



Fig 7. Sandwort (*Honckenya peploides*) stabilizing drifting sand in mounds to 1 m high, West Spit.



Fig 8. Marram-Forb Grasslands with *Ammophila breviligulata*, *Achillea lanulosa*, *Lathyrus maritimus* and *Solidago sempervirens*.



Fig 9. Marram grasslands on Grassy Plain, dominated by *Ammophila breviligulata*.



Fig 10. Marram-Fescue grassland dominated by *Ammophila breviligulata*, *Festuca rubra* and *Anaphalis margaritacea*. Near Grassy Plain.

A total of seven terrestrial plant communities has been recognized in this study. These are: Sandwort, Marram-Forb, Marram, Marram-Fescue, Shrub Heath, Cranberry Heath, and Pondedge Herbaceous. Additional aquatic plant communities occurred in the fresh and brackish water ponds. Each of these communities is described briefly below.

(a) *Sandwort*. This community type develops on raw sand (Table I), and covers ca. 20.3 ha, or 0.6% of the island (Table IV). Major occurrences are at the extreme east and west ends of the island (Fig. 6). These are very exposed locations (Fig. 7), and it is likely that occasional catastrophic declines in these communities occur as a result of severe storms. For example, St. John found *Honckenya peploides* to be very common in 1913, whereas Erskine recorded it as scarce in 1952 (St. John 1921, Erskine 1953). These differences may reflect variations in recent storm activity, with subsequent effects on the Sandwort community. Total cover in two established Sandwort communities averaged 118 and 178% respectively (Table V). Virtually all the cover in these species-poor communities is contributed by *Honckenya peploides* (Table VI).

(b) *Marram-Forb*. This community type (Fig. 8) covers ca. 229 ha, or 8.7% of the island (Table IV). It occurs throughout, but particularly along the oceanic edges of the vegetated terrain (Fig. 6). The rate of sand accumulation is apparently high. To-

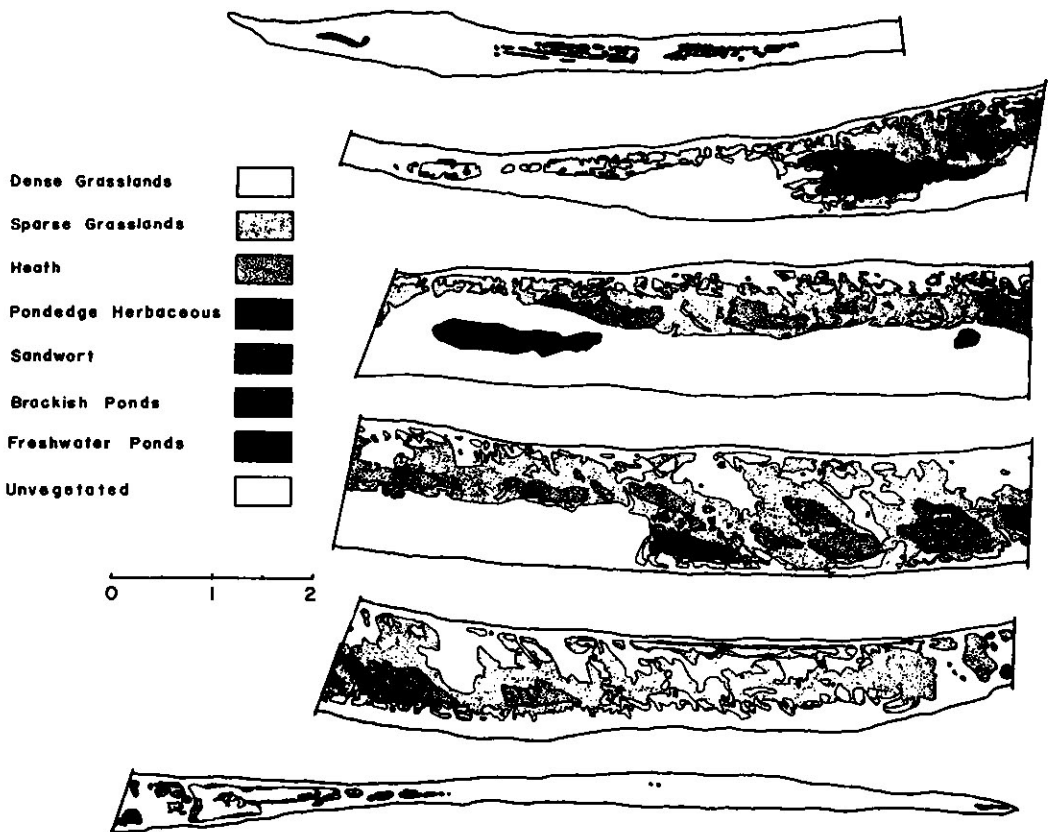


Fig 6. The plant communities of Sable Island.

Table V Summary of total cover, richness, and diversity of the quantitatively sampled plant communities.

Vegetation Type	Total cover (%)	Richness species/quadrat	Diversity
Sandwort	100-200	1.3	0.6
Marram-Forb	200-425	3.2	1.2
Sparse Marram	20-130	1.7	1.0
Marram-Fescue	20-120	4.4	2.0
Shrub Heath	100-330	11.2	2.9
Cranberry Heath	190-230	6.3	2.8

tal plant cover in the four Marram-Forb communities that were examined ranged from 173% to 400% ($\bar{x} \pm SD$ was 250% \pm 105%), and the community was moderately rich, averaging 3.2 species per quadrat (Table V). The most important species in the Marram-Forb community are *Ammophila breviligulata*, *Lathyrus maritimus*, and *Achillea lanulosa*, with lesser contributions by *Solidago sempervirens* and other species (Table VII). *Poa pratensis* is also important in some sites, although not in those quantitatively sampled.

Table VI Summary of the vegetation of the Sandwort communities.¹

Species	Cover (%; $\bar{x} \pm S.E.$)	Site S-1	Frequency (%)	Cover (%; $\bar{x} \pm S.E.$)	Site S-2	Frequency (%)
		Rel. Cover (%)			Rel. Cover (%)	
<i>Ammophila breviligulata</i>	0.4 \pm 0.1	0.8	30	0.2 \pm 0.2	0.1	15
<i>Cakile edentula</i>	P ¹	P	P	2.5 \pm 1.4	1.4	15
<i>Honckenya peploides</i>	118 \pm 23	99.2	100	175.3 \pm 29.0	98.5	100
<i>Solidago sempervirens</i>	P	P	P	P	P	P

¹P = present

²Data are based on twenty random 50 cm x 50 cm quadrats per site.

(c) *Marram*. Sparse grasslands (Figs. 9 & 10) ca. 772 ha, or 22.5% of the island (Table IV, these figures include both the Marram and Marram-Fescue communities, since they could not be reliably separated in the airphotos). Total plant cover in the five Marram communities that were examined ranged from 18% to 116% ($\bar{x} \pm SD$ was 58% \pm 40%; Table V). These communities are relatively species-poor, averaging only 1.6 species per quadrat (Table V). The most important species in the

Table VIII Summary of the vegetation of the Sparse Marram communities.¹

Species	Cover (%; $\bar{x} \pm S.E.$)	Site SM-1	Frequency (%)	Cover (%; $\bar{x} \pm S.E.$)	Site SM-2	Frequency (%)
		Rel. Cover (%)			Rel. Cover (%)	
<i>Achillea lanulosa</i>	P ¹	P	P	0.0	0.0	0
<i>Ammophila breviligulata</i>	81.0 \pm 4.1	89.0	100	115.3 \pm 12.4	99.2	100
<i>Anaphalis margaritacea</i>	0.0	0.0	0	0.0	0.0	0
<i>Cakile edentula</i>	0.0	0.0	0	0.2 \pm 0.2	0.2	10
<i>Festuca rubra</i>	0.0	0.0	0	0.0	0.0	0
<i>Honckenya peploides</i>	1.5 \pm 1.0	1.6	35	0.2 \pm 0.2	0.2	5
<i>Lathyrus maritima</i>	8.6 \pm 4.8	9.4	20	0.5 \pm 0.5	0.4	5
<i>Myrica pensylvanica</i>	0.0	0.0	0	0.0	0.0	0
<i>Poa pratensis</i>	0.0	0.0	0	0.0	0.0	0
<i>Rosa virginiana</i>	0.0	0.0	0	0.0	0.0	0
<i>Solidago sempervirens</i>	0.0	0.0	0	P	P	P

¹P = present; data are based on twenty random 50 cm x 50 cm quadrats per site.

Table VII Summary of the vegetation of the Marram-Forb communities.¹

Species	Site DM-1			Site DM-2		
	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
<i>Achillea lanulosa</i>	38.1 \pm 9.1	22.0	90	65.9 \pm 9.6	26.9	90
<i>Agropyron repens</i>	0.1 \pm 0.1	0.1	5	0.0	0.0	0
<i>Ammophila breviligulata</i>	54.2 \pm 10.5	31.3	100	67.3 \pm 7.3	27.5	100
<i>Cakile edentula</i>	0.0	0.0	0	0.0	0.0	0
<i>Honckenya peploides</i>	0.0	0.0	0	0.1 \pm 0.1	0.1	5
<i>Lathyrus maritimus</i>	70.6 \pm 9.9	40.7	100	106.7 \pm 6.5	43.6	100
<i>Rosa virginiana</i>	0.1 \pm 0.1	0.1	5	0.0	0.0	0
<i>Solidago sempervirens</i>	10.0 \pm 10.0	5.8	5	5.0 \pm 4.7	2.0	10

Species	Site DM-3			Site DM-4		
	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
<i>Achillea lanulosa</i>	50.0 \pm 13.9	12.5	70	16.9 \pm 3.4	9.3	75
<i>Agropyron repens</i>	0.0	0.0	0	1.4 \pm 0.5	0.8	30
<i>Ammophila breviligulata</i>	164.4 \pm 27.9	41.0	95	68.4 \pm 6.7	37.7	100
<i>Cakile edentula</i>	0.0	0.0	0	0.5 \pm 0.5	0.3	5
<i>Honckenya peploides</i>	0.0	0.0	0	0.0	0.0	0
<i>Lathyrus maritimus</i>	186.0 \pm 16.9	46.5	100	72.0 \pm 6.9	39.6	100
<i>Rosa virginiana</i>	0.0	0.0	0	0.0	0.0	0
<i>Solidago sempervirens</i>	P ¹	P	P	22.4 \pm 9.0	12.3	55

¹P = present; data are based on twenty random 50 cm x 50 cm quadrats per site.

Marram community is *Ammophila breviligulata*, with lesser contributions from *Lathyrus maritima*, *Solidago sempervirens*, and several other species (Table VIII). In a successional sense, it appears that the Marram community is an early seral stage that establishes on newly-available sand following a decline in rate of accumulation. On sites that remain stable over the longer term, Marram-Fescue communities may develop, or ultimately, heath-dominated communities (see 4. Successional Trends).

(d) *Marram-Fescue*. These sparse grasslands (Fig. 10) are found throughout the vegetated parts of the island, and they make up much of the 772 ha that are classi-

Site SM-3			Site SM-4			Site SM-5		
Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
0.0	0.0	0	0.2 \pm 0.2	0.4	3	0.0	0.0	0
21.2 \pm 3.1	74.6	100	36.3 \pm 2.3	83.1	100	14.1 \pm 1.3	79.7	100
1.9 \pm 1.3	6.7	15	3.0 \pm 1.5	6.9	20	1.1 \pm 0.8	6.2	10
0.0	0.0	0	0.0	0.0	0	P	P	P
0.6 \pm 0.3	2.1	35	0.1 \pm 0.1	0.2	3	0.8 \pm 0.4	4.5	30
0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
0.0	0.0	0	2.1 \pm 2.0	4.8	7	0.0	0.0	0
0.1 \pm 0.1	0.4	5	0.0	0.0	0	0.0	0.0	0
0.0	0.0	0	1.4 \pm 0.8	3.2	10	0.0	0.0	0
4.6 \pm 1.9	16.7	35	0.6 \pm 0.6	1.4	7	1.7 \pm 0.8	9.6	30

fied as sparse grasslands (Fig. 6, Table IV). Total plant cover in the four Marram-Fescue communities that were sampled ranged from 26% to 103% ($\bar{x} \pm SD$ was $58\% \pm 33\%$), and the communities are relatively rich, averaging 4.4 species per quadrat (Table V). The most important species in the Marram-Fescue communities are *Ammophila breviligulata*, *Anaphalis margaritacea*, *Festuca rubra*, *Fragaria virginiana*, *Rosa virginiana*, and *Myrica pensylvanica* (Table IX).

Table IX Summary of the vegetation of the Marram-Fescue communities.¹

Species	Site MF-1			Site MF-2		
	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
<i>Achillea lanulosa</i>	1.1±0.4	2.4	32	P ¹	P	P
<i>Ammophila breviligulata</i>	2.9±1.0	6.4	76	4.8±0.8	18.6	100
<i>Anaphalis margaritacea</i>	1.4±1.1	3.1	8	3.7±1.5	14.3	35
<i>Arenaria lateriflora</i>	0.1±0.1	0.2	4	0.0	0.0	0
<i>Aronia prunifolia</i>	0.0	0.0	0	0.0	0.0	0
<i>Aster novi-belgii</i>	0.0	0.0	0	0.0	0.0	0
<i>Carex silicea</i>	0.0	0.0	0	<0.1	<0.1	5
<i>Empetrum nigrum</i>	P	P	P	0.0	0.0	0
<i>Festuca rubra</i>	10.4±1.4	23.1	100	5.8±1.3	22.5	100
<i>Fragaria virginiana</i>	19.9±3.4	44.1	92	3.9±1.4	15.1	50
<i>Juncus balticus</i>	0.0	0.0	0	0.2±0.2	0.8	10
<i>Juniperus communis</i>	0.0	0.0	0	0.1±0.1	0.4	5
<i>Myrica pensylvanica</i>	0.7±0.7	1.6	4	5.3±2.9	20.5	20
<i>Oenothera cruciata</i>	0.1±0.1	0.2	8	0.0	0.0	0
<i>Poa pratensis</i>	0.0	0.0	0	<0.1	<0.1	5
<i>Potentilla tridentata</i>	0.0	0.0	0	0.0	0.0	0
<i>Rosa virginiana</i>	8.1±1.9	18.0	64	0.3±0.2	1.2	10
<i>Rumex acetosella</i>	0.1±0.1	0.2	8	0.1±0.1	0.4	10
<i>Smilacina stellata</i>	P	P	P	0.0	0.0	0
<i>Solidago sempervirens</i>	0.3±0.3	0.7	4	1.6±0.9	6.2	35
<i>Trientalis borealis</i>	0.0	0.0	0	0.0	0.0	0
<i>Vaccinium angustifolium</i>	0.0	0.0	0	0.0	0.0	0

Species	Site MF-3			Site MF-4		
	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
<i>Achillea lanulosa</i>	0.1±0.1	0.2	5	5.8±1.1	5.7	75
<i>Ammophila breviligulata</i>	1.9±0.4	3.3	55	23.7±2.3	23.2	100
<i>Anaphalis margaritacea</i>	7.8±2.7	13.4	55	18.0±5.2	17.6	65
<i>Arenaria lateriflora</i>	0.0	0.0	0	0.0	0.0	0
<i>Aronia prunifolia</i>	0.0	0.0	0	0.8±0.8	0.8	5
<i>Aster novi-belgii</i>	0.6±0.6	1.0	5	1.8±1.0	1.8	25
<i>Carex silicea</i>	0.3±0.2	0.5	10	0.0	0.0	0
<i>Empetrum nigrum</i>	1.3±1.1	2.2	10	0.0	0.0	0
<i>Festuca rubra</i>	19.1±1.9	32.8	100	4.2±1.1	4.1	75
<i>Fragaria virginiana</i>	11.7±2.7	20.1	80	0.3±0.3	0.3	5
<i>Juncus balticus</i>	P	P	P	0.0	0.0	0
<i>Juniperus communis</i>	0.0	0.0	0	0.0	0.0	0
<i>Myrica pensylvanica</i>	11.5±4.0	19.8	40	9.2±3.6	9.0	35
<i>Oenothera cruciata</i>	P	P	P	0.0	0.0	0
<i>Poa pratensis</i>	0.0	0.0	0	0.2±0.2	0.2	10
<i>Potentilla tridentata</i>	0.4±0.3	0.7	10	0.0	0.0	0
<i>Rosa virginiana</i>	2.8±1.6	4.8	20	21.7±8.1	21.3	70
<i>Rumex acetosella</i>	0.4±0.4	0.7	15	0.0	0.0	0
<i>Smilacina stellata</i>	P	P	P	0.0	0.0	0
<i>Solidago sempervirens</i>	0.3±0.2	0.5	10	3.6±1.1	3.5	45
<i>Trientalis borealis</i>	0.0	0.0	0	0.1±0.1	0.1	5
<i>Vaccinium angustifolium</i>	P	P	P	12.6±7.3	12.4	35

¹P = present; data based on twenty random 50 cm x 50 cm quadrats per site.



Fig 11. An old sand-road through Shrub Heath vegetation dominated by *Empetrum nigrum*, *Juniperus communis* var. *megistocarpa*, *Myrica pensylvanica*, *Rosa virginiana*, *Juniperus horizontalis*, *Vaccinium angustifolium* and *Aster nova-belgii*.



Fig 12. Shrub Heath vegetation with *Juniperus communis* var. *megistocarpa*, *Juniperus horizontalis*, *Myrica pensylvanica* and *Empetrum nigrum*.



Fig 13. Cranberry Heath vegetation dominated by *Vaccinium macrocarpon*, *Juncus balticus*, *Myrica pensylvanica* and *Aster nova-belgii*. Near No. 3 Life Saving Station.

(e) *Shrub Heath*. The Shrub Heath community type (Figs. 11 & 12) is found in certain locations in interior parts of the island (Fig. 6). The soil is acidic (pH 5.7) and sandy but with relatively higher organic matter content and nutrients (Table I). In total, heath communities cover ca. 147 ha, or 4.3% of the surface of the island (Table IV). Most of this is Shrub Heath, with lesser contributions of Cranberry Heath (discussed next). Total plant cover in the eight Shrub Heath communities that were examined ranged from 105 to 325% ($\bar{x} \pm SD$ was $190\% \pm 71\%$), and the communities are quite rich, averaging 10.2 species per quadrat (Table V). The most important species in the Shrub Heath communities are *Empetrum nigrum*, *Juniperus communis*, *Myrica pensylvanica*, *Rosa virginiana*, and *Vaccinium angustifolium*, with a relatively large number of associated species (Table X). Lichens were prevalent in some areas, including *Cladina stellaris*, *Cladina rangiferina* and *Coelocaulon aculeatum*. Occasionally important mosses included *Polytrichum commune* and *Dicranum condensatum*. The various Shrub Heath communities were rather variable in relative species composition, and at any location any of the aforementioned species could assume dominance. An extreme example of this occurred at site SH-3, where the introduced heath *Calluna vulgaris* contributed 92.4% of the relative cover. This species was not present at any of the other seven Shrub Heath communities that were sampled. In terms of succession, the Shrub Heath community type represents the climax seral stage on well-drained sites on the island.

An interesting aspect of the Shrub Heath and perhaps the Cranberry Heath vegetation on the island is that it differs from similar communities on the mainland. For example, several species that are important constituents of mainland heath, e.g. *Myrica asplenifolia*, *Pteridium aquilinum*, *Solidago bicolor*, *S. puberula*, *Kalmia angustifolia*, and *Arctostaphylos uva-ursi* are altogether lacking on the island. In terms of plant associations, the Heath communities on the island may be unique.

(f) *Cranberry Heath*. The Cranberry Heath community (Fig. 13) is found in intermittently wet locations in interior parts of the island, usually in association with Shrub Heath or Lakeside Herbaceous communities. Soil pH is relatively low (4.9) and organic matter is relatively high (Table I). Total plant cover in the four Cranberry Heath communities ranged from 197% to 227% ($\bar{x} \pm SD$ was $215\% \pm 13\%$), and the communities were quite rich, averaging 7.0 species per quadrat (Table V). The most important species in the Cranberry Heath communities is *Vaccinium macrocarpon*, with lesser contributions of *Juncus balticus*, *Myrica pensylvanica*, *Aster novi-belgii*, *Viola lanceolata*, and *Calopogon tuberosus*, plus many minor associates (Table XI).

Important mosses of some Cranberry Heaths include *Aulacomium palustre*, *Cladopodiella fluitans*, *Sphagnum imbricatum* and *S. palustre*.

(g) *Freshwater Pools and Borders*. Because of the great heterogeneity in the composition and distribution of these plant communities, they were not sampled quantitatively using quadrats. However, they were carefully observed, and the following subjective descriptions illustrate the nature of the plant communities.

In total, freshwater pools (Figs. 14, 15, and 16) covered some 26.3 ha, and their bordering Pondedge Herbaceous communities covered some 23.6 ha, for a combined 1.5% of the island's surface area (Table IV). These freshwater pools and their associated wetlands are common over much of the interior parts of the island (Fig. 6). Most of the pools have a pH of 5.0 to 5.7, and there is relatively little variation in other aspects of water chemistry (numbers 1-4 in Table II). In a physical sense, the ponds represent surface exposures of the large rainwater-fed freshwater lens that underlies Sable Island (Hennigar 1976).

Table X Summary of the vegetation of the Shrub Heath communities.
 P = present; data based on twenty random 50 cm x 50 cm quadrats per site.

Species	Site SH-1			Site SH-2		
	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
<i>Achillea lanulosa</i>	0.1±0.1	<0.1	5	0.4±0.2	0.2	15
<i>Ammophila breviligulata</i>	2.7±0.7	2.2	70	0.6±0.3	0.3	35
<i>Anaphalis margaritacea</i>	12.4±3.2	10.0	80	2.6±1.0	1.5	55
<i>Anthoxanthum odoratum</i>	0.0	0.0	0	0.1±0.1	<0.1	10
<i>Arenaria lateriflora</i>	0.3±0.1	0.2	20	0.7±0.2	0.4	45
<i>Aronia prunifolia</i>	0.0	0.0	0	P	P	P
<i>Aster novi-belgii</i>	4.3±0.8	3.5	35	4.4±0.8	2.5	100
<i>Calluna vulgaris</i>	0.0	0.0	0	0.0	0.0	0
<i>Carex emmonsii</i>	0.0	0.0	0	0.0	0.0	0
<i>Carex silicea</i>	0.1±0.1	0.1	10	0.0	0.0	0
<i>Cerastium vulgatum</i>	0.0	0.0	0	0.0	0.0	0
<i>Coptis trifolia</i>	0.0	0.0	0	0.0	0.0	0
<i>Danthonia spicata</i>	0.0	0.0	0	0.0	0.0	0
<i>Empetrum nigrum</i>	26.0±6.5	20.9	70	96.8±11.7	54.5	95
<i>Euphrasia randii</i>	0.0	0.0	0	0.0	0.0	0
<i>Festuca rubra</i>	6.6±1.6	5.3	100	2.0±0.4	1.1	100
<i>Fragaria virginiana</i>	4.4±1.7	3.5	50	0.5±0.2	0.3	25
<i>Gnaphalium obtusata</i>	0.0	0.0	0	0.0	0.0	0
<i>Hieracium pilosella</i>	0.1±0.1	<0.1	10	0.0	0.0	0
<i>Hieracium scabrum</i>	0.3±0.2	0.2	10	0.1±0.1	0.1	10
<i>Juncus balticus</i>	0.3±0.2	0.2	15	0.1±0.1	<0.1	5
<i>Juniperus communis</i>	3.4±3.2	2.7	10	2.5±1.8	1.4	30
<i>Juniperus horizontalis</i>	0.0	0.0	0	P	P	P
<i>Leontodon autumnalis</i>	0.0	0.0	0	0.0	0.0	0
<i>Linnaea borealis</i>	0.0	0.0	0	0.0	0.0	0
<i>Luzula campestris</i>	0.0	0.0	0	0.2±0.1	0.1	15
<i>Lycopus uniflorus</i>	0.0	0.0	0	0.0	0.0	0
<i>Mitchella repens</i>	0.1±0.1	<0.1	5	0.0	0.0	0
<i>Myrica pensylvanica</i>	25.1±3.3	20.3	95	42.5±4.8	23.8	100
<i>Plantago lanceolata</i>	0.0	0.0	0	0.0	0.0	0
<i>Platanthera clavellata</i>	0.0	0.0	0	0.1±0.1	<0.1	5
<i>Platanthera lacera</i>	0.0	0.0	0	0.1±0.1	<0.1	5
<i>Platanthera viridis</i>	0.0	0.0	0	0.0	0.0	0
<i>Poa pratensis</i>	0.0	0.0	0	0.0	0.0	0
<i>Potentilla tridentata</i>	21.6±5.4	17.3	70	7.8±2.3	4.4	65
<i>Prenanthes trifoliolata</i>	0.0	0.0	0	0.0	0.0	0
<i>Rhinanthus crista-galli</i>	P	P	P	0.0	0.0	0
<i>Rosa virginiana</i>	4.8±1.4	3.8	60	3.2±1.1	1.8	70
<i>Rubus hispidus</i>	0.0	0.0	0	0.0	0.0	0
<i>Rumex acetosella</i>	0.5±0.2	0.4	50	0.8±0.6	0.4	25
<i>Sisyrinchium angustifolium</i>	0.0	0.0	0	0.0	0.0	0
<i>Smilacina stellata</i>	0.9±0.7	0.7	10	0.1±0.1	<0.1	5
<i>Solidago sempervirens</i>	0.7±0.4	0.6	15	0.0	0.0	0
<i>Spartina pectinata</i>	0.0	0.0	0	0.0	0.0	0
<i>Spiranthes romanzoffiana</i>	0.1±0.1	0.1	5	P	P	P
<i>Thalictrum polygamum</i>	0.0	0.0	0	0.0	0.0	0
<i>Trientalis borealis</i>	0.2±0.1	0.2	15	0.7±0.2	0.4	60
<i>Trifolium repens</i>	0.0	0.0	0	0.0	0.0	0
<i>Vaccinium angustifolium</i>	7.6±2.4	6.1	50	12.1±3.0	6.8	75
<i>Vaccinium macrocarpon</i>	2.1±1.8	1.7	10	0.1±0.1	<0.1	5
<i>Viburnum cassinoides</i>	0.0	0.0	0	0.0	0.0	0
<i>Viola lanceolata</i>	0.0	0.0	0	0.0	0.0	0
<i>Viola septentrionalis</i>	0.0	0.0	0	P	P	P
unidentified	0.0	0.0	0	0.0	0.0	0

Species	Site SH-3			Site SH-4		
	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
<i>Achillea lanulosa</i>	0.0	0.0	0	0.1±0.1	0.1	5
<i>Ammophila breviligulata</i>	0.2±0.2	0.1	10	1.0±0.6	0.4	15
<i>Anaphalis margaritacea</i>	0.0	0.0	0	0.1	0.1	10
<i>Anthoxanthum odoratum</i>	0.4±0.2	0.1	15	3.3±1.5	1.4	70
<i>Arenaria lateriflora</i>	0.1±0.1	0.1	10	0.9±0.3	0.4	40
<i>Aronia prunifolia</i>	2.9±1.3	0.9	45	0.4±0.4	0.2	5
<i>Aster novi-belgii</i>	0.3±0.1	0.1	20	4.9±0.5	2.1	95
<i>Calluna vulgaris</i>	300.0±20.6	92.4	100	0.0	0.0	0
<i>Carex emmonsii</i>	0.0	0.0	0	P	P	P
<i>Carex silicea</i>	0.0	0.0	0	0.0	0.0	0
<i>Cerastium vulgatum</i>	0.0	0.0	0	0.4±0.2	0.2	25
<i>Coptis trifolia</i>	0.0	0.0	0	2.3±2.3	1.0	5
<i>Danthonia spicata</i>	0.0	0.0	0	0.0	0.0	0
<i>Empetrum nigrum</i>	0.0	0.0	0	77.6±14.7	33.0	95
<i>Euphrasia randii</i>	0.0	0.0	0	0.0	0.0	0
<i>Festuca rubra</i>	0.4±0.2	0.1	20	2.9±0.5	1.2	95
<i>Fragaria virginiana</i>	0.0	0.0	0	0.8±0.3	0.3	45
<i>Gnaphalium obtusata</i>	0.0	0.0	0	0.0	0.0	0
<i>Hieracium pilosella</i>	0.0	0.0	0	0.0	0.0	0
<i>Hieracium scabrum</i>	0.0	0.0	0	0.0	0.0	0
<i>Juncus balticus</i>	4.3±0.7	1.3	85	0.0	0.0	0
<i>Juniperus communis</i>	0.0	0.0	0	104.5±21.5	44.5	90
<i>Juniperus horizontalis</i>	0.0	0.0	0	0.4±0.3	0.2	10
<i>Leontodon autumnalis</i>	0.0	0.0	0	0.0	0.0	0
<i>Linnaea borealis</i>	0.0	0.0	0	0.0	0.0	0
<i>Luzula campestris</i>	0.1±0.1	0.1	5	0.4±0.2	0.2	30
<i>Lycopus uniflorus</i>	0.2±0.1	0.1	10	0.0	0.0	0
<i>Mitchella repens</i>	0.0	0.0	0	0.5±0.4	0.2	15
<i>Myrica pensylvanica</i>	10.5±3.6	3.2	65	7.1±2.6	3.0	65
<i>Plantago lanceolata</i>	0.0	0.0	0	0.0	0.0	0
<i>Platanthera clavellata</i>	0.2±0.1	0.1	10	P	P	P
<i>Platanthera lacera</i>	0.1±0.1	0.1	10	0.6±0.2	0.1	25
<i>Platanthera viridis</i>	0.0	0.0	0	0.0	0.0	0
<i>Poa pratensis</i>	0.0	0.0	0	0.4±0.2	0.2	20
<i>Potentilla tridentata</i>	0.5±0.4	0.2	15	1.8±1.7	0.8	10
<i>Prenanthes trifoliolata</i>	0.0	0.0	0	0.3±0.2	0.1	20
<i>Rhinanthus crista-galli</i>	0.0	0.0	0	0.0	0.0	0
<i>Rosa virginiana</i>	0.9±0.4	0.3	25	4.3±1.6	1.8	55
<i>Rubus hispidus</i>	0.0	0.0	0	1.9±1.1	0.8	20
<i>Rumex acetosella</i>	0.1±0.1	0.1	5	0.0	0.0	0
<i>Sisyrinchium angustifolium</i>	0.0	0.0	0	0.1±0.1	0.1	5
<i>Smilacina stellata</i>	0.1	0.1	5	0.2±0.2	0.1	5
<i>Solidago sempervirens</i>	0.0	0.0	0	0.0	0.0	0
<i>Spartina pectinata</i>	0.0	0.0	0	0.0	0.0	0
<i>Spiranthes romanzoffiana</i>	0.0	0.0	0	P	P	P
<i>Thalictrum polygamum</i>	0.4±0.2	0.1	25	2.3±1.4	1.0	30
<i>Trientalis borealis</i>	0.5±0.2	0.2	45	0.6±0.2	0.3	40
<i>Trifolium repens</i>	0.0	0.0	0	0.0	0.0	0
<i>Vaccinium angustifolium</i>	1.1±0.5	0.3	35	14.9±4.1	6.3	90
<i>Vaccinium macrocarpon</i>	1.5±1.2	0.5	20	0.0	0.0	0
<i>Viburnum cassinoides</i>	0.0	0.0	0	0.0	0.0	0
<i>Viola lanceolata</i>	0.0	0.0	0	0.0	0.0	0
<i>Viola septentrionalis</i>	0.0	0.0	0	0.1±0.1	0.1	5
unidentified	0.1	0.1	5	0.0	0.0	0

Table X (continued)

Species	Site SH-5			Site SH-6		
	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
<i>Achillea lanulosa</i>	0.4±0.2	0.2	20	0.6±0.4	0.2	15
<i>Ammophila breviligulata</i>	1.1±0.5	0.5	35	1.8±0.8	0.9	60
<i>Anaphalis margaritacea</i>	2.8±1.3	1.3	30	0.7±0.3	0.3	25
<i>Anthoxanthum odoratum</i>	3.2±0.7	1.5	75	4.1±1.1	2.0	85
<i>Arenaria lateriflora</i>	2.1±0.6	1.0	75	1.9±0.4	0.9	85
<i>Aronia prunifolia</i>	14.6±4.0	6.9	65	5.3±1.8	2.6	55
<i>Aster novi-belgii</i>	7.8±1.5	3.7	100	8.0±1.4	3.9	95
<i>Calluna vulgaris</i>	0.0	0.0	0	0.0	0.0	0
<i>Carex emmonsii</i>	0.0	0.0	0	0.0	0.0	0
<i>Carex silicea</i>	0.0	0.0	0	0.0	0.0	0
<i>Cerastium vulgatum</i>	0.2±0.1	0.1	15	0.6±0.3	0.3	30
<i>Coptis trifolia</i>	0.0	0.0	0	0.0	0.0	0
<i>Danthonia spicata</i>	0.0	0.0	0	0.1±0.1	0.1	10
<i>Empetrum nigrum</i>	54.9±20.6	26.1	50	57.3±11.1	27.7	70
<i>Euphrasia randii</i>	0.0	0.0	0	2.6±2.0	1.3	25
<i>Festuca rubra</i>	3.6±0.4	1.7	95	3.4±0.4	1.7	100
<i>Fragaria virginiana</i>	5.4±1.7	2.6	60	4.6±1.4	2.2	70
<i>Gnaphalium obtusata</i>	0.0	0.0	0	0.0	0.0	0
<i>Hieracium pilosella</i>	0.4±0.3	0.2	15	0.0	0.0	0
<i>Hieracium scabrum</i>	0.0	0.0	0	0.0	0.0	0
<i>Juncus balticus</i>	0.5±0.3	0.2	15	2.1±0.7	1.0	55
<i>Juniperus communis</i>	P	P	P	14.6±5.4	7.1	40
<i>Juniperus horizontalis</i>	0.0	0.0	0	12.7±5.1	6.2	45
<i>Leontodon autumnalis</i>	P	P	P	P	P	P
<i>Linnaea borealis</i>	0.0	0.0	0	13.5±4.5	6.6	65
<i>Luzula campestris</i>	0.4±0.2	0.2	20	0.5±0.2	0.2	35
<i>Lycopus uniflorus</i>	0.0	0.0	0	0.2±0.1	0.1	15
<i>Mitchella repens</i>	5.6±3.2	2.7	20	5.9±2.0	2.9	35
<i>Myrica pensylvanica</i>	40.0±5.3	19.0	100	13.4±2.8	6.5	90
<i>Plantago lanceolata</i>	0.0	0.0	0	0.4±0.4	0.2	5
<i>Platanthera clavellata</i>	0.1±0.1	0.1	5	P	P	P
<i>Platanthera lacera</i>	0.0	0.0	0	0.0	0.0	0
<i>Platanthera viridis</i>	0.0	0.0	0	0.2±0.2	0.1	10
<i>Poa pratensis</i>	0.0	0.0	0	0.4±0.2	0.2	40
<i>Potentilla tridentata</i>	5.5±2.8	2.6	35	0.0	0.0	0
<i>Prenanthes trifoliolata</i>	P	P	P	P	P	P
<i>Rhinanthus crista-galli</i>	0.3±0.3	0.1	15	0.8±0.5	0.3	25
<i>Rosa virginiana</i>	16.2±2.7	7.7	95	7.8±1.5	3.8	100
<i>Rubus hispidus</i>	P	P	P	1.4±0.9	0.7	15
<i>Rumex acetosella</i>	0.1±0.1	<0.1	5	0.2±0.1	0.1	15
<i>Sisyrinchium angustifolium</i>	0.2±0.1	0.1	20	0.1±0.1	0.1	5
<i>Smilacina stellata</i>	6.8±2.7	3.2	40	7.7±2.1	3.7	70
<i>Solidago sempervirens</i>	0.0	0.0	0	0.0	0.0	0
<i>Spartina pectinata</i>	P	P	P	0.0	0.0	0
<i>Spiranthes romanzoffiana</i>	P	P	P	0.0	0.0	0
<i>Thalictrum polygamum</i>	8.7±1.9	4.1	70	4.7±2.1	2.3	35
<i>Trientalis borealis</i>	1.4±0.3	0.7	85	1.1±0.3	0.5	65
<i>Trifolium repens</i>	P	P	P	0.3±0.2	0.2	20
<i>Vaccinium angustifolium</i>	26.3±5.0	12.6	100	26.6±6.0	12.9	100
<i>Vaccinium macrocarpon</i>	0.2±0.1	0.1	20	0.2±0.1	0.1	20
<i>Viburnum cassinoides</i>	0.0	0.2	0	0.1±0.1	0.1	5
<i>Viola lanceolata</i>	0.4±0.2	0.2	20	0.0	0.0	0
<i>Viola septentrionalis</i>	1.3±0.6	0.6	40	0.1±0.1	<0.1	5
unidentified	0.0	0.0	0	0.0	0.0	0

Species	Site SH-7			Site SH-8		
	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
<i>Achillea lanulosa</i>	0.0	0.0	0	1.4±0.6	1.3	45
<i>Ammophila breviligulata</i>	0.8±0.2	0.6	45	0.8±0.3	0.8	55
<i>Anaphalis margaritacea</i>	0.7±0.4	0.5	20	0.7±0.3	0.7	35
<i>Anthoxanthum odoratum</i>	0.2±0.1	0.1	10	9.7±2.6	9.3	95
<i>Arenaria lateriflora</i>	<0.1	<0.1	5	0.3±0.1	0.3	45
<i>Aronia prunifolia</i>	0.1±0.1	0.1	5	P	P	P
<i>Aster novi-belgii</i>	1.1±0.6	0.8	40	2.5±0.8	2.4	65
<i>Calluna vulgaris</i>	0.0	0.0	0	0.0	0.0	0
<i>Carex emmonsii</i>	0.0	0.0	0	0.0	0.0	0
<i>Carex silicea</i>	0.1±0.1	<0.1	5	0.8±0.3	0.8	25
<i>Cerastium vulgatum</i>	0.0	0.0	0	0.3±0.1	0.3	40
<i>Coptis trifolia</i>	0.0	0.0	0	0.0	0.0	0
<i>Danthonia spicata</i>	0.0	0.0	0	0.0	0.0	0
<i>Empetrum nigrum</i>	29.8±8.8	22.0	55	2.3±2.0	2.2	15
<i>Euphrasia randii</i>	0.0	0.0	0	0.0	0.0	0
<i>Festuca rubra</i>	4.0±1.5	3.0	90	3.1±1.1	3.0	100
<i>Fragaria virginiana</i>	0.5±0.4	0.4	15	5.0±2.0	4.8	80
<i>Gnaphalium obtusata</i>	0.0	0.0	0	P	P	P
<i>Hieracium pilosella</i>	0.0	0.0	0	0.0	0.0	0
<i>Hieracium scabrum</i>	P	P	P	<0.1	<0.1	10
<i>Juncus balticus</i>	0.0	0.0	0	0.4±0.2	0.4	15
<i>Juniperus communis</i>	21.2±14.2	15.7	25	0.2±0.2	0.2	5
<i>Juniperus horizontalis</i>	15.9±4.6	11.8	50	P	P	P
<i>Leontodon autumnalis</i>	0.0	0.0	0	P	P	P
<i>Linnaea borealis</i>	P	P	P	0.0	0.0	0
<i>Luzula campestris</i>	0.1±0.1	0.1	15	0.1±0.1	0.1	15
<i>Lycopus uniflorus</i>	0.0	0.0	0	0.1±0.1	0.1	5
<i>Mitchella repens</i>	0.3±0.3	0.2	5	0.0	0.0	0
<i>Myrica pensylvanica</i>	37.1±5.3	27.4	95	37.2±4.3	35.4	100
<i>Plantago lanceolata</i>	0.0	0.0	0	0.0	0.0	0
<i>Platanthera clavellata</i>	0.0	0.0	0	0.0	0.0	0
<i>Platanthera lacera</i>	0.0	0.0	0	0.0	0.0	0
<i>Platanthera viridis</i>	0.0	0.0	0	0.0	0.0	0
<i>Poa pratensis</i>	0.0	0.0	0	0.0	0.0	0
<i>Potentilla tridentata</i>	0.0	0.0	0	0.0	0.0	0
<i>Prenanthes trifoliolata</i>	0.0	0.0	0	0.0	0.0	0
<i>Rhinanthus crista-galli</i>	0.0	0.0	0	0.1±0.1	<0.1	15
<i>Rosa virginiana</i>	1.0±0.5	0.7	30	2.7±1.0	2.6	50
<i>Rubus hispidus</i>	0.0	0.0	0	1.1±0.8	1.0	15
<i>Rumex acetosella</i>	0.1±0.1	0.1	10	1.0±0.5	1.0	45
<i>Sisyrinchium angustifolium</i>	0.0	0.0	0	0.0	0.0	0
<i>Smilacina stellata</i>	0.1±0.1	0.1	10	0.3±0.3	0.3	5
<i>Solidago sempervirens</i>	0.1±0.1	0.1	10	0.3±0.2	0.3	15
<i>Spartina pectinata</i>	0.0	0.0	0	0.0	0.0	0
<i>Spiranthes romanzoffiana</i>	0.0	0.0	0	0.0	0.0	0
<i>Thalictrum polygamum</i>	0.0	0.0	0	0.0	0.0	0
<i>Trientalis borealis</i>	0.2±0.1	0.1	20	0.2±0.1	0.2	15
<i>Trifolium repens</i>	0.0	0.0	0	0.0	0.0	0
<i>Vaccinium angustifolium</i>	21.8±5.6	16.2	90	33.8±6.2	32.3	85
<i>Vaccinium macrocarpon</i>	0.0	0.0	0	<0.1	<0.1	5
<i>Viburnum cassinoides</i>	0.0	0.0	0	0.0	0.0	0
<i>Viola lanceolata</i>	0.0	0.0	0	0.4±0.2	0.4	30
<i>Viola septentrionalis</i>	0.0	0.0	0	0.0	0.0	0
unidentified	0.0	0.0	0	0.0	0.0	0

Table XI Summary of the vegetation of the Cranberry Heath communities.¹

Species	Site CH-1			Site CH-2		
	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
<i>Achillea lanulosa</i>	0.1±0.1	<0.1	10	0.0	0.0	0
<i>Agalinus neoscotica</i>	1.0±1.0	0.4	5	0.0	0.0	0
<i>Agrostis scabra</i>	0.5±0.4	0.2	15	0.6±0.2	0.3	30
<i>Agrostis stolonifera</i>	0.0	0.0	0	0.8±0.8	0.4	5
<i>Ammophila breviligulata</i>	0.3±0.1	0.1	20	0.4±0.3	0.2	15
<i>Anaphalis margaritacea</i>	0.0	0.0	0	0.0	0.0	0
<i>Anthoxanthum odoratum</i>	0.0	0.0	0	0.2±0.1	0.1	15
<i>Arenaria lateriflora</i>	0.1±0.1	<0.1	5	0.1±0.1	<0.1	5
<i>Aronia prunifolia</i>	0.0	0.0	0	0.2±0.2	0.1	5
<i>Aster novi-belgii</i>	7.1±1.7	3.1	80	2.1±1.1	1.0	25
<i>Bartonia paniculata</i>	0.0	0.0	0	P	P	P
<i>Calopogon pulchellus</i>	1.3±0.4	0.6	45	0.9±0.2	0.4	60
<i>Calluna vulgaris</i>	0.0	0.0	0	5.9±3.9	2.7	20
<i>Carex echinata</i>	0.0	0.0	0	0.0±0.0	0.0	0
<i>Carex silicea</i>	0.0	0.0	0	0.2±0.1	0.1	10
<i>Centaureum umbellatum</i>	P	P	P	0.0	0.0	0
<i>Drosera intermedia</i>	0.0	0.0	0	0.0	0.0	0
<i>Drosera rotundifolia</i>	0.0	0.0	0	0.0	0.0	0
<i>Empetrum nigrum</i>	0.0	0.0	0	0.3±0.3	0.1	5
<i>Festuca rubra</i>	2.7±0.5	1.2	70	0.2±0.1	0.1	10
<i>Fragaria virginiana</i>	0.6±0.4	0.3	15	0.1±0.1	0.1	5
<i>Hypericum boreale</i>	0.0	0.0	0	0.0	0.0	0
<i>Hypericum virginicum</i>	0.8±0.8	0.4	5	1.1±0.5	0.5	30
<i>Iris versicolor</i>	0.0	0.0	0	0.1±0.1	<0.1	5
<i>Juncus balticus</i>	10.6±1.1	4.7	100	19.3±2.8	8.9	100
<i>Juncus canadensis</i>	0.2±0.2	0.1	5	0.6±0.3	0.3	20
<i>Juniperus horizontalis</i>	0.0	0.0	0	0.0	0.0	0
<i>Luzula campestris</i>	0.1±0.1	<0.1	5	0.0	0.0	0
<i>Lycopodium inundatum</i>	0.0	0.0	0	0.0	0.0	0
<i>Lycopus uniflorus</i>	2.5±1.2	1.1	30	9.8±2.8	4.5	60
<i>Lysimachia terrestris</i>	0.0	0.0	0	0.4±0.2	0.2	15
<i>Myrica pensylvanica</i>	28.9±4.8	12.8	90	22.8±6.9	10.5	55
<i>Platanthera clavellata</i>	P	P	P	0.0	0.0	0
<i>Poa pratensis</i>	0.6±0.3	0.3	30	0.1±0.1	<0.1	5
<i>Potentilla tridentata</i>	0.0	0.0	0	0.9±0.5	0.4	15
<i>Rhinanthus crista-galli</i>	1.4±0.6	0.6	25	0.0	0.0	0
<i>Rosa virginiana</i>	3.5±1.1	1.6	45	0.9±0.6	0.4	10
<i>Rumex acetosella</i>	0.2±0.2	0.1	5	0.1±0.1	<0.1	5
<i>Scirpus americanus</i>	0.0	0.0	0	0.0	0.0	0
<i>Sisyrinchium angustifolium</i>	0.0	0.0	0	0.2±0.2	0.1	10
<i>Smilacina stellata</i>	0.2±0.2	0.1	5	0.0	0.0	0
<i>Solidago sempervirens</i>	0.0	0.0	0	0.0	0.0	0
<i>Spiranthes romanzoffiana</i>	0.4±0.3	0.2	10	P	P	P
<i>Trientalis borealis</i>	0.2±0.1	0.1	10	0.0	0.0	0
<i>Trifolium repens</i>	6.2±2.7	2.7	35	0.1±0.1	<0.1	5
<i>Vaccinium angustifolium</i>	0.0	0.0	0	0.0	0.0	0
<i>Vaccinium macrocarpon</i>	154.0±12.2	68.2	100	148.5±10.1	68.3	100
<i>Viola lanceolata</i>	2.5±0.8	1.1	45	0.6±0.3	0.3	25
unidentified	<0.1	<0.1	5	0.0	0.0	0

¹P = present; data are based on twenty random 50 cm x 50 cm quadrats per site.

In water up to 1.5 m deep, the most frequently encountered aquatics are *Potamogeton epiphydrus*, *P. oblongus*, and *Polygonum hydropiperoides* var. *psilostachyum*. These floating-leaved species are associated with peaty substrates to some degree. Where the substrate is largely coarse sand, dense beds of *Myriophyllum tenellum* occur, sometimes with *Scirpus americanus*. The bryophyte *Fontinalis sulli-*

Species	Site CH-3			Site CH-4		
	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)	Cover (%, $\bar{x} \pm S.E.$)	Rel. Cover (%)	Frequency (%)
<i>Achillea lanulosa</i>	0.1±0.1	<0.1	5	0.0	0.0	0
<i>Agalinus neoscotica</i>	P ¹	P	P	P	P	P
<i>Agrostis scabra</i>	2.2±1.1	1.0	50	0.6±0.2	0.3	35
<i>Agrostis stolonifera</i>	0.0	0.0	0	0.0	0.0	0
<i>Ammophila breviligulata</i>	0.1±0.1	<0.1	5	0.1±0.1	0.1	5
<i>Anaphalis margaritacea</i>	0.2±0.2	<0.1	5	P	P	P
<i>Anthoxanthum odoratum</i>	0.1±0.1	<0.1	10	0.0	0.0	0
<i>Arenaria lateriflora</i>	0.0	0.0	0	P	P	P
<i>Aronia prunifolia</i>	0.0	0.0	0	0.0	0.0	0
<i>Aster novi-belgii</i>	0.6±0.6	0.3	5	2.1±1.4	1.1	15
<i>Bartonia paniculata</i>	0.0	0.0	0	0.0	0.0	0
<i>Calopogon pulchellus</i>	2.6±0.6	1.2	70	1.2±0.3	0.6	65
<i>Calluna vulgaris</i>	0.0	0.0	0	0.0	0.0	0
<i>Carex echinata</i>	0.1±0.1	0.1	10	0.0	0.0	0
<i>Carex silicea</i>	<0.1	<0.1	5	0.0	0.0	0
<i>Centaurium umbellatum</i>	0.0	0.0	0	0.0	0.0	0
<i>Drosera intermedia</i>	0.1±0.1	<0.1	5	0.5±0.3	0.3	20
<i>Drosera rotundifolia</i>	0.0	0.0	0	0.3±0.1	0.2	25
<i>Empetrum nigrum</i>	0.0	0.0	0	1.5±1.5	0.8	5
<i>Festuca rubra</i>	0.1±0.1	0.1	10	0.2±0.2	0.1	10
<i>Fragaria virginiana</i>	0.1±0.1	<0.1	5	0.0	0.0	0
<i>Hypericum boreale</i>	<0.1	<0.1	5	0.0	0.0	0
<i>Hypericum virginicum</i>	3.5±1.7	1.6	25	3.5±1.4	1.8	65
<i>Iris versicolor</i>	0.2±0.2	0.1	5	0.5±0.5	0.3	5
<i>Juncus balticus</i>	12.4±1.6	5.8	100	8.6±1.1	4.4	95
<i>Juncus canadensis</i>	0.6±0.4	0.3	15	2.1±0.7	1.1	50
<i>Juniperus horizontalis</i>	0.0	0.0	0	P	P	P
<i>Luzula campestris</i>	0.0	0.0	0	0.0	0.0	0
<i>Lycopodium inundatum</i>	0.0	0.0	0	1.4±1.2	0.6	15
<i>Lycopus uniflorus</i>	3.9±1.9	1.8	40	2.2±0.8	1.1	30
<i>Lysimachia terrestris</i>	0.0	0.0	0	1.2±0.7	0.6	25
<i>Myrica pensylvanica</i>	4.6±1.7	2.1	50	4.8±1.9	2.4	45
<i>Platanthera clavellata</i>	0.1±0.1	0.1	5	0.2±0.2	0.1	5
<i>Poa pratensis</i>	0.0	0.0	0	0.0	0.0	0
<i>Potentilla tridentata</i>	0.0	0.0	0	0.0	0.0	0
<i>Rhinanthus crista-galli</i>	0.0	0.0	0	0.0	0.0	0
<i>Rosa virginiana</i>	0.1±0.1	0.1	10	0.1±0.1	<0.1	5
<i>Rumex acetosella</i>	0.0	0.0	0	0.0	0.0	0
<i>Scirpus americanus</i>	0.0	0.0	0	1.2±0.8	0.6	25
<i>Sisyrinchium angustifolium</i>	0.1±0.1	<0.1	5	P	P	P
<i>Smilacina stellata</i>	0.0	0.0	0	0.0	0.0	0
<i>Solidago sempervirens</i>	0.1±0.1	<0.1	5	0.0	0.0	0
<i>Spiranthes romanzoffiana</i>	0.0	0.0	0	0.0	0.0	0
<i>Trientalis borealis</i>	0.4±0.3	0.2	10	0.0	0.0	0
<i>Trifolium repens</i>	0.0	0.0	0	0.0	0.0	0
<i>Vaccinium angustifolium</i>	0.0	0.0	0	0.2±0.2	0.1	5
<i>Vaccinium macrocarpon</i>	182.5±18.6	84.3	100	163.3±9.8	82.6	100
<i>Viola lanceolata</i>	1.9±0.6	0.9	50	1.6±0.6	0.8	45
unidentified	0.0	0.0	0	0.0	0.0	0

¹P = present; data are based on twenty random 50 cm x 50 cm quadrats per site.

vantii is sometimes codominant with *Myriophyllum tenellum*, and both of these species frequently have an epiphytic freshwater sponge (*Heteromeyenia macounii*). Although characteristic of certain fresh pools in various parts of the island, *Sparganium angustifolium* and *Nuphar variegatum* are not abundant. *Potamogeton perfoliatus* var. *bupleuroides* and *Hippuris vulgaris* are apparently confined, on the

island, to the pool complex at West Light, which is characterized by higher (neutral) pH and higher conductivity (see numbers 5 & 6, Table II). In some of these embayments a species of *Nitella* is particularly abundant. Rather than forming associations, any one of these aquatics can be a dominant in a pool or portion of a pool system.

Where slopes are gradual, there is a band of wetland vegetation surrounding the pools. At higher levels the band is replaced by the previously described Cranberry Heath vegetation. It is likely that both Cranberry Heath and wetland borders of pools are periodically inundated, but the border vegetation, being lower, would be inundated for longer periods.

Species characteristic of pool borders (in approximate order of frequency) include: *Scirpus americanus*, *Eleocharis palustris*, *Juncus balticus*, *Viola lanceolata*, *Ranunculus flammula* var. *filiformis*, *Hypericum boreale*, *Agrostis stolonifera*, *Lycopus uniflorus*, *Triadenum fraseri*, *Juncus bulbosus*, *Juncus pelocarpus* var. *sabulonenis*, and *Lysimachia terrestris*. In predominantly sandy areas *Eriocaulon septangulare* may be common. Certain bryophytes may be important components of pond-edge vegetation; notably *Drepanocladus exannulatus*, *Aulocomium palustre*, *Cladopodiella fluitans*, and various *Sphagnum* spp. Somewhat less frequent vascular plants include *Scirpus validus*, *Carex echinata*, *C. canescens* ssp. *disjuncta*, *C. viridula*, *Juncus articulatus*, *Potentilla palustris* var. *parviflora*, *Bidens frondosa*, *Bidens connata* var. *petiolata*, and *Lathyrus palustris* var. *macrantha*.

Where the slopes surrounding pools are relatively steep, Cranberry Heath vegetation (often with *Sphagnum* moss) will extend to the water's edge. No floating *Sphagnum* mats were observed.

Certain isolated pools are much frequented by horses and by gulls and terns. There are without any aquatic vegetation and they have borders ranging from bare mud to a more or less continuous turf comprised of various low growing and decumbent species, including *Tillaea aquatica*, *Sagina procumbens*, *Ranunculus flammula* var. *filiformis*, *Juncus bufonius*, *J. nodosus*, *Agrostis stolonifera*, *Centunculus minimus*, *Hypericum boreale*, and *Viola lanceolata*.

(h) *Brackish Ponds*. Brackish ponds (Figs. 17 & 18) comprise some 51.8 ha, or 1.5% of the island's area (Table IV, Fig. 6). Brackish ponds receive seawater overwash during violent storms, and this affects both their size and the chemical composition of their waters (spot measurements of the concentrations of major ions and other parameters for two brackish ponds are in Table II).

In water 0.5 to 1.5 m deep these brackish pools have dense growths of *Ruppia maritima* mixed with *Potamogeton pectinatus* (the latter comprising up to 15% of the total cover). Shallower water and edges are either bare or have swards of *Eleocharis parvula*. In some places along sandy margins various other halophytes occur, including *Plantago maritima*, *Limosella subulata*, *Rumex maritimus*, *Atriplex patula* var. *hastata*, *Spergularia marina* var. *leiosperma*, *Juncus bufonius* var. *halophilus*, *Tillaea aquatica*, *Centunculus minimus*, and *Puccinellia* sp. At higher levels around these pools *Agrostis stolonifera*, *Agropyron repens*, *Sagina procumbens*, *Juncus balticus*, *Potentilla pacifica*, *Carex hormathodes*, *Sonchus* ssp., *Solidago sempervirens*, and *Achillea lanulosa* are prevalent, with *Spartina pectinata*, *Ammophila breviligulata*, and *Ligusticum scoticum* on relatively well-drained knolls.

Wallace Lake and East Wallace Lake receive seawater inflow more frequently and are consequently very brackish. *Zostera marina* is the only submersed vascular aquatic here. No vascular plants presently occur around the shore in contrast to the situation described by St. John (1921) in 1913, when seawater inflows and sand deposition into the lake basin may have been less.

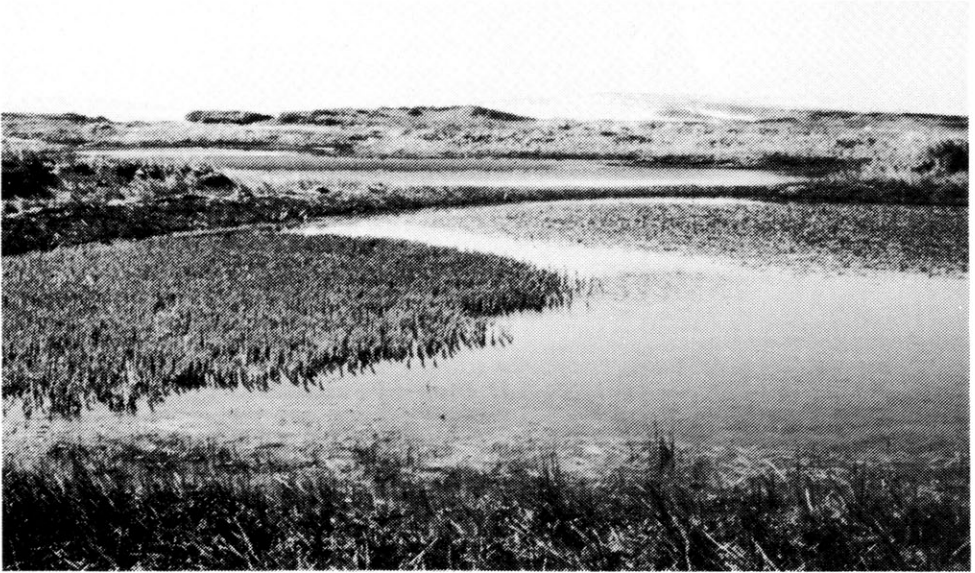


Fig 14. Freshwater pond near West Light. The dominant emergent macrophyte is *Hippuris vulgaris*. The floating-leaved plant is *Potamogeton oblongus*, and emergent *Scirpus americanus* is in the foreground.



Fig 15. Freshwater pond near West Light, with dense stand of *Potamogeton oblongus*.



Fig 16. Freshwater pond near Main Station, with *Iris versicolor* and *Potamogeton oblongus*.



Fig 17. Sward of *Eleocharis parvula* around the edges of a brackish pond near No. 3 Life Saving Station.