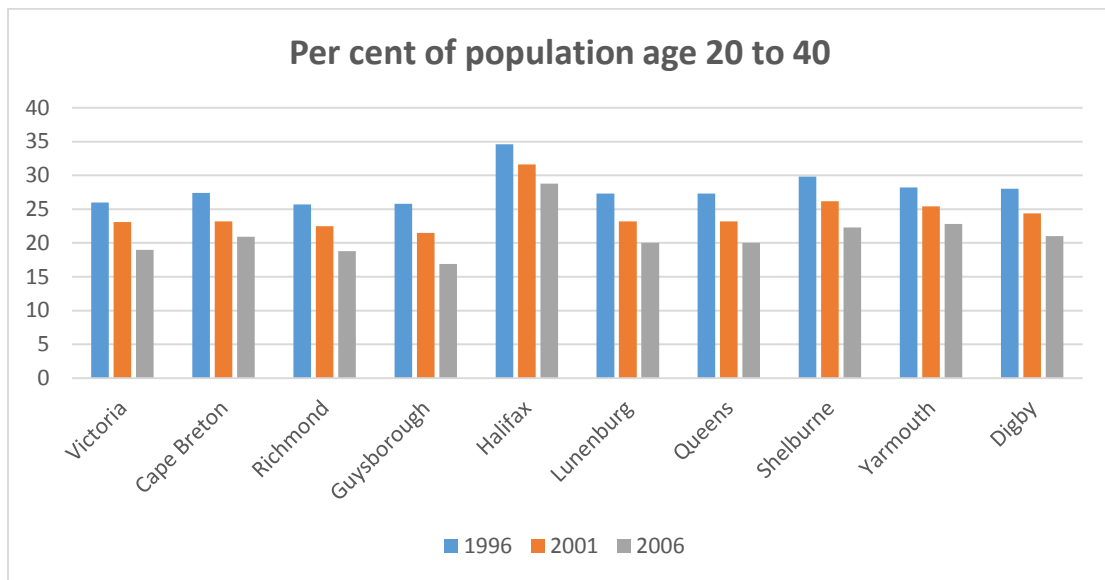


Figure 5.3 Per cent of population aged 20-40 in coastal communities in Nova Scotia, 1996-2006. (Statistics Canada, 2013).

There is a strong correlation between higher education and out-migration from rural coastal communities. Corbett (2005) found that those who have achieved post-secondary education are more likely to leave rural communities, or those without a prospect in a coastal community (such as the youngest child in a fishing family) are more likely to aspire to higher levels of formal education which will enable successful out-migration. While this analysis

indicates a correlation between education and out-migration, it also implies that income plays a significant role in migration.

### 5.3 Education

Since 1996, the attainment of higher education levels in counties with many coastal communities has grown. For instance, in 1996, the average percentage of the Nova Scotian population in the province’s DFO Maritimes region counties that had a bachelor degree or higher was 7.2 per cent. In 2006, it was 10.7 per cent. Similarly, the number of people with university, college or trade certificates and diplomas grew from an average of 26 per cent to 32 per cent during this time (see Figure 5.4). Attaining higher levels of education increases the opportunity and likelihood to obtain diverse employment opportunities outside of the community and the fisheries.

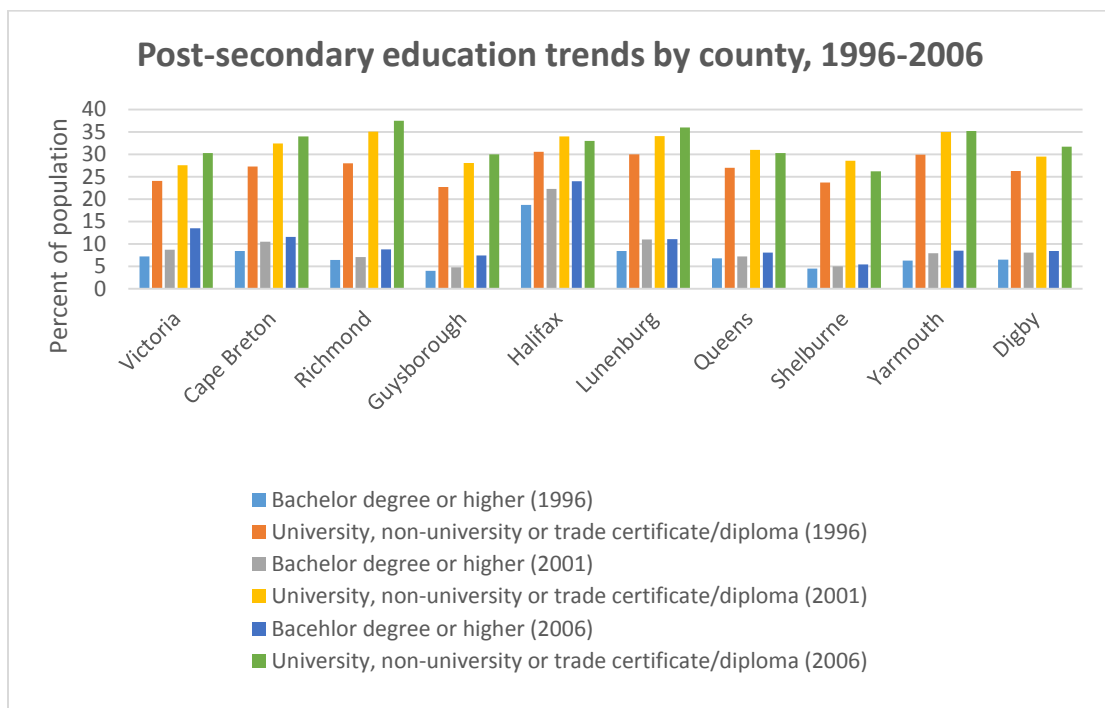


Figure 5.4 Higher education levels in coastal communities, 1996-2006. (Statistics Canada, 2013).



## 5.4 Employment

Factors such as increased mobility and outside opportunities are cited as reasons for out-migration from rural communities (Corbett, 2005; Millward, 2005); however, unemployment remains one of the most critical drivers of out-migration from rural coastal communities (Millward, 2005). Millward (2005) recognizes how the extended restructuring of the fishing industry is responsible for its resignation as the economic base of the community. He identifies that government action can have “...significant ameliorative or countervailing effects in specific communities” (p. 195). By providing diversified employment opportunities, improving accessibility to the fishery, and by subsidizing the costs of entering the fishery, the government could mitigate the extreme socioeconomic effects of rural depopulation. (Millward, 2005).

Correlated with these population changes in the province is a steady decline in employment in the fishery. Figure 5.5 illustrates that since 1955, employment in the fishery has declined by nearly 50 per cent, from 9 per cent of the labour force (age 14 and over) employed in the fishery and in fish processing plants in 1955, to 4.6 per cent in 2000.

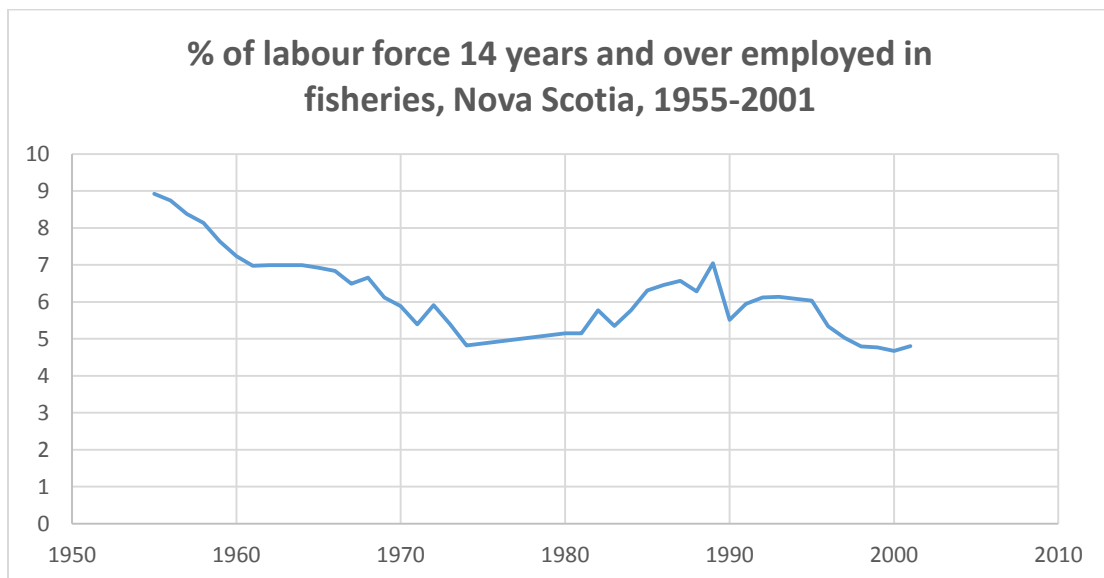


Figure 5.5 Per cent of labour force employed in fishing in Nova Scotia, 1955-2001. (DFO, 1978; DFO, 1979; DFO, 1987; DFO, 1996; DFO, 2001; DFO, 2004).

Since 1955, the total number of people employed as marine harvesters (including skippers and crew) declined by over 60 per cent, from 14 000 in 1955 to 5000 in 2010 (see Figure 5.6).<sup>6</sup> Also at this time, the number of fish processing plants declined by 30 per cent from 347 in 1950 to 246 in 2011 (see Figure 4.0).

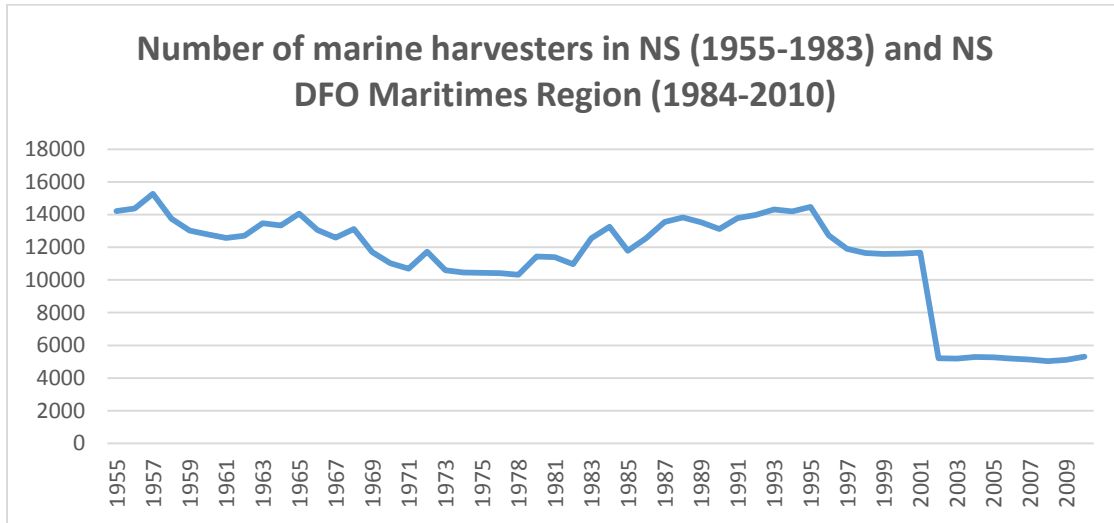


Figure 5.6 Number of marine harvesters (including captains and crew) employed in Nova Scotia and Nova Scotia DFO Maritimes Region. (DFO, 1987; DFO, 2013).

Finding employment in the fishery as an owner-operator is also contingent upon securing loans for the capital needed to begin fishing. For the most part, the accumulation of debt has become a modern era characteristic of fishing as a livelihood due to the high capital cost of vessels, gear and licenses. Over the past thirty years however, the price of fishing vessels and licenses has increased, and not necessarily in relation to income. From 1995 to 2006, the median total employment income (including employment income, employment insurance, and investments) of self-employed marine harvesters in Nova Scotia has declined 11% a year, from

<sup>6</sup> The dramatic decline in the number of marine harvesters from 2001-2002 is likely due to the license buy-back program implemented after the Marshall Decision.

\$20,148 in 1995 to \$13,257 in 2006 (in 1984 constant dollars) (DFO, 2011). During the same period, the approximated average cost of a vessel and a license increased 632 times (see Appendix C, Table 1.0).

The increasing cost of entering the fishery is certainly an impediment to potential recruits, as the price of a vessel and license can now reach over one million dollars. In Appendix C, Table 1.0, the data illustrates that from 1984-2010 the average cost of a vessel has increased 209 times, from \$47,267 in 1984 to \$146,493 in 2010 (1984 constant dollars). The average cost of a lobster license has increased 3289 times, from \$10,000 in 1984 to \$338,984 in 2010 (1984 constant dollars). Similarly, the cost of a vessel and a license together has increased 678 times from \$68,000 in 1984 to \$529,337 in 2010 (1984 constant dollars).<sup>7</sup>

The net income from small-boat fishing has not comparatively grown in tandem with the operating costs or start-up costs associated with fishing. While debt has always been a component of the small boat fishery, it is now more substantial than ever (see Appendix C, Table 1.0). What's more, wage-earning marine harvesters who work with corporate fishing entities have overall higher total incomes than self-employed marine harvesters, earning on average 4% more (DFO, 2011) (see Appendix C, Table 1.3).

After employment income, employment insurance (EI) is the second largest source of income for self-employed marine harvesters in Nova Scotia (DFO, 2011). As of 2006, Nova Scotian self-employed marine harvesters earn 60% of their total income from employment income, and 24% from EI (DFO, 2011). As such, recent changes to EI are threatening to small-

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<sup>7</sup> Here the limitations to this data are acknowledged. In some instances there was not enough data available to collect an average price, and the study was only able to consider those vessels and licenses listed in one classifieds section in one paper in one month every two years. As such, the data are not intended to be either representative or a precise reflection of how the cost of the capital needed to start fishing has changed over time.

boat marine harvesters (Rankin, 2012). While a discussion on the advantages and disadvantages of EI is beyond the scope of this research, it is appropriate to acknowledge how the reliance on an increasingly unstable policy within the small-boat fishery would affect a potential recruit's decision to fish or not.

### *5.5 Social Perception*

Knowing of and experiencing the dramatic increases in the investment costs required to become an owner-operator, it is not surprising to learn that several studies document the inclination of small boat captains to discourage their children from entering fishing as the basis for their livelihood. Some fishing families wanted better lives for their children, and discouraged them from entering the fishery despite reporting relatively high levels of livelihood satisfaction.<sup>8</sup>

How fishing as a livelihood is perceived also may affect recruitment. Fishing can be seen as a low-skill occupation of last resort, or something done when a person isn't positioned to do anything else. Conversely, it can be perceived as a respected livelihood, as it can require practicing cultural traditions and holding local knowledge (Macken-Walsh, 2012). Evaluating the social perception of occupations has been approached in many ways by sociologists. While no one scale and methodology can adequately or accurately represent the social perception of any given occupation due to the complexity of the task, the socioeconomic index of Canadian occupations can serve as a useful baseline for comparison over time.

On a scale of 100, the 1981 socioeconomic index for Canadian occupations as determined by Blishen, Carroll and Moore (1987) recorded net, trap and line fishing occupations as having a socioeconomic score of 24.6, and captains and other officers of fishing vessels as having a socioeconomic score of 36.4. The socioeconomic index from the 2001 census data shows a

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<sup>8</sup> See page 57.

decline in the socioeconomic score of fishing occupations. Boyd (2008) records fishing vessel deckhands as having a score of 12, skippers and license-holders with a score of 14, and fishing masters and officers as having a socioeconomic score of 33.

These results indicate that in 20 years, Canadians' perception of fishing as a livelihood option has weakened. This change could be indicative of the challenges the fishery faced during this time frame that made the fishery unattractive as a livelihood option (*e.g.*, groundfish collapse, cod moratorium, rising cost of vessels/licenses compared to income). Or, the change in perception could be influenced by external factors, such as other livelihood options that emerged during this time that were more agreeable in comparison. Either way, the declining social perception of fishing as a livelihood could affect a young person's decision to enter into the fishery or not.

### *5.6 The value of the small boat fishery*

One of the main reasons why these data are concerning is because the fishery has become such a valuable industry, even despite declining resources. In 2008, the total landings of commercial marine species in Canada were valued at \$1.89 billion with shrimp, snow crab and lobster representing 66 per cent of this value (DFO, 2008). These species are key resources in Nova Scotian fisheries. In fact, Nova Scotia accounts for a notable proportion of total Canadian landings, which makes it one of the most active provinces in the Canadian fishery. For instance, in 2008 it was responsible for 27 per cent of the total volume of landings, and 36 per cent of the total value of landings of commercial marine species in Canada (DFO, 2008). However, there is an inverse relationship between the value and the volume of the fishery. Figure 5.7 illustrates that since the moratorium in 1992, total catch landings in the DFO Maritimes Region (Nova Scotia only) have declined by nearly half, from 467 203 metric tonnes to 239 156 metric tonnes

in 2011. However, also since that point, the value of landings has increased 1.5 times, from \$462 million to \$695 million. It is also showing that this inverse relationship between volume and value can be expected to continue in the coming years.

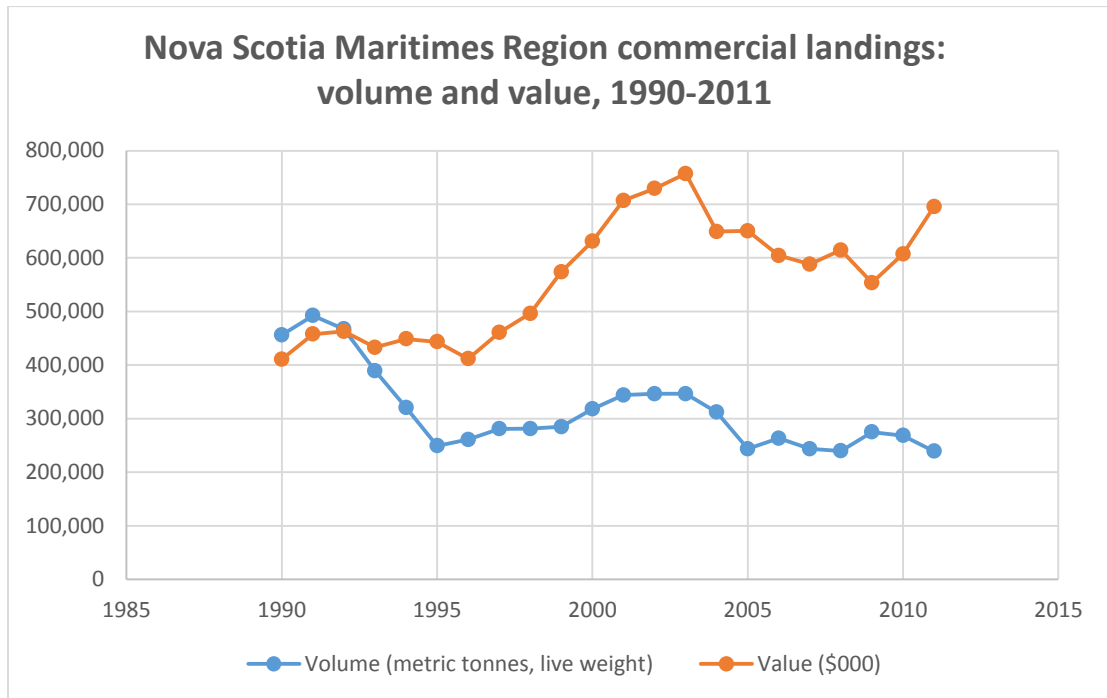


Figure 5.7 Volume and value of commercial fish landings, NS Maritimes Region, 1990-2011. (DFO, 2013).

An examination of catch landings by size of vessel indicates that the majority of marine resources are being landed by corporate vessels. Fisheries management policies have often been established based on the erroneous assumption that ‘too many fishermen are chasing too few fish’ (Davis, 2004). However, while the small-boat sector (fishing vessels < 45 feet) comprises the majority of the commercial fishing fleet in Nova Scotia, it is not landing the most resource. Figure 5.8 illustrates how vessels greater than 100 feet, entirely operated by corporations, are landing the most resource by volume, while employing the least number of people. This graph illustrates that the corporate sector accounted for a disproportionate share of Nova Scotia

commercial fish landings, while employing relatively few vessels and persons, especially during the period of 1990-1994, the height of the ground fish collapse.

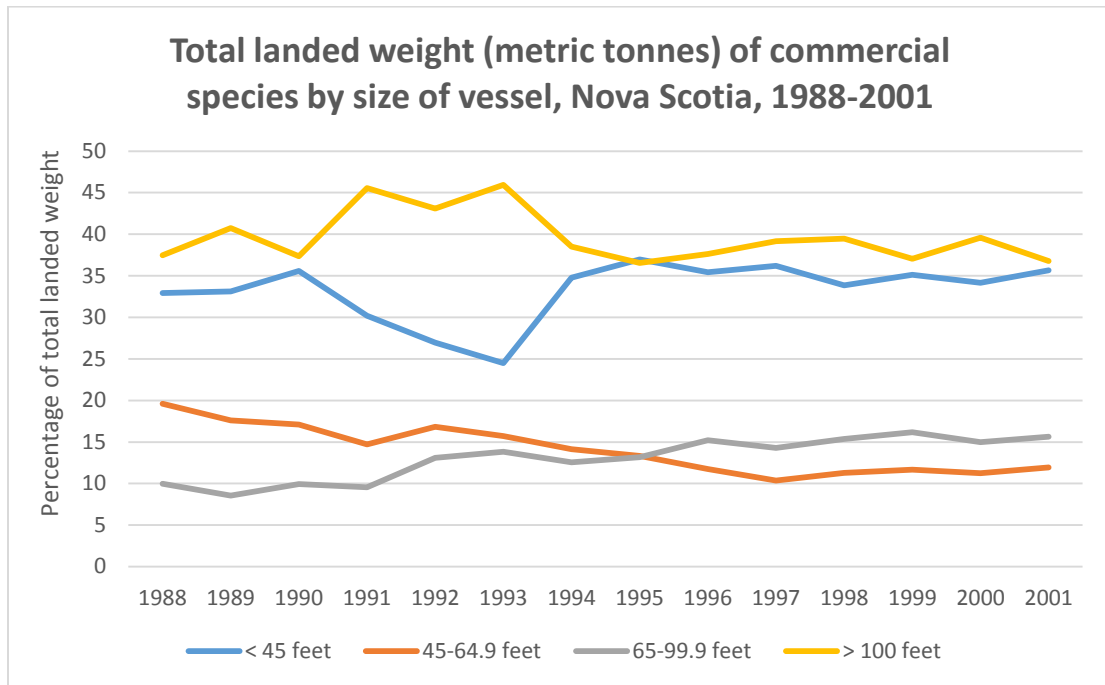


Figure 5.8 Total landed weight of commercial species by size of vessel in Nova Scotia, 1988-2001. (DFO, 1978; DFO, 1979; DFO, 1987; DFO, 1996; DFO, 2001; DFO, 2004).

When the value of the fishery by fleet size is presented in relation to the number of marine harvesters in each fleet, the results illustrate that the corporate sector accounts for a disproportionate share of the wealth. Figure 5.9 illustrates that from 2004 to 2008 vessels less than 65 feet employed on average 3390 marine harvesters and landed an average of \$515.2 million, which works out to be approximately \$152 000 per marine harvester. Conversely, vessels greater than 65 feet made on average \$120 million and employed an average of 29 marine harvesters per year, which means the value of this fleet is roughly \$4.1 million per marine harvester. These values indicate an accumulation of wealth outside of the small-boat dependent coastal community and concentrated in the hands of a few.

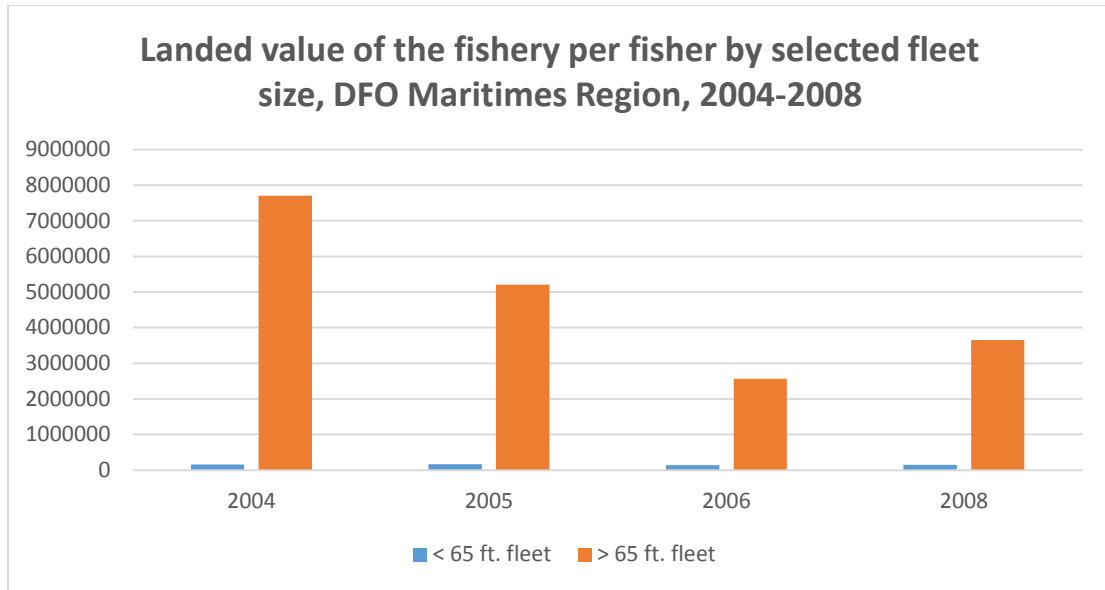


Figure 5.9 Landed value of the fishery per fisher by selected fleet size. DFO Maritimes Region, 2001-2008. (DFO, 2004; DFO, 2005; DFO, 2006; DFO, 2008).

This introduction to the small boat dependent fisheries community has discussed how populations in coastal communities are declining, which is partly attributable to the out-migration of 20-40 year olds and an increase in post-secondary attainment. Unsurprisingly, employment in the fishery is in decline, as is the number of license-holders. While many marine harvesters express a strong level of livelihood attachment and satisfaction, they are hesitant to advise a child of theirs to go into fishing. The general population also holds less esteem for fishing as a viable livelihood option. Combined with the decrease in landings, from these facts one would surmise that the industry was collapsing. Quite the opposite, however, as it remains a billion dollar industry. Although, upon closer inspection it is clear that the corporate sector is responsible for landing the majority of the value in the fishery while employing the least amount of people. Herein the dilemma of recruitment is situated; fishing today is more economically valuable and productive than it has ever been. The issue is that not enough value is going back into the communities to keep them sustainable.



### *5.7 The small-boat dependent fisheries community in Nova Scotia*

The attachment to and embeddedness of Nova Scotia's coastal marine harvesters with respect to their fishing livelihoods and community has been well-documented (Davis and Thiessen, 1988; Davis, 2004; Apostle and Barrett, 1992). Changing social, political and economic climates have created the contemporary scene wherein traditional patterns of recruitment are challenged. The older generation of marine harvesters expresses a high level of livelihood satisfaction and community attachment; the younger generation however, is constrained from entering the fishery by the current political economy and as such may not get to share these sentiments. Fishing as a viable livelihood option is continually challenged by increased management measures and demographic changes that disrupt the familial and social underpinnings of community.

Social survey data collected over the past thirty years reveals that fishing as a livelihood in coastal communities is embedded with kinship and as such, it is a source of social and cultural capital. Continued traditional patterns of recruitment into the fishery build kinship and community relations within the fishery and fishing community. Literature on the benefits of social and cultural capital that kinship in a community creates can be used to justify preserving traditional patterns of recruitment in coastal communities.

Community structure in small boat dependent fisheries communities has been well-documented (Agrawal, 1999; Binkley, 1995; Charles, 2001; Davis and Wagner, 2006; Apostle and Barrett, 1992; Jentoft, 2000). The existing literature identifies the complexity surrounding the concept of 'community', i.e., whether it is determined by geographic, social, economic, or familial boundaries. Agrawal (1999) claims that a community is not a homogenous unit; it is a complex network of people "where multiple axes of differentiation exist" (p. 635), and it is not

necessarily bound by any obvious spatial borders, nor limited to any particular ethnic, linguistic, caste or religious group. Community is also a fluid concept, evolving over time according to key socio-economic, political and technological attributes and processes occurring on the ground.

Two similar social surveys were conducted in small-boat dependent coastal communities in Nova Scotia that investigated the level of community attachment among marine harvesters, in 1988 and in 2001.<sup>9</sup> When asked whether they feel like they belong to the harbour where they fish, 99.2 per cent of Captains in 1988 indicated that they felt they belong or really belong, and 95.2 per cent of Captains' wives felt like they really belong or belong. In 2001, 98.1 per cent of respondents said that they feel like they belong or really belong (see Appendix E, Table 1.1). Contrasted with the response to this question in the 1988 survey, it is evident that this sense of belonging has not notably changed over the years.

Community attachment is also illustrated by responses to the question of whether respondents think that people in the community help out more, less or the same as in the past. This question was posed in 1988 and in 2001 and there was not a demonstrable difference in the responses (see Appendix E, Table 1.2). Over half of all marine harvesters from both years claimed that people help out the same amount as they did in the past.

Coupled with this sense of community attachment is a notable livelihood satisfaction among marine harvesters. In 1988, 2001 and 2007, marine harvesters were asked whether they would choose to go into fishing again if they had their lives to live over (see Table 5.1). In 1988, 89.6 per cent of Captains said they would choose fishing again, and interestingly, 95.2 per cent

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<sup>9</sup> The question of belonging or community attachment was not asked in the 2007 survey; however, the cohesive responses to the livelihood satisfaction question (see below) allows the inference to be made that those marine harvesters who participated in the 2007 survey have a similar level of community attachment as those from previous years.

of Captains' wives thought that their spouses would choose to go into fishing again, indicating that Captains' wives may feel more confident in their spouse's satisfaction than the spouses themselves. In both the 2001 and 2007 responses, no less than two in every three and, more commonly, over four in every five respondents indicated that they would probably or definitely choose to go into fishing again. From 1988-2007, livelihood satisfaction declined by 15%, likely due to the resource depletion, moratoriums, increasing costs and the increasing number of access and allocation restrictions brought on by neoliberal fisheries management policies during this time. Nonetheless, high levels of livelihood satisfaction remain persistent among small-boat marine harvesters in Nova Scotia, as almost three in every four claim they would still go fishing should they have their lives to live over.

**Table 5.1** *Life Over*

	<b>1988 (Captains) n=125 %</b>	<b>1988 (Captains' Wives)<sup>10</sup> n=125 %</b>	<b>2001 n=156 %</b>	<b>2007 n=330 %</b>
<b>Life Over<sup>11</sup></b>				
<i>Definitely/Probably</i>	89.6	95.2	81.6	73.9
<i>Probably Not/Definitely Not</i>	10.4	4.8	18.3	26.1

As might be anticipated, such high levels of attachment are embedded in and express the fact that most of these people are 'from' and 'of' fishing families with multi-generational roots within the fisheries and, commonly, the fishing port. These findings are entirely consistent with those reported in over thirty years of research concerning small boat fisheries (Apostle, Kasdan

<sup>10</sup> Captains' wives responded to the question "Would your spouse definitely, probably, or probably not choose fishing as an occupation again if he had his life to live over?"

<sup>11</sup> Respondents answered the question "If you had your life to live over, would you definitely, probably, probably not, or definitely not choose to go into fishing again?"

and Hanson, 1984; Pollnac and Poggie, 1978; Davis and Thiessen, 1988). As such, it is sensible to deduce that this high level of community attachment and livelihood satisfaction that exists among marine harvesters today despite the persistence of the political and social economy is in part due to the kinship and family embeddedness characteristic of the small-boat fishery in Nova Scotia.

#### *5.8 Case Study: Guysborough County Inshore Fishermen's Association*

Marine harvesters in the Guysborough County Inshore Fishermen's Association (GCIFA) were participants in the 1988 study and 2001 SRSF surveys, and the data collected from this group serves as a useful case study to illustrate the social context within which the dilemma of recruitment is situated. Fishing livelihoods in small-boat dependent fisheries communities are richly social and familial. Kinship and 'community' are embedded in the fishery and contribute significantly to the sentiments of community and livelihood attachment. What is more, these sentiments have not demonstrably changed over time.

In the 1988 survey, over four in every five Captains' fathers were also marine harvesters, and nearly two in every three Captains wives fathers were marine harvesters. The 2001 data echo these results. Over four in every five marine harvesters surveyed identified his father as also being a marine harvester. The 2001 dataset also illustrates how kinship extended past immediate family and spanned generations. Out of all of the respondents, when asked who else in their family fishes or fished besides their father, over three in four identified their father's father, over half identified their mother's father, two in every three said their uncles fish or fished, and half of the respondents said that their brothers fish or fished (see Appendix E, Tables 1.3– 1.4).

Additional 2001 survey questions indicate reasons for kinship embeddedness in the fishery. When asked who they began fishing with when they started fishing, over three in every

four respondents identified a kin relation, such as a father, grandfather, uncle, brother or another kin relation. Within this, 54 per cent responded that they began fishing with their father (see Appendix E, Table 1.5). Similarly, when asked who taught them the most about fishing, over three in every four respondents indicated a kin relation, and within this 57 per cent identified their father as teaching them the most about fishing (see Appendix E, Table 1.6). These data correspond with additional research from Davis and Thiessen (1988) which reports that children would often start fishing as crew on a family member's boat, and as such, begin a lifetime of training in the fishery. In this context "fishing was traditionally characterized by occupational inheritance...that is, it was predominantly the sons of fishermen who entered the fisheries" (Davis and Thiessen, 1988, p. 610).

Even education levels among GCIFA marine harvesters correspond with this tendency. 74 per cent of survey participants did not complete high school, and the highest level of education that the majority of this group attained was grade nine (see Appendix E, Table 1.7). These data could indicate that the suitable age to begin fishing is between the ages of 12-15 or during the junior high school years. This and other trends are illustrated in the following examples of fishing families in Guysborough County and the nearby area. These interviews were selected from a series of family and life histories obtained by the SRSF project. All the names have been changed to respect the identities of the individuals in each family.

#### *5.8.1 The McNeils (Queensport)*

Kevin McNeil was born in Queensport and fished from there for his whole life, and he was also a boat builder in his spare time. Kevin had five sons and his sixth child was a girl. All five sons fished swordfish and other types of fish, and the youngest son was also a rum runner. His grandson from his eldest son began fishing lobster as a crew member with his brother, also

out of Queensport until he drowned at the age of 21. Kevin's granddaughter from his eldest son married an inshore fisherman who fished out of Half Island Cove for his entire life. Her second husband fished inshore out of Whitehead. Another one of Kevin's granddaughter's from his eldest son had a son who fished on the draggers for a few years until this fishery closed. Another granddaughter had five children, two of whom worked in the fish plant, and the youngest fished all of his life out of Whitehead, and now fishes with his wife. One of Kevin's younger grandsons had six children; the eldest fished for some time then began working at the fish plant because he was getting too seasick, and the fourth born married a fisherman in Queensport, and she fished lobster with him for seven years. Finally, Kevin McNeil's great-great grandson works as a Fisheries Observer. Over five generations, nineteen members of the McNeil family from Queensport have been involved in the fishery.

#### *5.8.2 The Pattersons (Petit de Grat)*

Marc Patterson was a fisherman in Petit de Grat and only had one son who fished for everything throughout his life. Marc's son married and had seven sons and two girls; every child but the youngest son and the two daughters fished for a living. The eldest fished all his life, the fifth born fished lobster and long line, and the second youngest fished traps and lobster. Marc's grandson had thirteen children, six of which were sons. The second born (the eldest son) used to fish inshore but is now a carpenter; moreover, his wife came from a fishing family and she worked in the fish plant. The third born married a man who also came from a fishing family and he fished on draggers and in the inshore. The fifth born also married into a fishing family. The tenth born married a man who fished for a living until he retired due to an injury. He transferred his licenses to his wife and now she fishes with her husband's brother out of West Arichat.

Marc's son's daughter married into a fishing family as well. Her husband worked in the fish plant, and then their oldest son fished ground fish until 1992. Marc's great-granddaughter married a fisherman who fished on draggers and long liners alongside his brothers. Their son fished for a short period of time before moving to Alberta to work. Marc's great-grandson was a lobster fisherman and he married a woman from Janvrin's Island and they fished together for a few years. Their first born daughter married a fish seller. Another one of Marc's great grandsons is a full-time fisherman and works on a family member's boat. He married and his son works at the fish plant. In the four generations of the Patterson family from Petit de Grat there are over twenty family members involved in the fishery.

### *5.8.3 The Clemens' (Canso)*

Peter Clemens was born in Ireland and upon moving to Nova Scotia began fishing in Canso. Peter had eight children, and his first born (daughter) married a man who did some fishing but was also a carpenter. Peter's second born (son) had eight children, and his youngest (daughter) married a fisherman who fished on draggers out of Canso as a chief engineer. Peter's fifth born was a fisherman, and the husband of his third-born worked at the fish plant. Peter's seventh-born fished for a period of time and had twelve children, one of which married a fisherman from Canso. Peter's youngest son was a fisherman in Canso; this son's sixth child fished on and off but never full-time, and the tenth child married a fisherman from Newfoundland who fished on the draggers.

Peter's great grandsons from his eldest son were fishermen. One fished out of Canso, and sometimes worked in New Brunswick as a sea urchin diver, and the other two fished out of Canso. Peter's eldest son's fifth born son was in the navy, but eventually moved back to Canso

to fish. Peter's sixth oldest grandson fishes as a crew member on tuna boats, and has also fished for lobster and shrimp. The seventh oldest grandchild is also a fisherman.

Peter Clemens' seventh born child (son) had twelve children, of which the sixth born (daughter) married a fisherman from Canso, and their son (Peter's great-grandson) is an inshore fisherman in Canso. Peter's youngest child (son) had eleven children, of which the second born was both an inshore and offshore fisherman. Additionally, three of Peter's great-granddaughters married fishermen; one married a man who fishes offshore on shrimp boats, another married a fisherman from Halifax who has fished on draggers his whole life, and one other married a Newfoundlander who fishes on draggers and shrimp boats. Out of the four generations illustrated in the Clemens family, over twenty family members are involved in the fishery.

In these examples it is evident that fishing is a livelihood that is passed down through generations and interwoven within and across each generation. In 1988, 30.5 per cent of Captains said that their sons fish or have fished, and in 2001, 28 per cent of the respondents indicated that their sons fish or have fished. The act of fishing in younger generations has not appreciably changed over the years; however, the support for young people entering the fishery as a livelihood has noticeably changed. There is a hesitancy among marine harvesters to advise young people to begin fishing, regardless of community and livelihood attachment and patterns of kinship within the fishery. Contrasting responses from 1988, 2001 and 2007, it is evident that the hesitancy to advise a child to begin fishing as a livelihood has increased over time (see Table 5.2). This pattern is not surprising, as several major changes such as the ground fish collapse and the subsequent moratorium occurred after the first survey took place.



**Table 5.2 Advise a Child**

	<b>1988 (Captains) %</b>	<b>1988 (Captains' Wives) n=126 %</b>	<b>2001 n=159 %</b>	<b>2007 n=332 %</b>
<b>Advise a Child<sup>12</sup></b>				
From Scratch	<i>n=126</i>			
<i>Definitely/Probably</i>	26.2	13.9	19.6	19.0
<i>Probably Not/Definitely Not</i>	73.8	86.1	80.4	81.0
Boat and lobster license	<i>n=124</i>			
<i>Definitely/Probably</i>	73.4	59.0	45.6	61.8
<i>Probably Not/Definitely Not</i>	26.6	40.2	54.4	38.2
Boat and important licenses	<i>n=123</i>			
<i>Definitely/Probably</i>	82.9	68.0	83.5	70.0
<i>Probably Not/Definitely Not</i>	17.1	31.1	16.5	30.0
Inherited boat and licenses	<i>n=124</i>			
<i>Definitely/Probably</i>	81.5	69.7	69.0	65.6
<i>Probably Not/Definitely Not</i>	18.6	29.5	31.1	34.4

In 1988, when Captains were asked whether they would advise a child to start fishing from scratch, 73.8 per cent said probably not or definitely not. In 2001, 80.4 per cent of marine harvesters surveyed chose this option, and in 2007, 81 per cent of marine harvesters would probably not or definitely not advise a child to start fishing from scratch. While the differences in responses are small increments, the decline is note-worthy in the discussion on recruitment. Interestingly, the highest number of respondents who would probably not or definitely not advise

<sup>12</sup> Respondents answered the question “Would you definitely, probably, probably not or definitely not advise a child of yours to go into fishing if they a) had to start from scratch; b) if they could start with a boat and only a lobster license; c) if they could start with a boat and all of the important fishing licenses; d) if they were going to inherit your boat and licenses?”

a child to start fishing from scratch was the Captains' wives at 86.1 per cent. This could possibly indicate a maternal, protective instinct.

When asked if they would advise a child to begin fishing if they started with a boat and only a lobster license, 73.4 per cent of Captains in 1988 would probably or definitely advise them. In 2001, only 45.6 per cent of respondents would probably or definitely advise under this condition, and in 2007 61.8 per cent of marine harvesters would advise under this condition.

The low support in the 2001 group may be related to specific experiences in the lobster fishery, as this survey was limited to Chedabucto Bay, while the other two covered the whole Atlantic coast. Responses from the 2001 group can also be attributed to particular events that occurred around this time, such as the Marshall Decision and the creation of the Aboriginal fishery, which at the time was cause for concern for non-native fishers who saw native fishing activity as increased pressure on the marine resources that they relied on for their livelihood (Obeidi, Hipel, and Kilgour, 2006). Additionally, at this time the cod collapse was less than a decade old, so its ramifications were likely still reverberating in coastal communities. As such, respondents in the 2001 survey may have felt a greater degree of hesitancy towards encouraging youth to pursue a livelihood in fishing.

The third scenario asked if respondents would advise a child to begin fishing if they started with a boat and all the important licenses. Over four in every five respondents from the 1988 and the 2001 surveys would probably or definitely advise a child under this condition. However, in the 2007 survey, only 70 per cent of respondents would probably or definitely advise a child to begin fishing under this condition.

The final question asked whether marine harvesters would advise a child to begin fishing if they inherited their boat and licenses. 81.5 per cent of the 1988 survey respondents would probably or definitely advise a child to begin fishing under this condition. However, only 69 per cent and 65.6 per cent in the 2001 and 2007 surveys (respectively) would probably or definitely advise a child to start fishing with their inherited boat and licenses. These data could indicate that marine harvesters in 1988 valued their licenses more than those from the 2001 and 2007 surveys. This was before the groundfish collapse, and at a time when the total number of fishing licenses was in decline, so whatever license one did have was likely considered valuable. Responses from the 2001 and 2007 surveys may also have captured these marine harvesters' sense of limitations inherent in the vessel and licenses they held, and the difficulties they faced in accessing additional licenses.

The results from these questions concerning advising a child to enter the fishery based on certain conditions indicates an important point: the decision to advise a child to enter the fishery is not solely based on the level of attachment felt towards fishing as a livelihood or towards the fishing community. Rather, it is very much dependent upon the conditions, dictated by the political economy and policy environment, in which the child would be fishing for their livelihood. This is particularly evident in the responses from the 2001 group to the second question of whether one would advise a child to begin fishing if they started with only a boat and a lobster license. This group was the most hesitant to offer encouragement based on this condition because at the time of the survey, a major event (the creation of the Aboriginal fishery and the license buy-back program) was affecting the vitality of their livelihood. While personal sentiments are of course a large determinant of survey results, one cannot deny the influence that this event may have had on participants' responses to this question.

Contrasting the responses to this question over the past thirty years, it is apparent that marine harvesters, while demonstrating consistently high levels of attachment to fishing, are less supportive of young people entering the fishery today than they have been in the past. Similar results exist in Iceland, where marine harvesters acknowledge the importance of fisheries for the economy, but nonetheless discourage young people from choosing it as a livelihood (Bjarnason and Thorlindsson, 2006). This shift in attitude can be connected to the changing political economy and resource management and harvesting policy environment that has challenged the viability of small-boat marine harvesting over the years. Examining the value of the social and human capital found within kinship networks in the small boat fishery will help to understand why supporting it will help sustain small boat dependent fisheries communities.

## Chapter VI - The Sustainable Livelihoods Approach (SLA)

Examining the role and benefits of social capital in fisheries-dependent coastal communities is best approached through the SLA. Within this framework there are contexts, conditions and trends that influence the assets and resources that an individual, household or community can acquire. The SLA also considers the processes and forces that determine how one is able to use their capital assets/resources to determine their livelihood.

### *6.1 Context, conditions and trends*

Within the sustainable livelihoods framework, the context, conditions and trends determine a vulnerability index based upon one's access to capital assets. These factors include but are not limited to political, economic, environmental and social conditions (Scoones, 1998). Environmental conditions can include climate change and declining resources. Small-boat marine harvesters are usually more vulnerable to these conditions, as they have fewer financial assets with which to cope and often little if any influence on the prices they receive for resource landings.

The political context within which the small boat marine harvester is situated has different levels. Most notably, at the national level the small boat marine harvester is controlled and managed by DFO and its associated neoliberal policies, and at the local level is guided by community politics and socio-economic differentiations. Similarly, macro-economic processes that influence the small boat marine harvester are largely controlled by DFO's neoliberal management policies and the dominant capitalist economy, and the micro-economic processes are situated within the family and community economic unit (*e.g.*, inheriting a vessel/license, informal modes of labour, etc.).

Finally, social conditions and context include demographic changes, and evolving social institutions (the family unit, the community structure) and perceptions (*e.g.*, what is perceived as a socially acceptable livelihood). The populations in most coastal counties in Nova Scotia are declining; and most of the out-migrants are young people. This demographic change directly affects the social climate of coastal communities in these counties. As young people move away, the structure and dynamics of kin-related and family-centred recruitment in the fishery are altered. With these attributes changed the qualities underwriting family-centred and kin connected harvesting livelihoods and coastal communities are essentially discredited and debased.

## 6.2 *Capital assets*

The external conditions and contexts affect one's ability to access, own and control livelihood resources or assets. The SLA categorizes these capital assets as natural, physical, financial, human and social capital. Table 6.0 presents a non-exhaustive list of some of the capital assets that a small boat marine harvester may access. Natural capital refers to such items as available fish stocks and areas of the sea available to fish. This sort of natural capital is controlled by environmental conditions (*i.e.*, climate, species composition, etc.) but also by political conditions and resource management policy in the form of limited entry licensing, and allocation and sector-based management.

Financial capital available to the small boat marine harvester includes accessible government funding, the ability to receive revenue from fishing and access to credit and bank financing. Government policies are designed to benefit the industrial sector over the small-boat sector, so the ability to secure government funding is highly dependent on the political context. Moreover, revenue from fishing activity can be relative to the level of debt repayments.

Physical capital available to the small boat marine harvester would include community meeting facilities, wharves, vessels, nets and gear. Access to these assets is determined by the local political context (*i.e.*, what local social dynamics dictate the use/control over community facilities and wharves), as well as macro and micro economic conditions that would govern one's ability to obtain a vessel and gear. Limited entry licensing and allocation management are some examples of neoliberal policies that have grossly inflated the value of physical capital in the fishery, making it increasingly difficult for young recruits to choose fishing as a livelihood.

For example, traditionally, livelihood succession wherein older sons would inherit their father's fishing vessel, gear and licenses was commonplace (Davis and Thiessen, 1988). In the current political economy, however, these traditional livelihood inheritance and succession strategies are challenged. Marine harvesters now speak of having to sell their vessels and licenses in order to pay off debts and loans so that they can retire. Generally, government pensions are not sufficient to accomplish this (SRSF, 2001). Obtaining the physical capital necessary to fish has become increasingly difficult because within the current political economy one requires more financial capital to obtain the physical capital. This barrier also inhibits the inheritance of human capital such as local knowledge and fishing skills.

Human capital can include health and education, fishing skills and local knowledge. Formal education levels are low among marine harvesters, but knowledge is present in the form of local knowledge and local ecological knowledge (Bundy and Davis, 2012). These informal knowledge networks prove invaluable to both coastal communities and scientific research (Bundy and Davis, 2012). Today young people are invested in post-secondary education more than ever due to its greater availability. Parents are also encouraging their children to pursue post-secondary education as it creates more livelihood opportunities. Fishing in the future may

require different skillsets, such as knowledge about marketing, business planning and sustainable harvesting technologies. As such, fisheries management policies should be sensitive to the value of both informal and formal education, and encourage a balance of the two.

Finally, social capital refers to the networks of kith and kin relations and peer groups in the small boat dependent fisheries community. As the research has discussed, social capital is by far one of the strongest assets of these communities. The local knowledge, skills and livelihood satisfaction gained from operating in such a rich social and familial context, not to mention the opportunities for family and community growth via informal labour arrangements in such conditions, make small-boat fishing an integral part and dynamic motor of coastal communities.

Preserving access to human and social capital in the small boat fishery will help preserve the small boat fisheries dependent coastal community. Portes (2000) recognizes two distinct kinds of social capital: one at the level of the individual and the other at the community level. Both exist in the small-boat fishery, through individual relationships and community-wide systems of informal governance and relations. Both types of social capital are also widely recognized as critical components of natural resource management at the community level (Olsson, Folke, & Berkes, 2004; Ostrom, 2005; Pretty, 2003; Pretty & Smith, 2004).

In their research, Bodin and Crona (2008) recognize that social capital alone is not enough to create an effective natural resource governance program. They allude to the need for agency and leadership to activate the existing social capital. Similarly, Portes (2000) recognizes the risk of attributing all positive characteristics of a community to ‘social capital’ which can be loosely conceptualized. Nonetheless, the value of its presence in the form of kinship networks in a community is warranted. Encouraging opportunities to access it via access to the fishery in



small boat dependent fisheries communities would benefit fisheries management and community development initiatives alike.

**Table 6.0 Capital Assets of Marine Harvesters**

<b>Natural Capital</b>	<b>Physical Capital</b>	<b>Financial Capital</b>	<b>Human Capital</b>	<b>Social Capital</b>
<ul style="list-style-type: none"> <li>- Marine resources</li> <li>- Fishing areas</li> </ul>	<ul style="list-style-type: none"> <li>- Community meeting facilities</li> <li>- Wharves</li> <li>- Vessels, gear</li> </ul>	<ul style="list-style-type: none"> <li>- Ability to access funding from government</li> <li>- Revenue from fishing activity</li> <li>- Creditor</li> </ul>	<ul style="list-style-type: none"> <li>- Health</li> <li>- Education</li> <li>- Fishing skills</li> <li>- Local knowledge</li> </ul>	<ul style="list-style-type: none"> <li>- Kith and kinship networks</li> <li>- Peer groups</li> </ul>

### *6.3 Institutional processes, policies, and organizational structures*

As with the external conditions and context, the policies, institutions and processes are usually out of the control of the individual, yet they control their access to capital assets and determine their livelihood activities/strategies based on these assets. Examples are not always apparent. For example, the fleet separation and owner/operator policy would seem to preserve the independence of the small-boat fishing fleet from corporate annexation, and permit those small-boat marine harvesters with fewer livelihood resources to continue fishing. While this *policy* may be in place, there are certain *processes* that occur that may not be legal or obvious, but are equally as influential. For example, corporations are not permitted inshore lobster fishing licenses, but they still exert a great deal of control over the fishery by controlling prices, and through credit fixes and buy-outs (Davis and Kasdan, 1984). Additionally, marine harvesters can have either formal or informal agreements with fish buyers. They can enter into one-time transactions after investing in such items as the vessel, the crew’s wages and processing, for

example, or, they can enter into arrangements prior to fishing that specify payment methods (Koss, 1999). Koss (1999) states that the cost of specifying and enforcing all elements of a contract generally leads parties to choose an informal arrangement; however, it is easier for buyers to take advantage of unspecified features in an informal contract. Therefore, it is necessary to analyse the specific policies, institutions and processes that govern the assets and actions of individuals.

#### *6.4 Livelihood Strategies*

The three livelihood strategies listed in Appendix B include fishing, livelihood diversification and migration. For people of small boat dependent fisheries communities, this is often the choice that they must make. Sometimes the choice is influenced by more natural processes, such as older sons taking up all the room on the fishing boat, so the youngest sons and daughters must choose another livelihood option. Other times, the choice is influenced by policies and processes that make choosing fishing as a livelihood unaffordable and impractical. It has been illustrated so far that migration and livelihood diversification are becoming increasingly popular livelihood choices in Nova Scotia. This is evident in the out-migration of youth from coastal communities illustrated in Figures 5.1-5.3 and the increasing level of post-secondary attainment (which expands livelihood opportunities) in Figure 5.4. Similarly, the natural processes of livelihood selection are illustrated in the case studies of the three fishing families, wherein several of the youngest sons and daughters did not choose fishing as a livelihood.

#### *6.5 Outcomes*

The outcomes of the SLA are measured as an ability to maintain or increase one's livelihood, measured in terms of well-being or income. It has been illustrated herein that the younger generations in small boat dependent fisheries communities are less able to establish

fishing as a viable livelihood. The context of the neoliberal political economy is the most influential determinant of the ability to access capital assets among marine harvesters. Natural, financial and physical capital is controlled by restrictive allocation management policies that favour those with the kind of financial capital that is generally obtained through a wealth accumulation model. Human and social capital are naturally embedded in the networks of kinship within the small boat fishery, but are only accessible if one has the financial capital to enter the fishery. As such, herein the dilemma and challenges of recruitment are situated.

## Chapter VII – Discussion

This research demonstrates how the current political economy is inhospitable to the small-boat marine harvester. Neoliberal policies have challenged traditional patterns of recruitment, and small-boat dependent fisheries communities are threatened as fishing as a viable livelihood option diminishes. This situation is of concern for fisheries management and community development specialists alike, as it threatens both the small boat fishery and the structure/development of coastal communities. Government policies are designed to encourage industrial-scale, corporate fishing; this has been decisively designed by the state in its unambiguous push toward the capitalist industrialization of the fishery.

When the relationship between neoliberal fisheries policies and the small-boat fisheries community is examined, it is clear that the state, through its policies, is neglecting the interests of the small-boat fisheries community. The state operates on the belief that the proper or only way to develop is through a system based on economic rationality and efficiency. This system is guided by market forces and propelled by the desire to accumulate wealth.

The small-boat fishery is unable to compete in this system because it is not driven by the desire to accumulate wealth. Small-boat marine harvesters are characterized as such because they exist within a context of intimate familial and friendship social relations where such are given priority when possible over exclusively economic considerations. As well, their limited financial capital often means that they are in an indebted relationship with a creditor, and their income contributes to debt repayments and towards their livelihood. The corporate sector's profit maximization motive drives them to fish for the accumulation of wealth and has created the competitive environment that fuelled the problem of overfishing in the first place.

As such, the interests and preferences of the corporate industrial sector is fundamentally at cause for the creation and implementation of neoliberal/allocation management policies such as IQs and ITQs. These policies have been challenging for small-boat marine harvesters because they allow a system to govern the fishery that increases the cost of fishing relative to the income earned, permits the accumulation of privileges in the hands of a few, and reduces the amount and range of fishing opportunities for fishing families.

Declining employment opportunities for marine harvesters also implies a lack of livelihood options for fishing families in coastal communities. Traditionally, there were opportunities for family members to work in fish processing plants or as crew on a family member's vessel (Apostle and Barrett, 1992). The economic rationality of neoliberal policies has reduced these opportunities in coastal communities, as jobs are reduced and confined to larger ports and vessels.

Consequently, there is an out-migration of youth from coastal counties in search of employment and other opportunities. More young people are leaving coastal counties and higher levels of education are being pursued. These demographic changes are influenced by a variety of factors, but of particular interest is the hesitancy among marine harvesters to encourage youth to enter fishing. Most all marine harvesters in the surveys used in this research expressed a strong level of community attachment and livelihood satisfaction over time; therefore, it can be inferred that the reason for advising or not advising a child to enter fishing is strongly dependent on the political economy controlling the context within which one fishes.

The excuse used for the implementation of restrictive allocation management policies was 'too many fishermen chasing too few fish', but it is clear that the corporate sector was, and still is to this day, responsible for the majority of marine resources removed from the sea.

Regardless of that fact, small boat marine harvesters still have had to face these restrictive policies that are based on erroneous assumptions about human behaviour (Ostrom, 1999). They assume that people act in rational economic ways, and they neglect any social or cultural underpinning of the familial and community context in which people live. Small boat marine harvesters' lack of adequate financial capital inhibits their ability to succeed in this political environment. The inability to maintain fishing as a livelihood throughout generations is greatly affecting the social capital found among fishing families and communities, and as such ultimately affects the sustainability and dynamism of small-boat dependent fisheries communities.

## Chapter VIII - Recommendations

The Sustainable Livelihoods Approach (SLA) is a useful framework for understanding the assets held by small boat marine harvesters that the neoliberal political economy overlooks. Adopting the SLA or a similar framework that would manage fisheries based on the assets and strengths of people and communities is the ultimate recommendation of this research. Social scientists can provide the “methods to define, interpret and understand” (Krueger and Decker, 1999, p. 42) the values of different groups in society, which can help inform new approaches to management. Although, as Symes and Phillipson (2009) state, “the attitude to the social dimension of fisheries policy... follows a pattern common throughout much of the developed world in acknowledging the significance of social issues but refraining from translating this awareness into explicit objectives let alone operational practices” (p. 3). Indeed, a shift in how fisheries management is conceptualized will not happen overnight; but it can be propelled forward by innovative thinkers and smaller, more concrete policy changes.

The sort of change suggested here has to come from all levels. Giving people at the local level more power to affect this change and participate in decisions that affect their lives is important; however it should not mean that the state revokes its right as a care-taker. What has seemingly been forgotten is that the state has a responsibility towards all people; so, what is the role of the state when considering the sustainability of the small-boat dependent fisheries community?

Other regions are facing the same dilemma of recruitment and are creating management plans to address the issue and build sustainable coastal communities. For example, young people in Norway are migrating away from traditional fishing communities such as the Lofoten Islands

to such an extent that the Norwegian government is implementing programs to encourage youth to remain in the communities by offering incentives to entering the fishery (Davis, 2004). A portion of quota is set aside specifically for youth to use during the summer months with the hopes that they will pursue fishing as a livelihood.

In their research on New England fisheries, Clay and Olsen (2008) claim that “...kinship within the fishing industry positively influences the resiliency of the fishing industry and fishing community” (p. 151). As such, the New England Fisheries Management Council proposed Amendment 18 - the “Fleet Diversity Amendment” which would limit the quota that any one person or corporation could accumulate, reserve quota for small boats, and promote owner-operator and fleet separation policies (Eldred, 2013). This policy was drafted with the hope of encouraging opportunities for young people from the community to engage in fishing. Although, as Clay and Olsen (2006) acknowledge, fisheries management requires going beyond implementing fisheries policies such as these, and taking a more holistic approach to governance that considers the social, political, cultural and socio-economic attributes of the community.

The Irish government has taken steps to consider these attributes. In rural Ireland, social and cultural capital are a product of the small boat fishery. Local knowledge, traditional boat-building and fishing skills are revered for their value to the human ecology of fisheries communities (Macken-Walsh, 2012). In its attempt to offer a more ‘bottom-up’ approach to development, the Irish government recognized the potential for this “culture economy” (p. 202) to contribute to the sustainability of the community (Macken-Walsh, 2012). Their approach advocates moving away from conventional primary industries such as fishing and mariculture, and instead transforming these industries into value-added cultural and tourism enterprises (Macken-Walsh, 2012).



In her research, Macken-Walsh (2012) explores the application of such programs. She found that the “trinketization” (p. 209) and commodification characteristic of this approach was “fundamentally at odds with and indeed antagonistic to the forms of esteemed cultural capital underpinning small-scale fishing occupational identity” (p. 210). She also found that these programs were no more than rhetoric as they were operating under “greater economic national and supranational forces” (p. 210). As such, she suggests that “fishing must be reinstated as a central feature of local cultural and occupational identity” (Macken-Walsh, 2012, p. 210) by promoting marine resource products in niche markets such as the slow food movement (Reed et al., 2012).

Other researchers’ solutions to fostering sustainable fisheries communities involves a community rights-based approach. For example, in order to develop a governance framework that is informed by the social complexities on the ground, Davis and Jentoft (2001) suggest a partnership between non-aboriginal and aboriginal fishing groups. In the current political economy, non-aboriginals accept the neoliberal policies created by the state, and as such, “fish at the behest of the state” (p. 235) and enable it to assume the role of manager (Davis and Jentoft, 2001). In their suggested management strategy, non-aboriginal marine harvesters from small boat dependent fishing communities that have a family history of fishing should lay a “rights-based claim to their participation in the fisheries” (Davis and Jentoft, 2001, p. 235). Partnering with aboriginal groups such as the Mi’kmaq who have experience in challenging the authority of the state would help non-aboriginal marine harvesters root their rights to fish and manage their fisheries within their community (Davis and Jentoft, 2001). This approach, according to Davis and Jentoft (2001), would create an “assurance of access to a sustainable and reasonable livelihood” (p. 235).

So, small boat dependent fisheries communities around the world face similar dilemmas of recruitment, and often propose similar solutions. In their study of three small boat dependent fisheries communities, Mulyila, Matsuoka and Anraku (2012) found that the sustainability of fishers' communities is contingent upon a) the age of entry into the fishery, b) revenue from fishing, c) social cohesion among marine harvesters, and d) the availability of alternative income-generating opportunities to reduce the dependence on subsidies and as a backup in the case of ecological or market collapse. A welcomed addition to these four factors is the need to practice ecologically-sound and sustainable fishing methods.

These findings are consistent with other such qualitative studies of fisheries communities discussed in this paper. As such, the management recommendation suggested here is based upon these drivers of fisheries community sustainability. Management measures for sustainable fisheries and sustainable fisheries communities must encourage early entry into the fishery, enable marine harvesters to obtain the financial capital needed to uphold a sustainable livelihood, support networks of familial and familiar relations, and encourage employment diversification. The state should support interested young people from small-boat dependent fisheries communities in choosing fishing as a livelihood option. This should be done by reallocating fishing privileges from the corporate sector. If such an opportunity exists, traditional patterns of recruitment could continue and coastal communities could remain sustainable into the future.

There are several ways in which the government could develop such management measures. Strategies targeted towards youth that combine education, skills development and marketing and technological innovations will best prepare the next generation of marine harvesters. Thus, an appropriate management measure is to create a government-funded youth program not unlike the Federal Student Work Experience Program (FSWEP) or the Youth

Employment Strategy (YES)<sup>13</sup>. In this program, government funding could provide vessels and gear, and youth would have the opportunity to spend their summer starting off as crew fishing with other young people in the program, eventually moving up to captain's status as they return to the program each year. Components of the program could include creating a business plan, conducting market research, finding appropriate buyers for the product, and of course practicing sustainable harvesting methods.

While fishing in the summer may spark interest among youth, it does not provide a secure livelihood. An additional pool of quota or licenses could be reserved in a community as a sort of bursary for youth interested in pursuing fishing as a livelihood. This bursary could be awarded upon completion of the first program, once a young person has proven their interest in and capability at fishing. The grant could be used for a vessel, license, or gear and the recipient would have to abide by certain stipulations. These could include but are not limited to the willingness to obtain training in other fields (employment diversification), and the requirement to be from a small boat dependent fisheries community. In addition, a recipient would have to practice sustainable harvesting techniques, and would be supported in finding the appropriate niche market for their sustainable products.

Programs such as these would provide opportunities for youth to choose fishing as a livelihood. They would aim to strike a balance between state support and economic independence. Creating a process such as this would permit potential recruits to bypass restrictive policies and access the capital assets needed to choose fishing as a livelihood option.

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<sup>13</sup> See <http://jobs-emploi.gc.ca/fswep-pfete/index-eng.php> and <http://www.youth.gc.ca/eng/common/yes.shtml> for more information.

## Chapter IX – Conclusion

The small boat dependent fisheries community in Nova Scotia has for a long time existed in defiance of the path of capitalist development (Davis and Thiessen, 1988). However, the current political economy and its associated neoliberal policies have been gradually eroding the very structure of these coastal communities. This context challenges the local social and economic conditions that govern the small boat fishery, and in effect ruptures social and familial networks. The result is inequality in opportunity in the community, between those possessing licenses and those who are unable to choose fishing as a livelihood (Davis and Thiessen, 1988).

The model on which fisheries are managed is that of the wealth accumulation model. This model does not accurately represent the small boat dependent fisheries community and as such, does not work. It is imperative that the distinction between livelihood sustainability and wealth accumulation fishing is made. Until the state recognizes that small boat marine harvesters operate within a livelihood satisfaction model, their capitalized, profit-driven and economically rational policies will continue to create rifts in the social fabric of coastal communities.

The dominant way of knowing and interpreting fisheries management as framed by the neoliberal economic model of capitalist wealth accumulation and economic rationality is herein being challenged. As St. Martin (2006) states, “...the introduction of communities suggests a different economic actor with motivations and affinities impossible in the dominant model” (p. 177). Social science research brings to light notions of community and culture that emerge in protest to the dominant economic theory (St. Martin, 2006). These factors that “...most frequently originate from traditional, pre-industrial, and pre-capitalist locations” (p. 169) are being presented as an alternative vision of the economy as one that is “never enclosed or

explained by a single and exclusive economic dynamic but potentially open and interpretable in terms of a diversity of processes such as culture and community” (St. Martin, 2006, p. 171).

This alternative vision of management should be sought for the small boat dependent fisheries community. Krueger and Decker (1999) state that fisheries management is conducted because the outcomes of the management process are expected to have value to society. An approach to fisheries management that is influenced by the SLA could account for the social complexities that the current neoliberal economic model fails to consider, and it would place value on the human and social capital present in a fisheries livelihood. With this framework, fisheries management plans would have the opportunity to become all-encompassing strategies to address community-wide issues in fisheries-dependent coastal communities.

The sustainability of small-boat dependent fisheries communities rests on the existence and dynamism of kinship networks. As Jentoft (2000) states, “community development must go hand in hand with fisheries management” (p. 59). The reverse holds true as well: sustainable fisheries management requires sustainable community development.

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## Appendix A

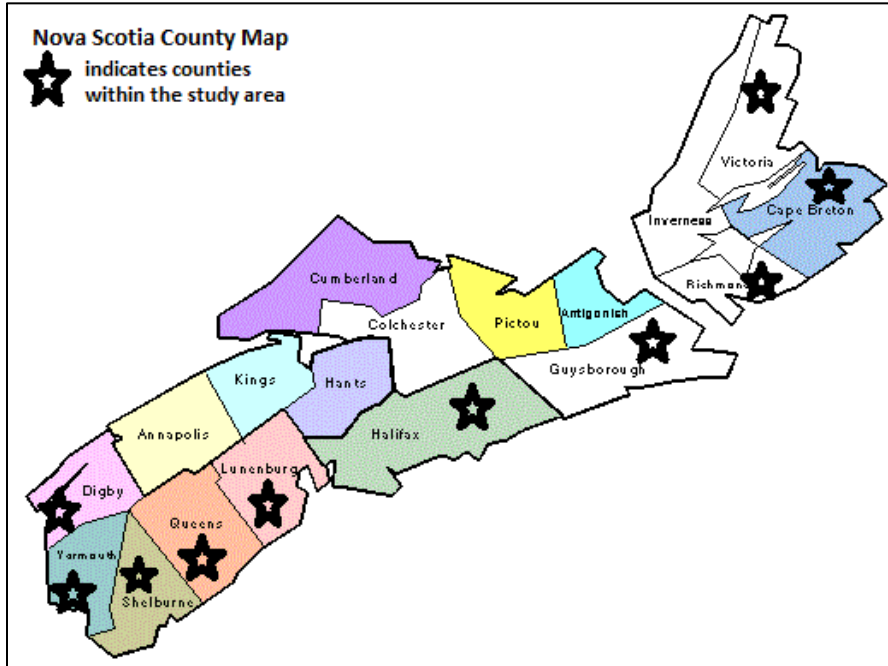


Figure 1.0 Map of Nova Scotian counties within the DFO Maritimes Region. (Adapted from [www.novascotia.ca](http://www.novascotia.ca))

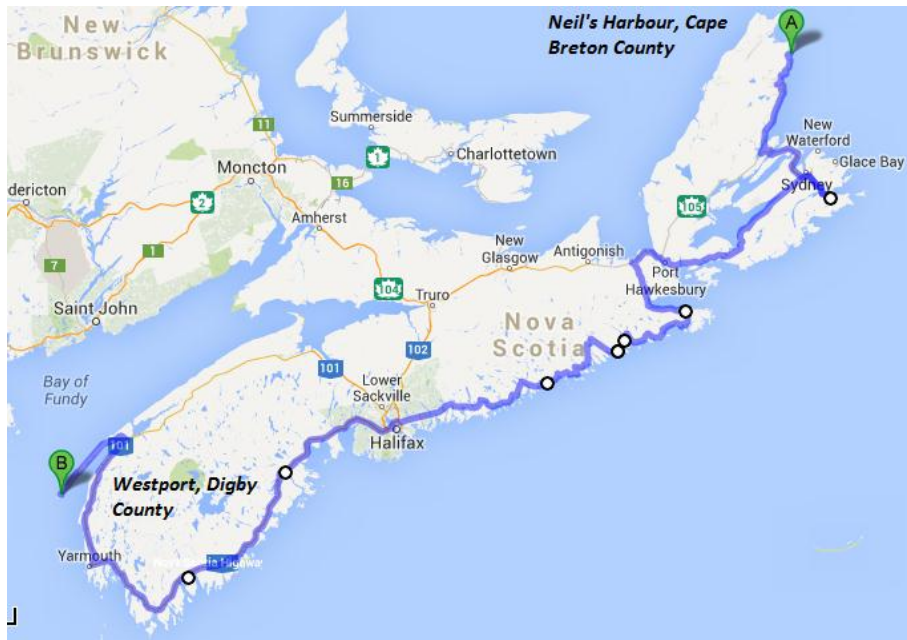


Figure 1.1 Study areas for the 1988 survey



Figure 1.2 Study areas for the 2001 survey

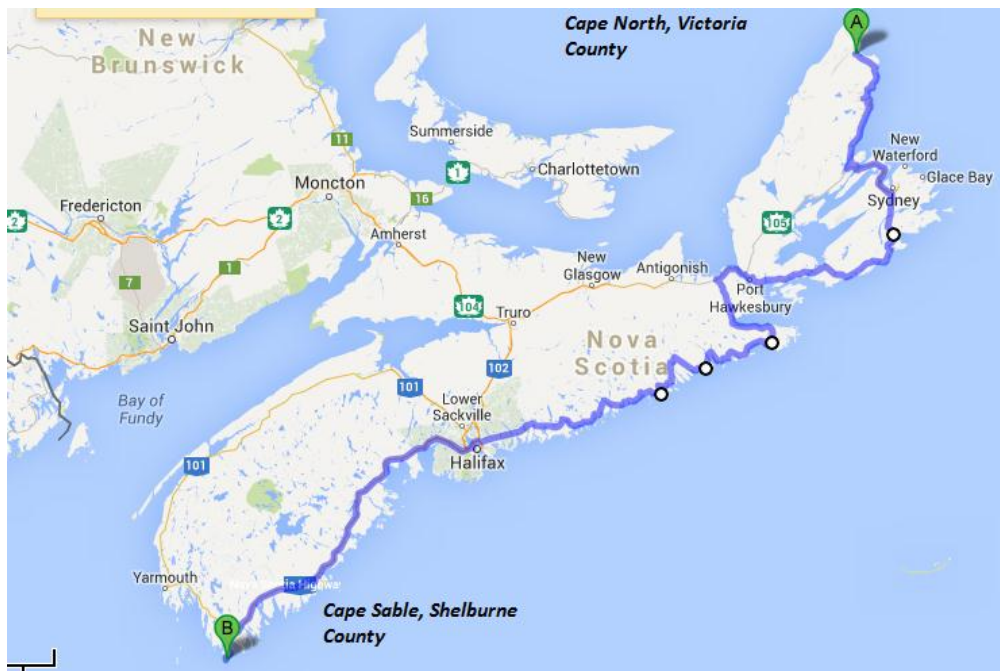
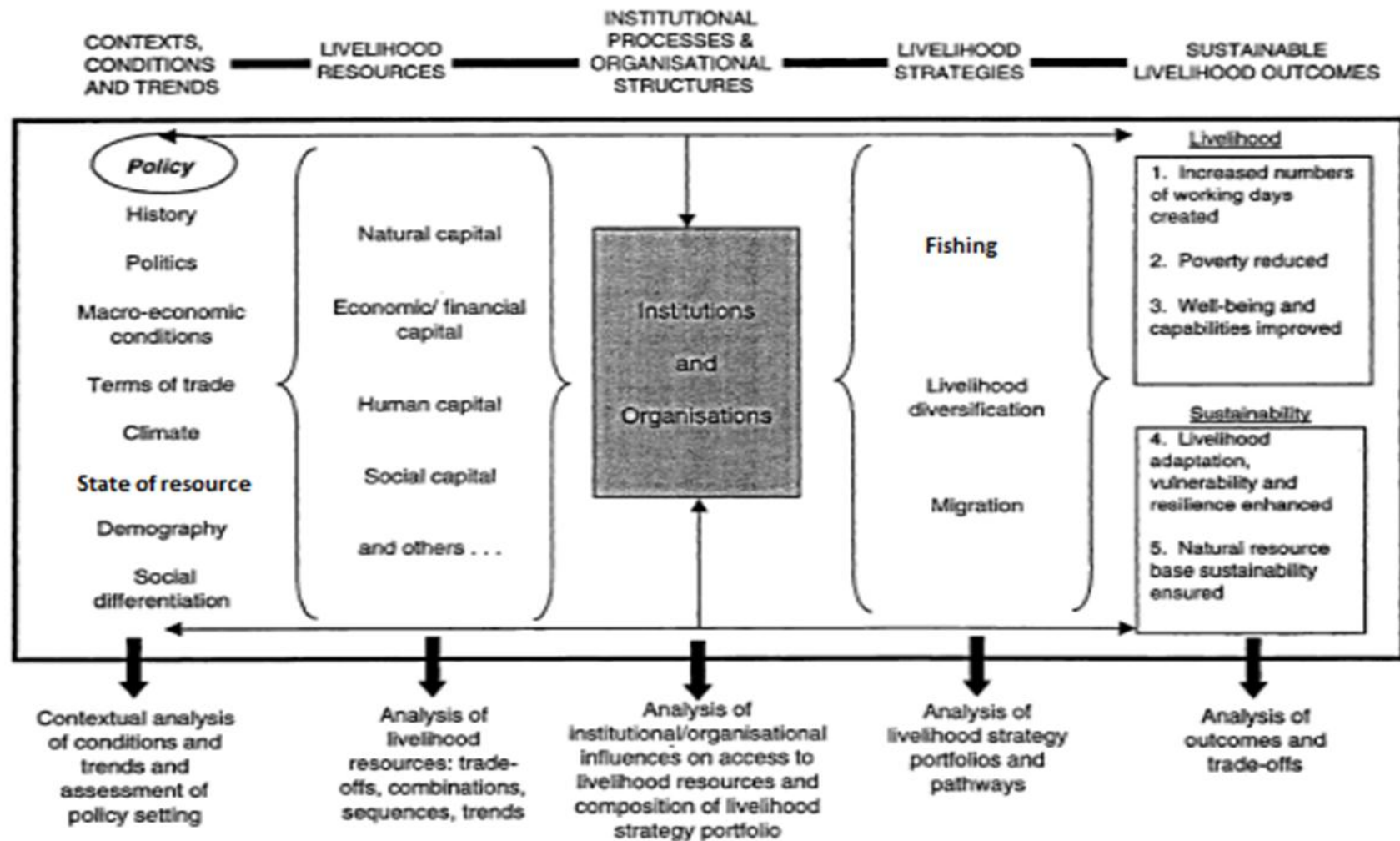


Figure 1.3 Study areas for the 2007 survey

## Appendix B – Sustainable Livelihoods Approach (Adapted from Scoones, 1998)

Figure 1: Sustainable rural livelihoods: a framework for analysis



## Appendix C – Fisheries Data

Table 1.0 *Boat (44'11''), boat (44'11'') & lobster license, and lobster license prices in real (white) and constant dollars (orange) 1984-2010*

	1984	1986	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010
Boat (44'11'')	\$47,267	\$43,633	\$69,308	\$35,640	\$47,559	\$113,117	\$90,765	\$74,294	\$104,919	\$106,113	\$156,660	\$207,000	\$194,114	\$280,900
Constant \$ 1984	\$47,627	\$40,430	\$58,989	\$27,618	\$34,310	\$80,268	\$50,586	\$49,258	\$66,576	\$64,668	\$90,294	\$114,558	\$101,935	\$146,493
Boat & License	\$68,000	\$164,000	\$119,125	\$65,000	\$127,143	\$139,444	\$138,286	\$256,333	\$262,000	\$247,600	\$866,233	\$1,012,500	\$890,000	\$1,015,000
Constant \$ 1984	\$68,000	\$151,963	\$101,390	\$50,370	\$91,724	\$98,949	\$94,158	\$169,953	\$166,253	\$150,195	\$499,464	\$560,342	\$467,365	\$529,337
Lobster license	\$10,000	\$20,000	N/A	\$30,000	\$55,000	\$55,000	\$96,500	\$30,000	\$90,000	\$160,000	\$699,500	\$1,000,000	\$400,000	\$650,000
Constant \$ 1984	\$10,000	\$18,532	N/A	\$23,248	\$39,678	\$39,028	\$65,706	\$19,890	\$57,109	\$97,057	\$403,327	\$553,424	\$210,051	\$338,984

Table 1.0.1 *Percent change in boat, boat & license, and license prices*

	Change 1984 - 2010	Change 1992 - 2010	Change 1996 - 2006	Change 2000 - 2006
Boat	209 times	326 times	189 times	120 times
Boat & License	678 times	477 times	462 times	218 times
License	3289 times	754 times	415 times	493 times

Table 1.1 *Average Employment Incomes for Nova Scotia Self-Employed Fish Harvesters (DFO, 2011)*

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Average wage of Self-employed Fish Harvesters (real \$)	\$29,159	\$25,549	\$26,168	\$26,122	\$31,738	\$31,541	\$32,194	\$31,961	\$33,242	\$26,279	\$24,577	\$23,955
Constant \$ 1984	\$20,148	\$17,396	\$17,522	\$17,319	\$20,468	\$20,014	\$19,766	\$19,387	\$19,653	\$15,152	\$13,932	\$13,257

(DFO, 2011).

Table 1.1.1 *Percent change in employment income for Nova Scotia self-employed marine harvesters*

	% Change 1996-2006	% Change 2000-2006
Average Employment Income	-23%	-33%

(DFO, 2011).

Table 1.2 *Landings by size of vessel (metric tons), Nova Scotia commercial fisheries, 1977-1985*

Year	Vessels < 25 GRT	% of total landings claimed by vessels < 25 GRT	Vessels > 25 GRT	% of total landings claimed by vessels > 25 GRT
1977	92,144	22.6	314,930	77.3
1978	86,123	19.3	358,746	80.6
1980	114,152	26.1	322,670	73.8
1981	119,435	25.5	348,038	74.4
1982	104,048	22.5	356,744	77.4
1983	82,549	19.3	343,305	80.6
1984	73,793	18.7	320,708	81.2
1985	69,532	15.2	387,010	84.7

(Source: DFO, 1978).

Table 1.2.1 *Landings by size of vessel (metric tons), Nova Scotia commercial fisheries, 1986-1987*

Year	Vessels < 35 feet	% of total landings claimed by vessels < 35 feet	Vessels 35-64.9 feet	% of total landings claimed by vessels 35-64.9 feet	Vessels 65-99.9 feet	% of total landings claimed by vessels 65-99.9 feet	> 100 feet	% of total landings claimed by vessels > 100 feet
1986	69,389	15.3	150,188	33.3	37,271	8.2	193,872	43.0
1987	74,681	15.6	154,845	32.5	48,906	10.2	198,011	41.5

(Source: DFO, 1987).

Table 1.2.2 Landings by size of vessel (metric tons), Nova Scotia commercial fisheries, 1988-2001

Year	Vessels < 45 feet	% of total landings claimed by vessels < 45 feet	Vessels 45-64.9 feet	% of total landings claimed by vessels 45-64.9 feet	Vessels 65-99.9 feet	% of total landings claimed by vessels 65-99.9 feet	Vessels > 100 feet	% of total landings claimed by vessels > 100 feet
1988	171,800	32.9	102,300	19.6	52,000	9.9	195,400	37.4
1989	162,800	33.1	86,500	17.5	42,000	8.5	200,200	40.7
1990	175,500	35.5	84,400	17.1	49,100	9.9	184,300	37.3
1991	156,100	30.1	76,100	14.7	49,500	9.5	235,600	45.5
1992	125,000	26.9	78,100	16.8	60,800	13.1	199,900	43.1
1993	94,500	24.5	60,600	15.7	53,400	13.8	177,100	45.9
1994	118,340	34.7	48,060	14.1	42,780	12.5	131,010	38.5
1995	100,160	36.9	36,120	13.3	35,670	13.1	99,100	36.5
1996	99,000	35.4	32,810	11.7	42,520	15.2	105,100	37.6
1997	108,580	36.2	31,080	10.3	42,820	14.2	117,400	39.1
1998	100,840	33.8	33,640	11.2	45,820	15.3	117,540	39.4
1999	107,250	35.1	35,690	11.6	49,370	16.1	113,140	37.0
2000	114,830	34.1	37,880	11.29	50,410	14.9	133,100	39.5
2001	130,640	35.6	43,700	11.9	57,370	15.6	134,730	36.7

(Source: DFO, 2001).



Table 1.3 *Value by size of vessel, Nova Scotia commercial fisheries, 1977 - 1985*

Year	Vessels < 25 GRT	% of total value claimed by vessels < 25 GRT	Vessels > 25 GRT	% of total value claimed by vessels > 25 GRT
1977	47,129	35.3	86,016	64.6
1978	56,795	29.0	138,593	70.9
1980	75,534	32.6	156,038	67.3
1981	88,476	33.4	175,648	66.5
1982	95,595	36.8	163,997	63.1
1983	102,011	36.8	174,501	63.12
1984	106,085	39.9	159,197	60.0
1985	110,981	34.5	210,278	65.4

(Source: DFO, 1978).

Table 1.3.1 *Value by size of vessel, Nova Scotia commercial fisheries, 1986-1987*

Year	< 35 feet	% of total value claimed by vessels < 35 feet	35-64.9 feet	% of total value claimed by vessels 35-64.9 feet	65-99.9 feet	% of total value claimed by vessels 65-99.9 feet	> 100 feet	% total value claimed by vessels > 100 feet
1986	155466	36.7	131,332	31.0	26,519	6.2	109,419	25.8
1987	193327	36.8	170,083	32.4	36,597	6.9	124,187	23.6

(Source: DFO, 1987).

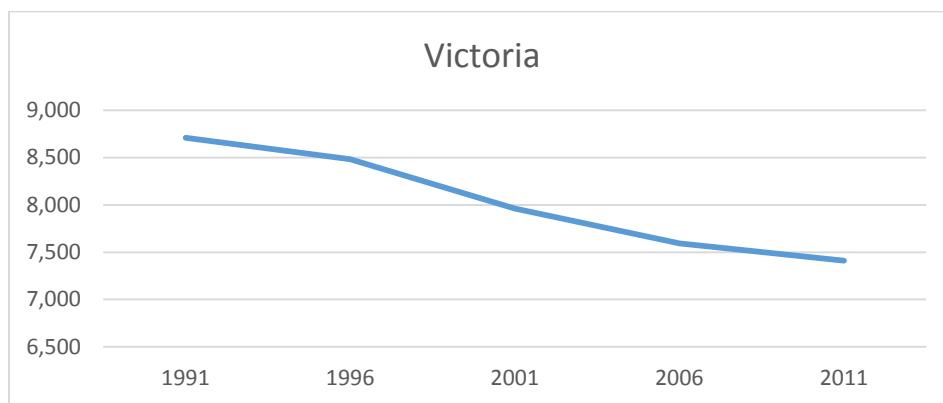
Table 1.3.2 *Value by size of vessel, Nova Scotia commercial fisheries, 1988-2001*

Year	<45 feet	% of total value claimed by vessels < 45 feet	45-64.9 feet	% total value claimed by vessels 45-64.9 feet	65-99.9 feet	% total value claimed by vessels 65-99.9 feet	> 100 feet	% of total value claimed by vessels > 100 feet
1988	238,400,000	54.4	67,700,000	15.4	25,900,000	5.9	106,200,000	24.2
1989	239,800,000	54.7	62,200,000	14.2	24,400,000	5.6	111,900,000	25.5
1990	246,200,000	55.3	59,600,000	13.4	25,200,000	5.7	113,900,000	25.6
1991	278,500,000	55.9	65,000,000	13.0	22,900,000	4.6	132,100,000	26.5
1992	289,700,000	57.1	68,300,000	13.5	24,400,000	4.8	125,300,000	24.7
1993	262,100,000	55.2	60,200,000	12.7	19,400,000	4.1	133,000,000	28.0
1994	301,840,000	60.0	57,810,000	11.5	15,300,000	3.0	127,930,000	25.4
1995	334,440,000	65.3	51,890,000	10.1	15,990,000	3.1	109,830,000	21.4
1996	306,550,000	65.7	38,200,000	8.2	16,360,000	3.5	105,140,000	22.6
1997	315,040,000	61.6	36,160,000	7.1	16,350,000	3.2	144,260,000	28.2
1998	327,180,000	60.3	40,570,000	7.5	16,230,000	3.0	158,540,000	29.2
1999	407,690,000	64.3	42,980,000	6.8	16,580,000	2.6	167,150,000	26.3
2000	445,320,000	63.2	55,710,000	7.9	21,940,000	3.1	181,580,000	25.8
2001	515,050,000	65.6	62,870,000	8.0	27,470,000	3.5	179,240,000	22.8

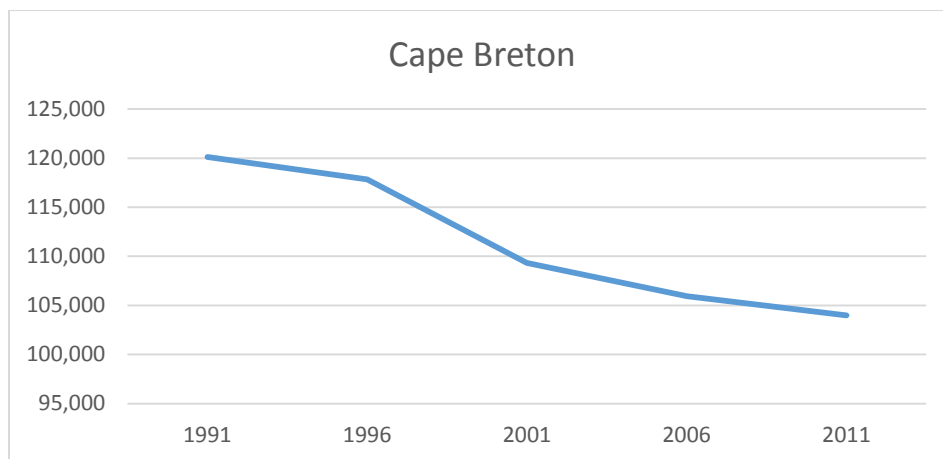
(Source: DFO, 2001).

## Appendix D

*Figures 1.0 – 1.9* Population trends in DFO Maritimes Region (Nova Scotian Counties)  
(Source: Nova Scotia Department of Finance, 2010.)



*Figure 1.0* Victoria County



*Figure 1.1* Cape Breton County

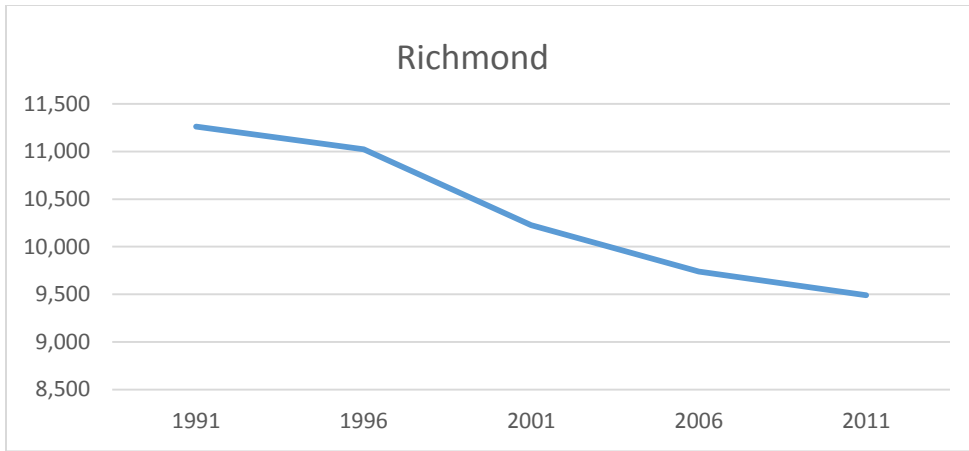


Figure 1.2 Richmond County

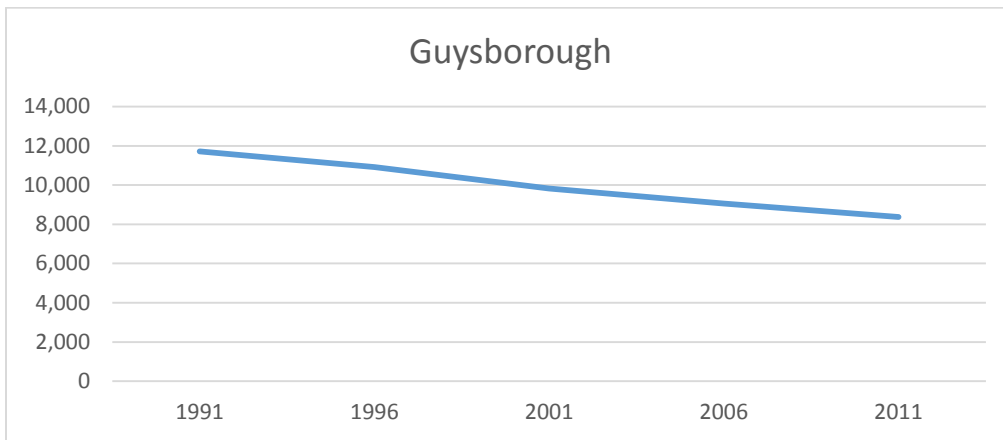


Figure 1.3 Guysborough County

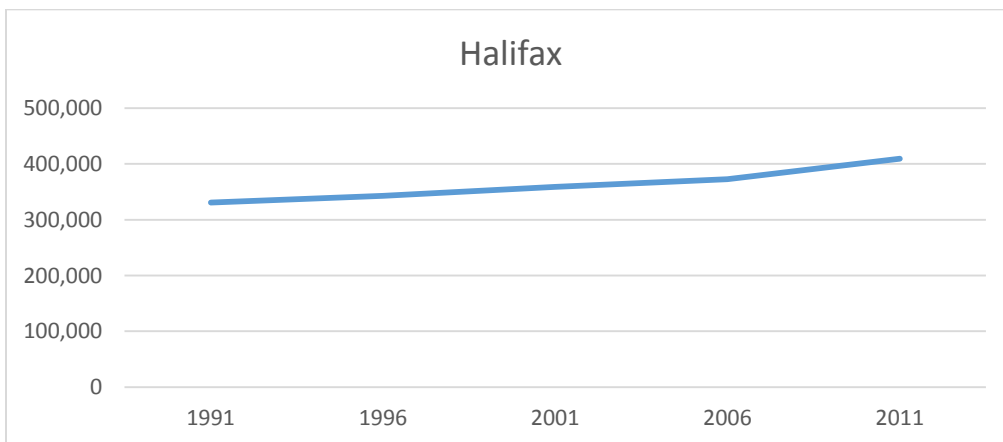


Figure 1.4 Halifax County

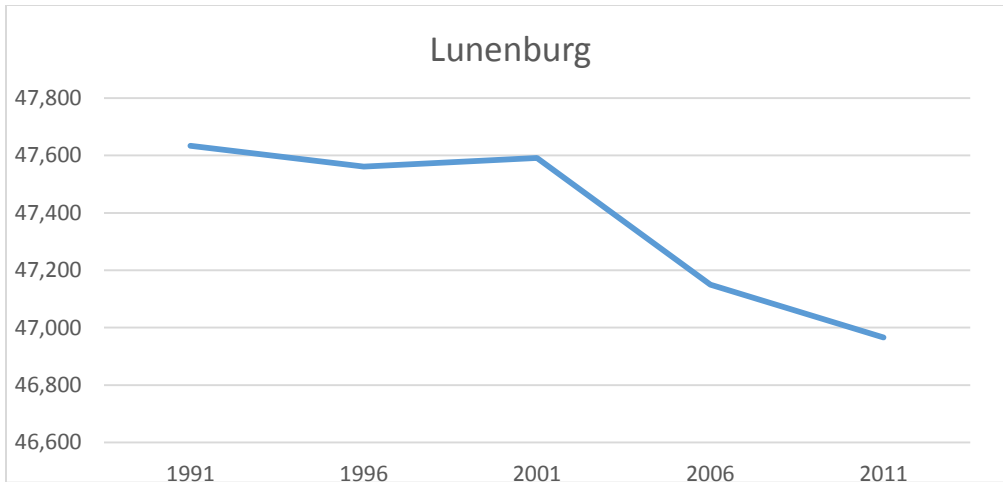


Figure 1.5 Lunenburg County

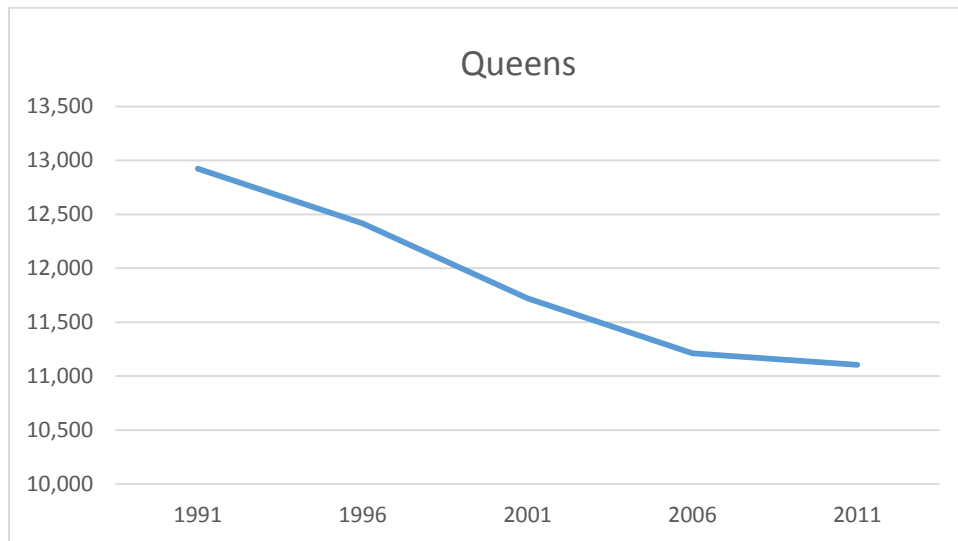


Figure 1.6 Queens County

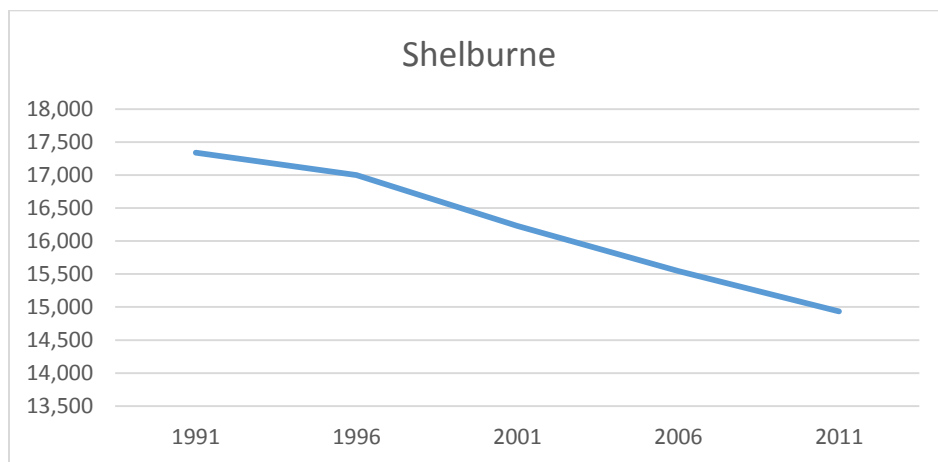


Figure 1.7 Shelburne County

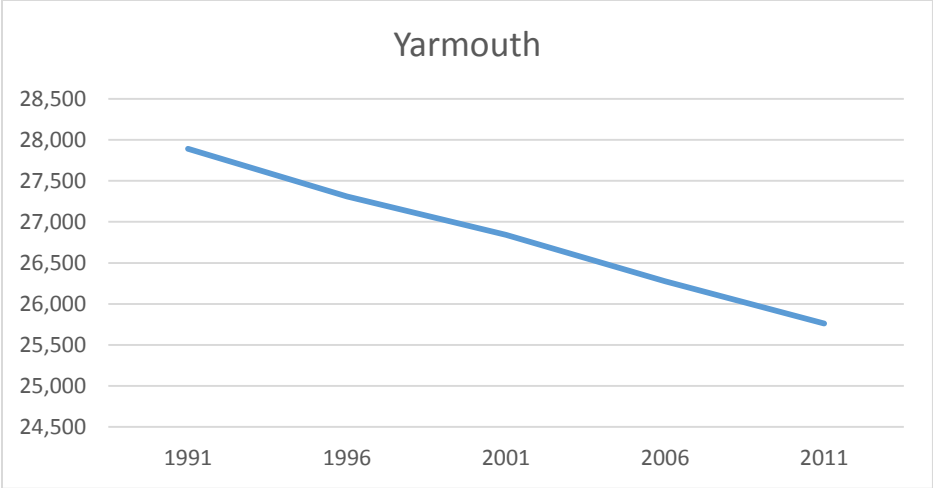


Figure 1.8 Yarmouth County

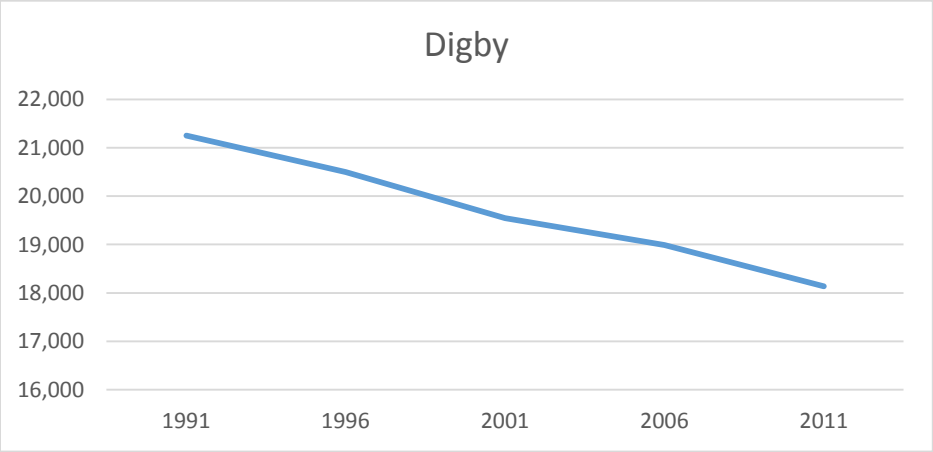


Figure 1.9 Digby County

## Appendix E – Interview and Survey response tables

Table 1.0 *Do any children go fishing?*

	<b>1988 (Captains and Wives) n=126 %</b>
<b>Do any children go fishing?</b>	
<i>Yes</i>	30.5
<i>No</i>	69.5
<i>1<sup>st</sup> born fishes</i>	42.5
<i>2<sup>nd</sup> born fishes</i>	42.5
<i>3<sup>rd</sup> born fishes</i>	30.3
<i>4<sup>th</sup> born fishes</i>	16.7
<i>5<sup>th</sup> born fishes</i>	17.2
<i>6<sup>th</sup> born fishes</i>	3.6

Table 1.1 *Community Attachment (belonging)<sup>14</sup>*

	<b>1988 (Captains) n=125 %</b>	Cumulative Percent	<b>1988 (Captains' Wives) n=126 %</b>	Cumulative Percent	<b>2001 N=159 %</b>	Cumulative Percent
<b>Do you feel that you...</b>						
<i>Really Belong</i>	77.6	77.6	68.8	68.8	78.6	78.6
<i>Belong</i>	21.6	99.2	26.4	95.2	19.5	98.1
<i>Don't Belong</i>	0.8	100	4.8	100	1.9	100

<sup>14</sup> Participants were asked “Would you tell me, how do you feel about fishing out of (ENTER NAME OF HARBOUR OR WHARF)? Do you feel that you a) really belong here? b) you belong here? c) you don’t belong here very much? or d) you don’t belong here at all?”

Table 1.2 *Community Attachment (help each other out)*<sup>15</sup>

	<b>1988 (Captains) n=126 %</b>	<b>1988 (Captains' Wives) n=126 %</b>	<b>2001 n=159 %</b>
<b>Help each other out</b>			
<i>Less than in the past</i>	43.7	42.1	33.1
<i>The same as in the past</i>	56.3	46.8	52.9
<i>More than in the past</i>	N/A <sup>16</sup>	10.3	14.0

Table 1.3 *Was your father a fisherman?*

	<b>1988 (Captains) n=126 %</b>	<b>1988 (Captains' Wives) n=126 %</b>	<b>2001 n=159 %</b>
<b>Was Father a fisherman?</b>			
<i>Yes</i>	85.7	65.1	84.9
<i>No</i>	14.3	34.9	15.1

Table 1.4 *Who else fishes/fished?*

<b>Who else in your family fishes or fished for their living?</b>	<b>2001 n=159 %</b>
<b>Father</b>	84.9
<b>Father's Father</b>	77.8
<b>Mother's Father</b>	57.3
<b>Father's Brothers</b>	66.9
<b>Mother's Brothers</b>	48.1
<b>Brothers</b>	51.0
<b>Sons</b>	28.0

<sup>15</sup> Participants were asked "Do you think that people fishing from this place help each other out less, the same, or more today than they did in the past?"

<sup>16</sup> This response was not offered to the Captains.



Table 1.5 *Who did you first fish with?*

<b>When you began fishing for your living, who did you begin fishing with?</b>	<b>2001 n=159 %</b>
<b>Father</b>	53.5
<b>Father's Father</b>	1.9
<b>Mother's Father</b>	1.3
<b>Father's Brothers</b>	2.5
<b>Mother's Brother</b>	1.3
<b>Brothers</b>	5.0
<b>Family Friend</b>	6.9
<b>Another kin relation</b>	5.7
<b>Other</b>	22.0

Table 1.6 *Who taught you the most about fishing?*

<b>Who would you say taught you the most about fishing?</b>	<b>2001 n=159 %</b>
<b>Father</b>	57.2
<b>Father's Father</b>	1.3
<b>Mother's Father</b>	1.3
<b>Father's Brothers</b>	2.5
<b>Mother's Brother</b>	0.6
<b>Brothers</b>	5.0
<b>Family Friend</b>	5.0
<b>Another kin relation</b>	3.8
<b>Other</b>	23.3

Table 1.7 *Years Education*

<b>What was the highest grade or year you completed in school, college, or university?</b>	<b>2001 n=158 %</b>
<b>Some high school</b>	74.1
<b>Completed high school</b>	16.5
<b>Some post-secondary school</b>	9.5