

Curatorial Report Number 35

Nova Scotia Museum  
1747 Summer St.  
Halifax, Nova Scotia, Canada

# The Wight Nature Preserve, Hubbards, Nova Scotia

Science Section Staff  
July 1978







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NOVA SCOTIA MUSEUM

*Curatorial Reports*

The *Curatorial Reports* of the Nova Scotia Museum contain information on the collections and the preliminary results of research projects carried out under the program of the museum. The reports may be cited in publications but their manuscript status should be clearly indicated.

Abstract

In October 1975 a 30-acre tract of woodland and bog, located at Hubbards in Halifax County, was donated to the Nova Scotia Museum. Staff of the Science Section of the museum made a survey of the area as a basis for future management, research and interpretation.

## INTRODUCTION

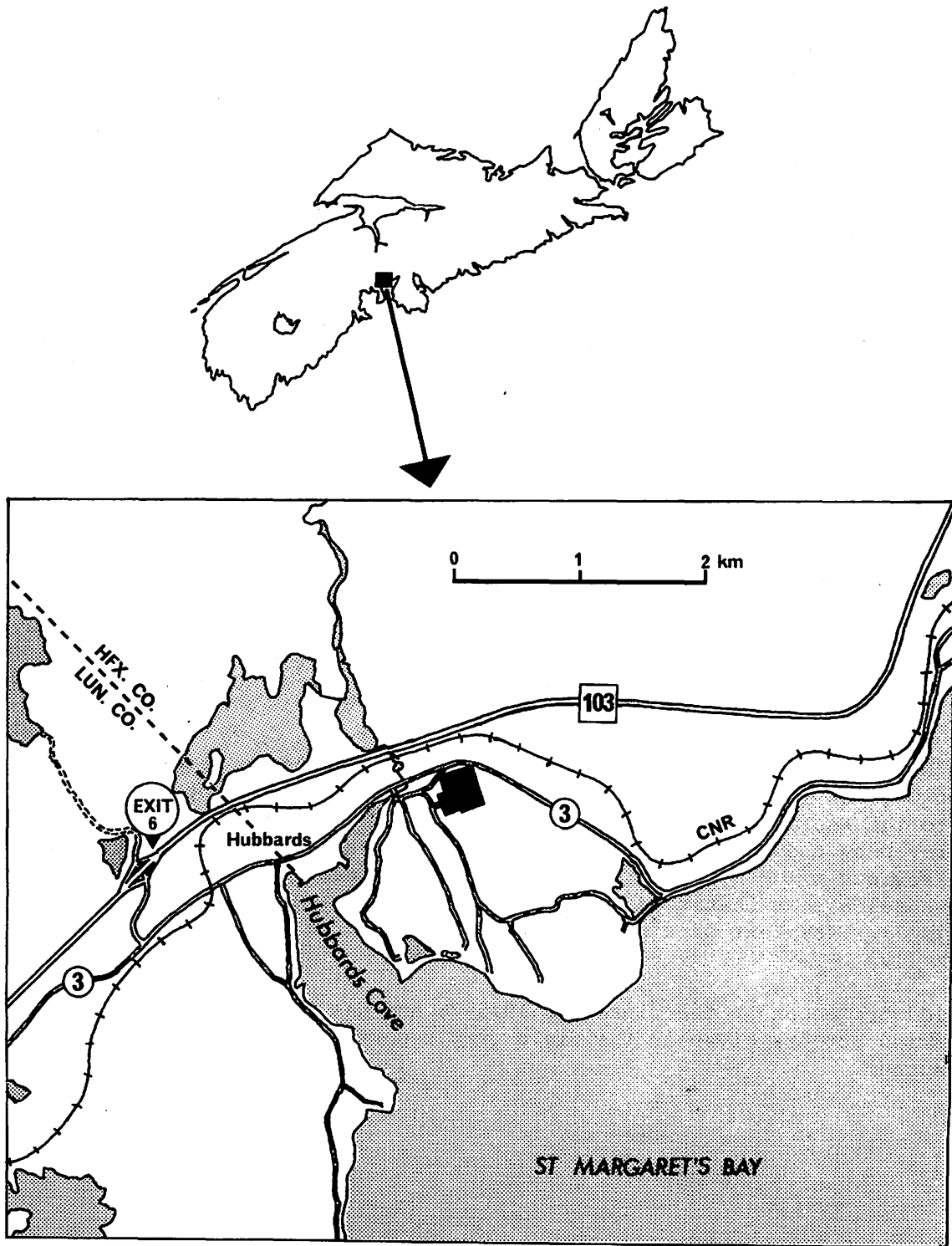
The Nova Scotia Museum has had a long involvement in the management of sites of cultural interest in the province. The property at Mount Uniacke was the first acquired, and the assemblage has grown to include diverse houses, farms and industrial buildings. Many of these properties do include some areas of natural or cultivated land. The generous donation of the property known as the Wight Nature Preserve to the Province of Nova Scotia, by Mrs. Jean Rosahn on October 1, 1975, was an important event for the museum as it was the first natural site to come under management by the museum. At the present time, growing interest in protection of special places throughout Nova Scotia should lead to the eventual establishment of additional ecological and nature reserves. The staff of the Science Section of the Nova Scotia Museum carried out geological and ecological mapping of the reserve, mostly in 1976. The documentation of the preserve as a basis for management and future research and interpretive programs also gave the staff some experience in bio-physical surveying that could be applied as involvement in this type of activity increased in the future.

## HISTORICAL BACKGROUND

As far as can be determined the area of the Wight Nature Preserve may have been exploited for lumber in the past but has never been cleared for agriculture. The woodland, barren and bog areas were part of a larger estate acquired by the Wight family.

The Nova Scotia Museum became involved in the establishment of this nature preserve on October 12, 1973 when a proposal that the museum accept the land was presented to the Board of Governors on behalf of the Nova Scotia Bird Society. This was approved by the Board, but the actual formal transfer of the deed from Mrs. Rosahn to the Province of Nova Scotia did not take place until October 1, 1975. A copy of the press release at that time describes the circumstances relating to the donation (Appendix I). The text of a commemorative plaque to be erected is given in Appendix II.

Field work began in the winter of 1975-76 and has continued to date. Details of work carried out are given in the field trip reports on file in the Science Section of the museum.



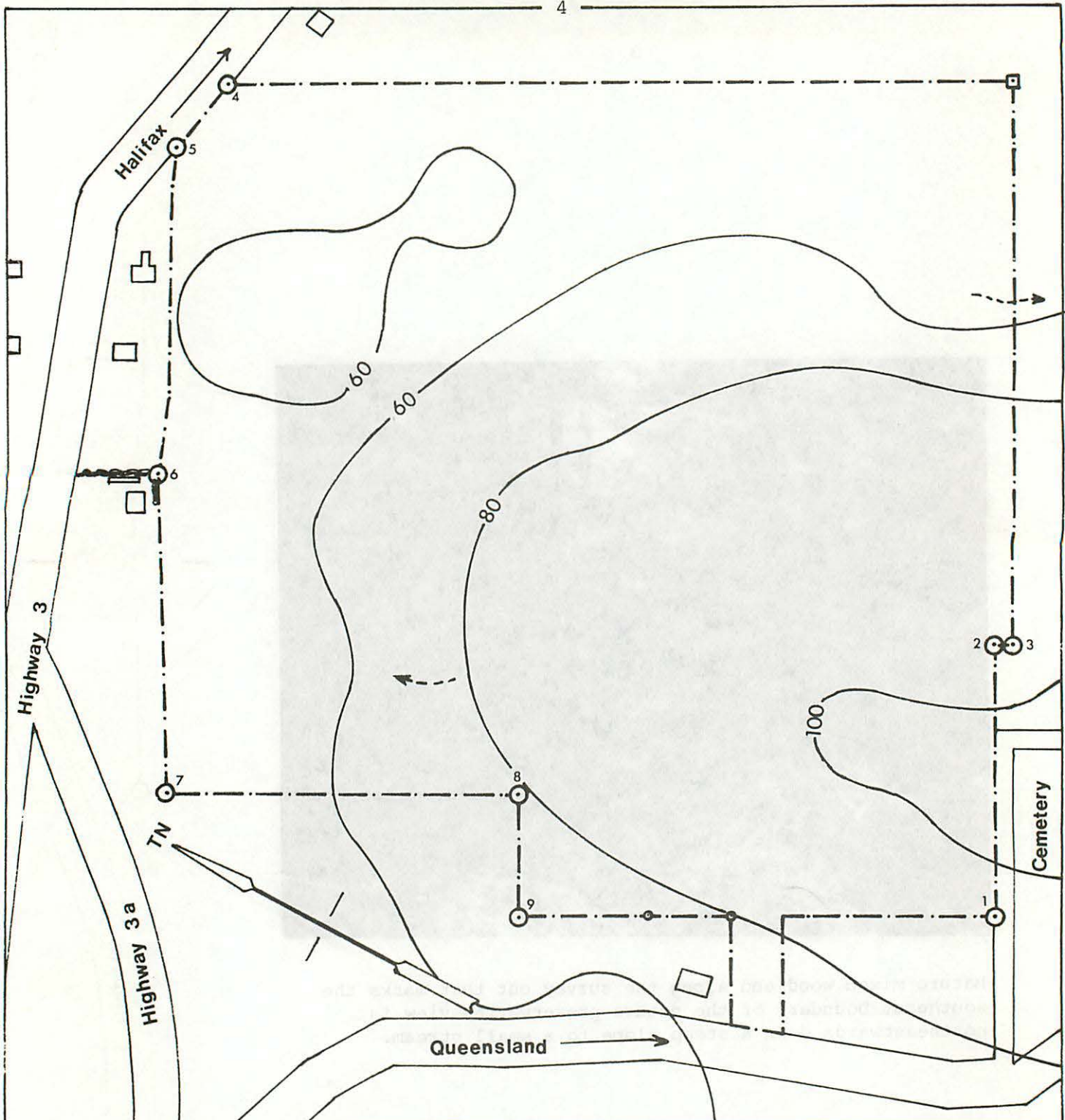
Location of the Wight Nature Preserve





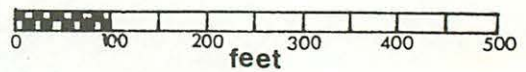
Mature mixed woodland along the survey cut that marks the southeast boundary of the nature preserve. The view is northeastwards down a steep slope to a small stream.





**Wight Nature Preserve  
Hubbards, Halifax County  
Nova Scotia**

1 inch = 200 feet



- |                          |             |                         |  |
|--------------------------|-------------|-------------------------|--|
| preserve boundary        | — · — · — · | rock wall               |  |
| contour line (approx.)   |             | wooden post             |  |
| road                     |             | iron post(aluminum cap) |  |
| building                 |             | iron pipe               |  |
| contour interval 20 feet |             | stream(intermittent)    |  |

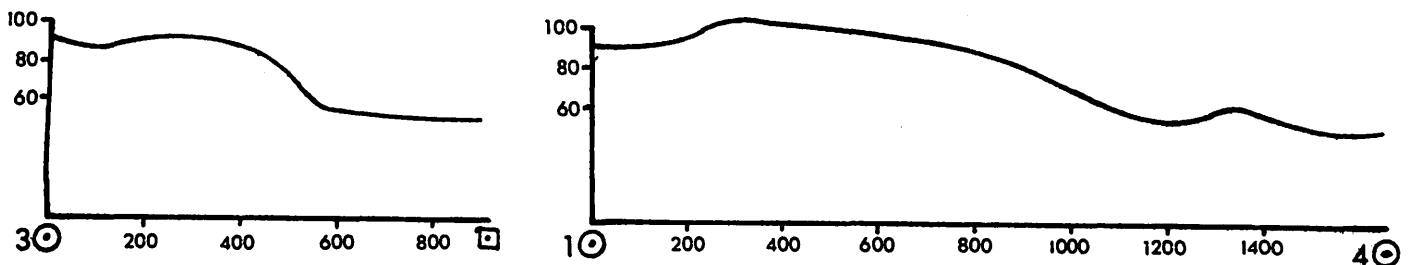




Aerial photograph taken in 1974. Scale of the photo varies but is generally 1 in = 200 ft. (A 10x enlargement of a portion of air photo number 74065-124.)

### TOPOGRAPHY AND PHYSICAL FEATURES

Most of the area of the preserve is part of a much larger topographic feature of the Hubbards area, known as a drumlin. The high ground dominating the preserve is the basal, north end of a high area of bedrock capped by a drumlin. The drumlin, outlined approximately by the 100 foot contour, commences within the boundary of the preserve but is mainly to the south and occupied in part by the cemetery. Two bog areas occur within the preserve, one near the high ground, and the other at the base of the eastern side. The two knolls in the northeast corner are also expressions of bedrock highs. The drainage of the entire preserve is to the north and northeast. The low wet area in the northwest corner is the result of poor drainage resulting from the large expanse of relatively flat land commencing at that site.



Profiles of the topography from iron post 3 to the wooden post and from iron post 1 to iron post 4. The horizontal scale is 1 in = 400 ft and the vertical scale is exaggerated to 1 in = 100 ft.





## GEOLOGY OF THE WIGHT PRESERVE

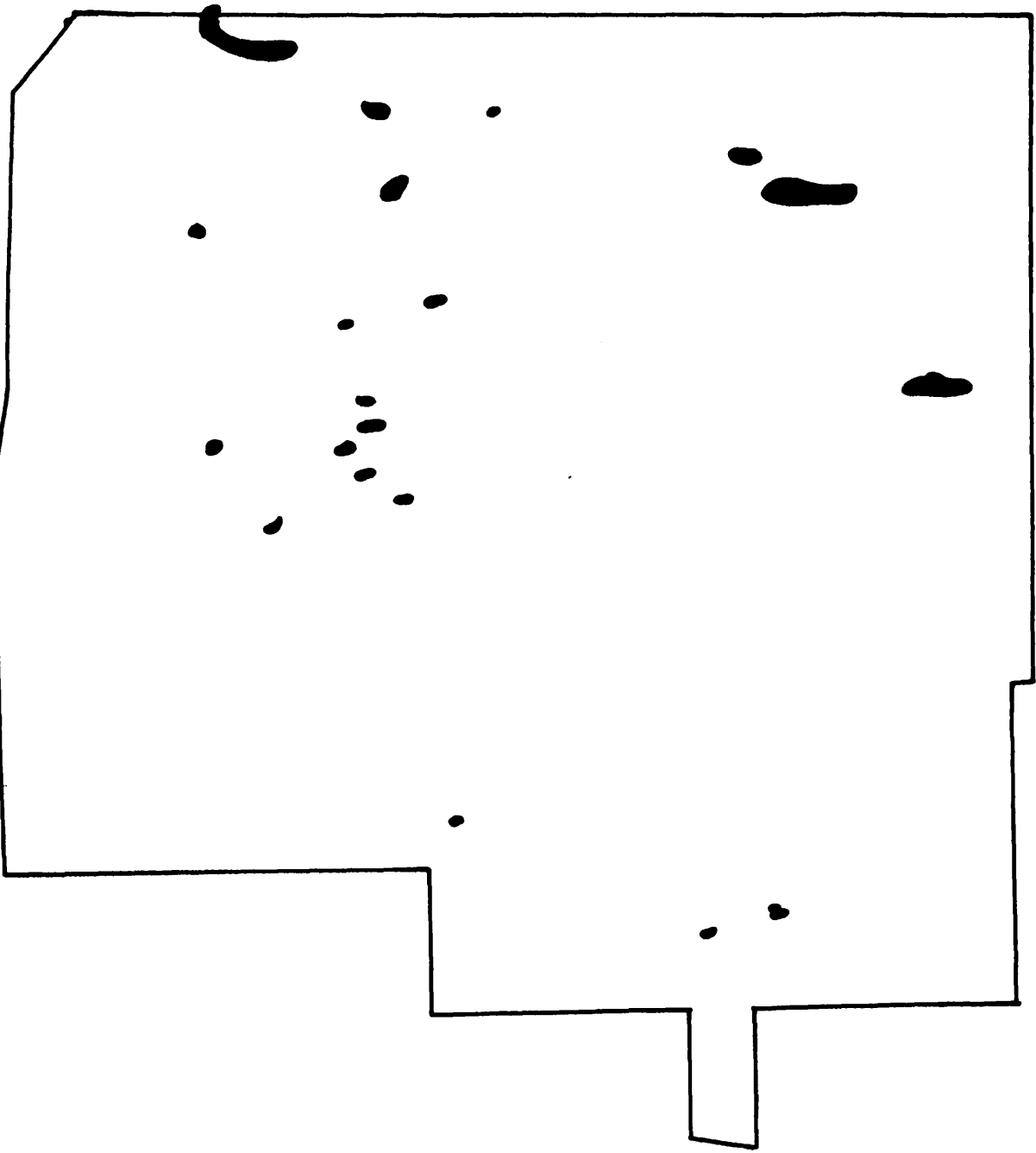
There is very little well exposed bedrock in the preserve. Most of the boulders which are seen on surface are glacial erratics. That is, large chunks of bedrock which have been picked up by the advancing ice sheet, carried many miles and then dropped when the ice melted during the retreat of the glaciers 10,000 to 12,000 years ago. The erratic boulders observed are all biotite granodiorite or quartz monzonite, both of which are commonly called granite.

The few areas of outcrop found indicate that the entire area is underlain by quartz monzonite. This granitic rock is distinguished from granite by having more potassium feldspar than sodium feldspar and usually more muscovite than biotite. The granitic rocks were emplaced during the Acadian orogeny when North America and Africa collided, causing large-scale folding and melting of the rocks at depth. This melted material formed an intrusion known as a batholith. Close to 25% of this South Mountain batholith is composed of these ademetlitic (=quartz monzonite) rocks. Although there is no evidence within the preserve boundaries, there are two phases of intrusion in the batholith. The oldest phase dates to 417 million years ago and is best shown by the quartz monzonites. The youngest stage of intrusion is best shown by the fine grained intrusive bodies made up of alaskites which are 355 million years old. The alaskites which are 387 million years old (Cormier and Smith, 1973) intrude both the quartz monzonites and the biotite granites of the batholith.

The soils derived from the bedrock are very poor, being too stoney for cultivation, and are known as Gibraltar type soils. Most of the preserve is of this type of soil. The only exceptions being the bog areas where a deeper and more peaty material has accumulated. The surface of the Gibraltar soils are typically brown sandy loam and are underlain by a subsoil which is a darker brown sandy loam. These soils are always porous and have low moisture holding capability (MacDougall et al, 1963).

## REFERENCES

- Cormier, R. F., and Smith, T. E., 1973. Radiometric ages of granitic rocks, southwestern Nova Scotia. *Can. J. Earth Sci.* 10, pp 1201-1210.
- MacDougall, J. I., Cann, D. B. and Hilchey, J. D., 1963. Soil survey of Halifax County, Nova Scotia. Canada Department of Agriculture and Nova Scotia Department of Agriculture and Marketing, Report 13 Nova Scotia Soil Survey.
- McKenzie, C. B., and Clarke, D. B. 1975. Petrology of the South Mountain batholith, Nova Scotia. *Can. J. Earth Sci.* 12, pp 1209-1218.



Locations of outcrops within the preserve.

## THE FLORA OF THE WIGHT NATURE PRESERVE

The Wight Nature Preserve is located in the Southwestern Floristic zone of the Atlantic Upland. This zone includes most of the area south of a line extending from Digby Neck to Musquodoboit Harbour. Many of the plants in this area may have persisted, during the last glaciation, in an offshore refugium created by a much lowered sea level. With the retreat of the ice and the rise in sea level, this flora may have recolonized the mainland.

A variety of typical coastal habitats, e.g. bog, barren and mixed woods, are to be found within this relatively small area (30 acres). The species list includes the most significant vascular plants but is not complete. Several other species (e.g., *Calamagrostis pickeringii*) are common in such habitats and may well be located with future observations on the site. The non-vascular flora of the preserve has received very little attention in the present survey. The lichen flora appears to be quite rich and merits additional study. Specimens of *Cladonia arbuscula* (Wallr.) Rabenh., *Cladonia gracilis* (L.) Will., and *Platysmatia tuckermanii* (Oakes) Culb. & Culb. were collected on the preserve. Bryophytes and fungi are also much in evidence.

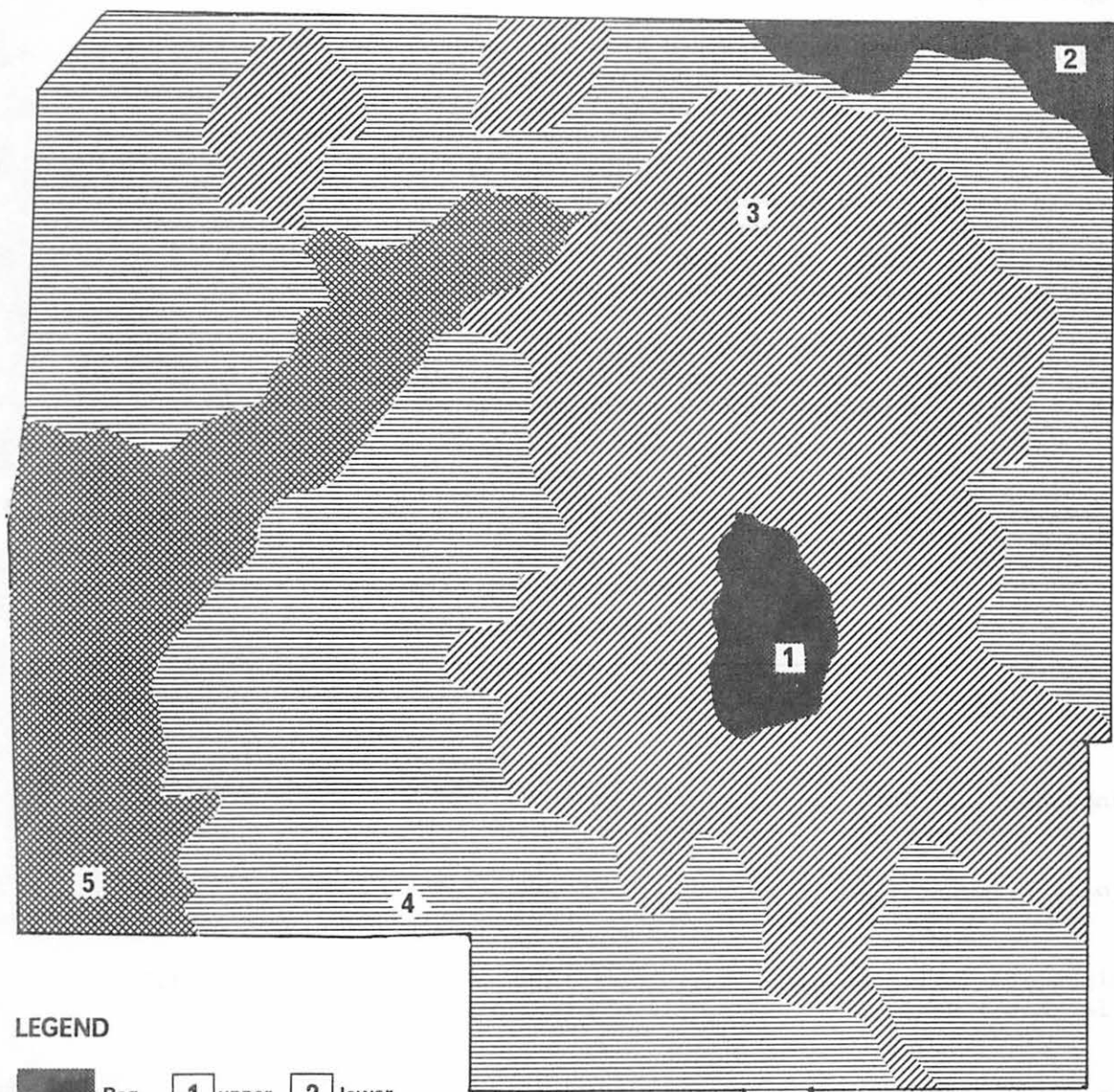
A series of five quadrats (each six metres square) were set up in five specific habitat types to be found within the boundaries of the preserve. Lengths of steel concrete-reinforcing rod were driven into the substrate to provide permanent markers at two corners of each quadrat. Coloured surveyors' stakes were placed at each corner as temporary markers. The positions of the steel rods and the compass bearings of the sides are marked on the quadrat plans.

The tree cover of each quadrat was evaluated and the results are shown on the following diagrams. The ground cover was enumerated within a 1 square metre area of the quadrat (shaded area on diagrams). The number of terminal leaf clusters of the vascular plants was determined as opposed to the number of plants as it was thought that these data would give a clearer impression of area cover. However, differences in the size of terminal leaf clusters (e.g. *Vaccinium oxycoccus* vs. *Kalmia angustifolia*) still cause difficulties with the percentage cover concept. The lack of replicates is of some concern although visually typical areas were chosen.

It is hoped that these study quadrats can provide the basis for future evaluations of the reserve.



## VEGETATION ZONES



## LEGEND

■ Bog 1 upper 2 lower

▨ Barren 3

▬ Mature mixed forest 4

▩ Black Spruce swamp 5

□ Locations of 36m<sup>2</sup> quadrats (not shown to scale)

50 0 50 100 200 300  
feet



Quadrat #1 The Upper Bog

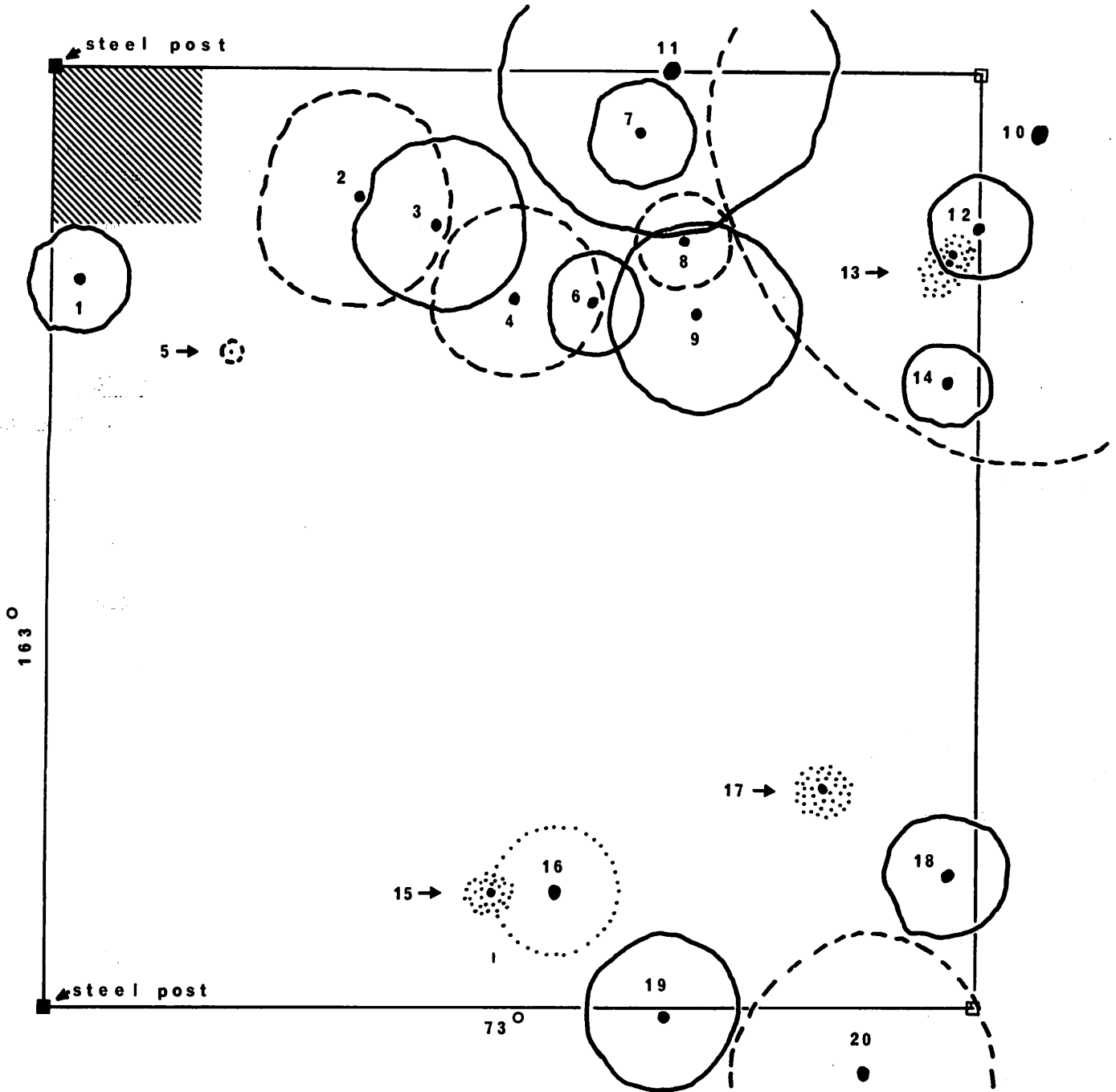
The upper bog is a small but well defined area in a modest depression in the center of the barren area. The 40 metre wide dish-shaped depression is fringed by Black Spruce (*Picea mariana*), Alder (*Alnus crispa*) and Rhodora (*Rhododendron canadense*). The surface of the bog is relatively level with the exception of Sphagnum hummocks. It is dotted with Black Spruce ranging in size from seedlings to trees 13.7 metres in height (24.8 cm DBH) and Larch (*Larix laricina*) up to 18.2 metres tall (27.4 cm DBH). These larger trees are on the margin of the bog. For comparison, a Larch in the center of the bog was found to be 6.8 metres tall and 9.9 cm DBH but was some 41 years old in contrast with 30 years for the larger Larch.

Counts from the one square metre show Lambkill (*Kalmia angustifolia*), Leather Leaf (*Chamaedaphne calyculata*) and Labrador-Tea (*Ledum groenlandicum*) to be the most abundant vascular plants shading the ground, which is covered with *Sphagnum* spp. and *Cladonia* sp.

<u>Upper Bog Quadrat</u>		<u>July 9, 1976</u>
Species	Number (n) of terminal leaf clusters in $\text{lm}^2$	% cover $\frac{n}{T} \times 100$
<i>Ledum groenlandicum</i> Oeder (Labrador Tea)	170	18.4
<i>Rhododendron canadense</i> (L.) Torr. (Rhodora)	72	7.8
<i>Kalmia angustifolia</i> L. (Lambkill)	360	39.0
<i>Chamaedaphne calyculata</i> (L.) Moench. var. <i>angustifolia</i> (Ait.) Rehd. (Leather Leaf)	200	21.7
<i>Vaccinium angustifolium</i> Ait. (Blueberry)	7	0.8
<i>Vaccinium oxycoccos</i> L. (Small Cranberry)	112	12.1
<i>Picea mariana</i> (Mill.) BSP. (Black Spruce)	1	0.1
<i>Gaylussacia baccata</i> (Wang.) K. Koch. (Huckleberry)	1	0.1
Total # terminal leaf clusters in $\text{lm}^2$ (T)=		923
		100.0

QUADRAT NO.1 UPPER BOG

(2.54 cm = 1 m)



— Black Spruce      ..... White Pine  
 - - - Larch              ..... Deciduous Shrubs

Tree #	DBH	Height	Tree #	DBH	Height	Tree #	DBH	Height
1	-	0.8 m	7	-	1.4 m	14	-	1.0 m
2	-	1.4 m	8	-	1.5 m	15	-	1 m
3	-	1.2 m	9	4.8 cm	3 m	16	-	0.7 m
4	-	1.6 m	10	6.7 cm	4.3 m	17	-	0.8 m
5	-	0.2 m	11	6.1 cm	4.0 m	18	-	0.9 m
6	-	1.2 m	12	-	1.2 m	19	-	1.3 m
			13	-	1.3 m	20	-	2.2 m



Quadrat #2                      The Lower Bog

The lower bog occupies an irregular area in the east corner of the preserve. It is much larger than the upper bog and is cut by a stream. The western side is bounded by a steep, well wooded slope. Additional plants (e.g. *Drosera rotundifolia* and *Sarracenia purpurea*) grow in this bog probably because of the presence of areas more abundantly supplied with water. However, the counts from the square metre quadrat indicate a remarkable correlation in density of heath plants and relative number of each species. The density of Black Spruce (*Picea mariana*) and Larch (*Larix laricina*) is somewhat greater than in the upper bog. The Black Spruce range up to 13.2 m tall (21.0 cm DBH) while the Larch reach 12.0 m tall (16.6 cm DBH).

Lower Bog Quadrat

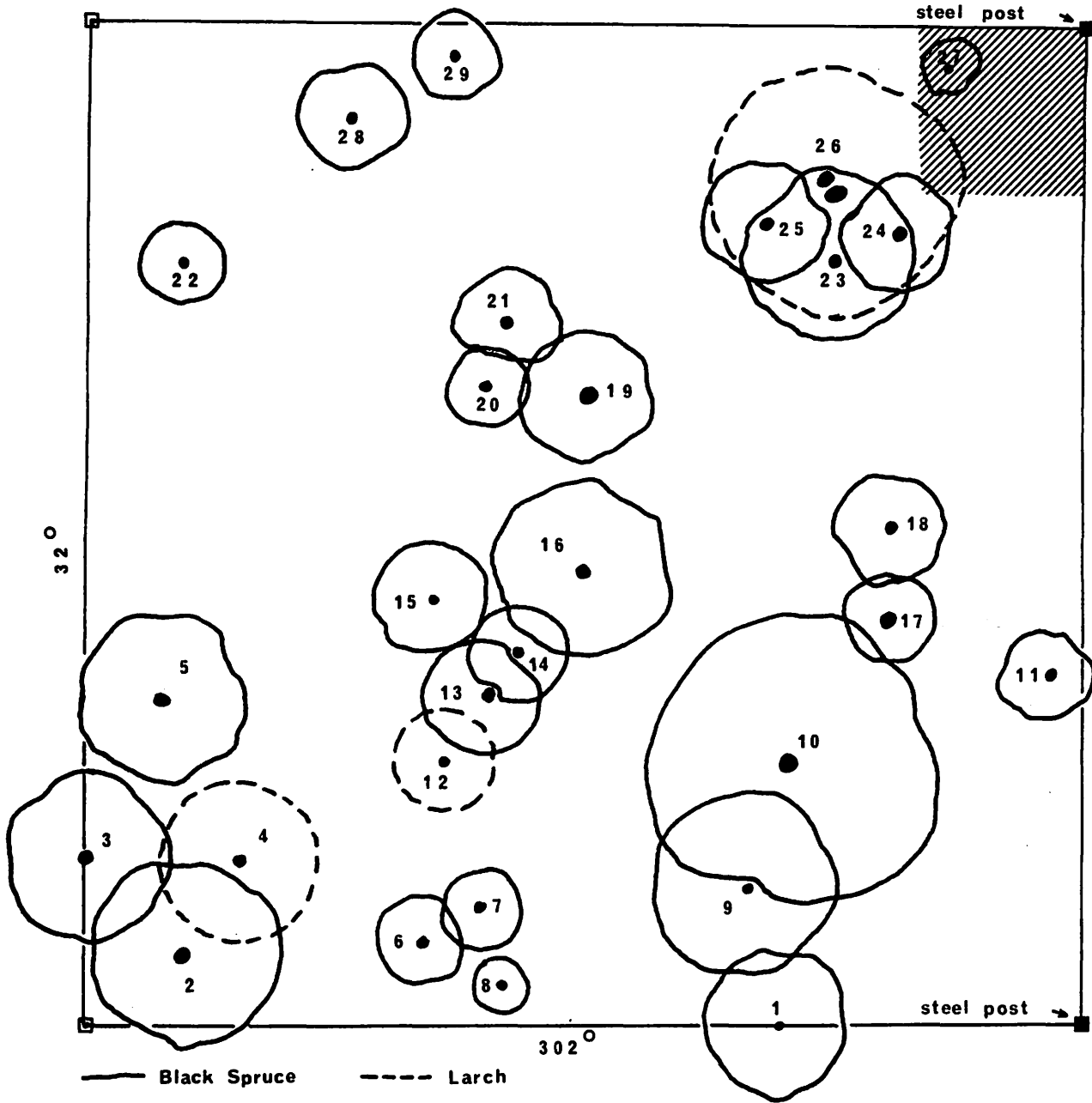
Summer /76

Species	Number (n) of terminal leaf clusters in $lm^2$	% cover ( $n/T \times 100 =$ )
<i>Ledum groenlandicum</i> Oeder (Labrador Tea)	161	19.1
<i>Rhododendron canadense</i> (L.) Torr (Rhodora)	20	2.4
<i>Kalmia angustifolia</i> L. (Lambkill)	386	45.8
<i>Chamaedaphne calyculata</i> (L.) Moench. var. <i>angustifolia</i> (Ait.) Rehd. (Leather Leaf)	240	28.5
<i>Vaccinium oxycoccos</i> L. (Small Cranberry)	25	3.0
<i>Picea mariana</i> (Mill.) BSP (Black Spruce)	4	0.5
<i>Sarracenia purpurea</i> L. (Pitcher-Plant)	1	0.1
<i>Drosera rotundifolia</i> L. (Sundew)	4	0.5
<i>Eriophorum</i> sp. (Cotton grass)	2	0.2
Total # terminal leaf clusters in $lm^2$ (T) =	843	100.1

QUADRAT NO. 2

LOWER BOG

(2.54 cm = 1 m)



Tree #	DBH	Height	Tree #	DBH	Height	Tree #	DBH	Height
1	-	0.5 m	11	-	0.4 m	21	-	0.4 m
2	-	1.3 m	12	-	0.4 m	22	-	0.5 m
3	-	1.3 m	13	-	0.9 m	23	-	0.8 m
4	-	1.0 m	14	-	0.6 m	24	-	0.6 m
5	-	0.8 m	15	-	0.6 m	25	-	0.6 m
6	-	0.5 m	16	-	1.3 m	26	4.5&4.1 cm	2.8 m
7	-	0.4 m	17	-	0.4 m	27	-	0.4 m
8	-	0.4 m	18	-	0.5 m	28	-	0.4 m
9	-	1.0 m	19	-	0.5 m	29	-	0.5 m
10	4.5 cm	2.3 m	20	-	0.4 m			

## Quadrat #3

## The Barren Area

The barren area predominates in the south-eastern half of the preserve and is difficult to delineate from the mature forest zone which surrounds it. These barrens exhibit considerable floristic variation depending on the slope and soil cover. White Birch (*Betula papyrifera*), Poplar (*Populus* spp.) and Red Maple (*Acer rubrum*) are the most conspicuous deciduous trees while Whiterod (*Viburnum cassinoides*) and Huckelberry (*Gaylussacia bacata*) dominate the intermediate storey. In the area chosen for counting, Blueberry (*Vaccinium angustifolium*) and Teaberry (*Gaultheria procumbens*) are the most abundant ground-cover species. The lichen flora is also quite rich in this area. *Usnea* is conspicuous on the trees, several outcrops are covered with *Umbilicaria* sp. and *Cladonia* spp. are common on the ground.

Barren QuadratOct. 6, 1976

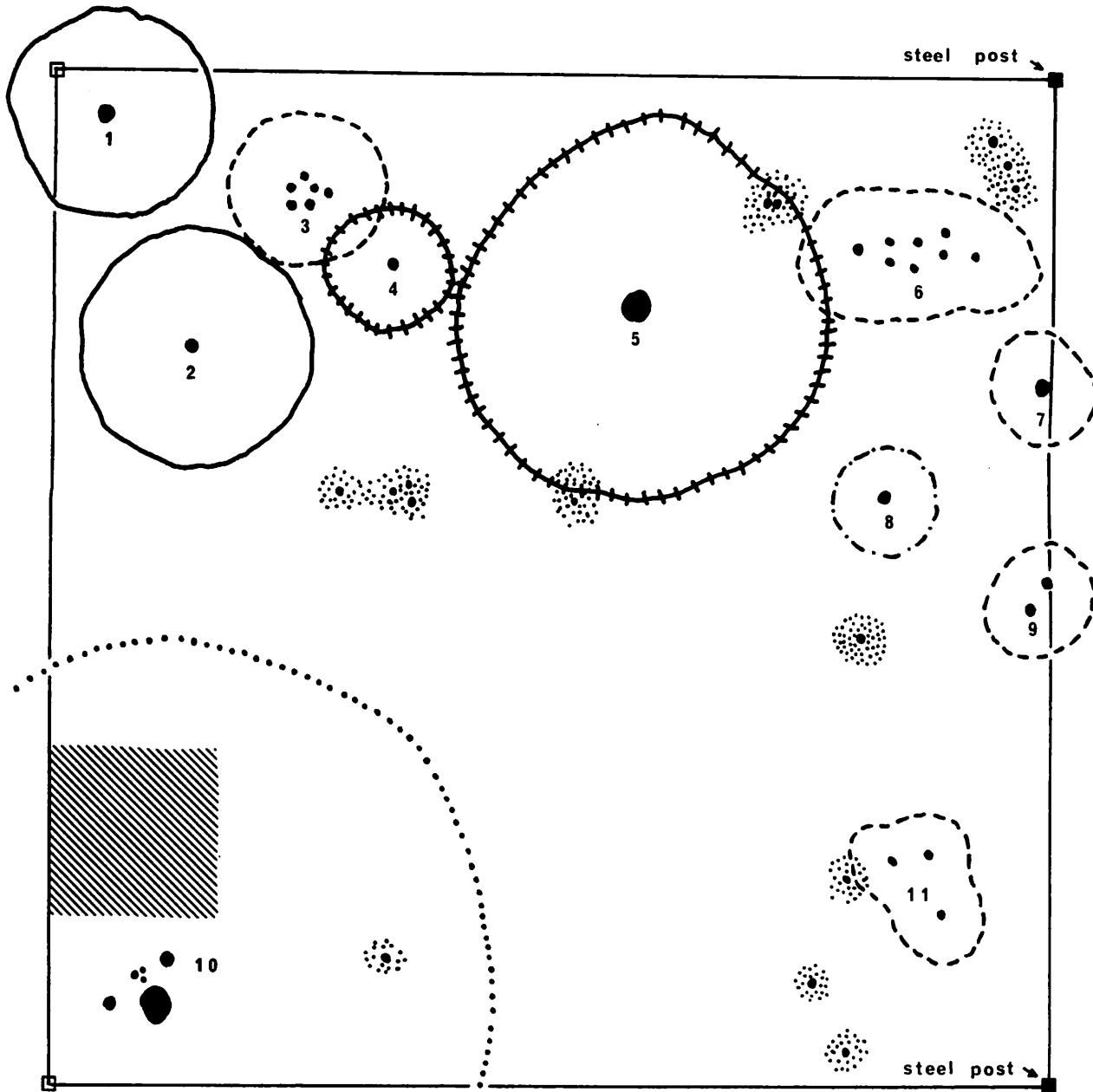
Species	Number (n) of terminal leaf clusters in $\text{lm}^2$	$n/1 \times 100 = \% \text{ cover}$
<i>Pteridium aquilinum</i> (L.) Kuhn var <i>latiusculum</i> (Desv.) Underw. (Bracken)	6	1.0
<i>Kalmia angustifolia</i> L. (Lambkill)	44	7.3
<i>Gaultheria procumbens</i> L. (Teaberry)	187	31.1
<i>Vaccinium angustifolium</i> Ait. (Blueberry)	345	57.3
<i>Trientalis borealis</i> Raf. (Star-flower)	4	0.7
<i>Cornus canadensis</i> L. (Bunchberry)	14	2.3
<i>Aralia nudicaulis</i> (Wild Sarsaparilla)	1	0.2
<i>Maianthemum canadense</i> Desf. (Wild Lily-of-the-Valley)	1	0.2
Total # terminal leaf clusters in $\text{lm}^2$ (T) =	602	100.1



QUADRAT NO. 3

BARREN

(2.54cm = 1m)



- White Spruce
- ++++ Trembling Aspen
- ..... White Birch
- Witherod
- .-.- Red Maple
- ..... Deciduous Shrubs < 1 m

Tree #	DBH	Height	Age	Tree #	DBH	Height	Age
1	-	1.2 m	-	7	-	1.4 m	-
2	-	3.2 m	-	8	-	2.5 m	-
3	-	2.0 m	-	9	-	1.4 m	-
4	-	3.0 m	-	10	15.1cm	14. m	c.46
5	3.1 cm	5.0 m	-	11	-	1-4 m	-
6	-	1-4 m	-				

Quadrat #4                      Mature Forest

Areas of softwood surround the barren, bog and swampy zones of the preserve. They are considered to be mature as they contain various age classes of trees from seedlings to large specimens which have fallen to the ground. However, none of the trees cored exceeded 100 years in age. White Spruce (*Picea glauca*) and Balsam Fir (*Abies balsamea*) are the dominant trees but a few Red Pine (*Pinus resinosa*) are conspicuous. These large pine specimens all have rotten centers. The dense overstory permits a low level of light penetration (except where the canopy is broken by windfalls) and consequently the herbaceous vegetation is sparse. In the area chosen for counting, the ground is relatively even, well drained, and is covered with a luxuriant mat of mosses and lichens. Bunchberry (*Cornus canadensis*) is by far the most abundant herbaceous plant in the  $1\text{m}^2$  quadrat.

<u>Mature Softwood Quadrat</u>		<u>Oct. 20, 1976</u>
Species	Number (n) of terminal leaf clusters in $1\text{m}^2$	$n/T \times 100 = \% \text{ cover}$
<i>Abies balsamea</i> (L.) Mill. (Balsam Fir)	17	7.3
<i>Maianthemum canadense</i> Desf. (Wild Lily-of-the-Valley)	29	12.5
<i>Vaccinium angustifolium</i> Ait. (Blueberry)	25	10.8
<i>Trientalis borealis</i> Raf. (Star Flower)	2	0.9
<i>Cornus canadensis</i> L. (Bunchberry)	159	68.5
Total # terminal leaf clusters in $1\text{m}^2$ (T) =		232
		100.0



Quadrat #5                      Black Spruce Swamp

The Black Spruce Swamp occupies a wet area in the west corner of the preserve and extends across towards the lower bog. Although Black Spruce (*Picea mariana*) is the dominant tree, Balsam Fir (*Pinus resinosa*), Red Maple (*Acer rubrum*) and Wire Birch (*Betula populifolia*) also grow in this area.

The oldest tree in the six metre quadrat was over 120 years old and several exceeded 100. Again, the presence of all age classes from seedlings to frequent wind-falls indicates a measure of maturity although the tree size attained in this situation is much less than in the drier forest.

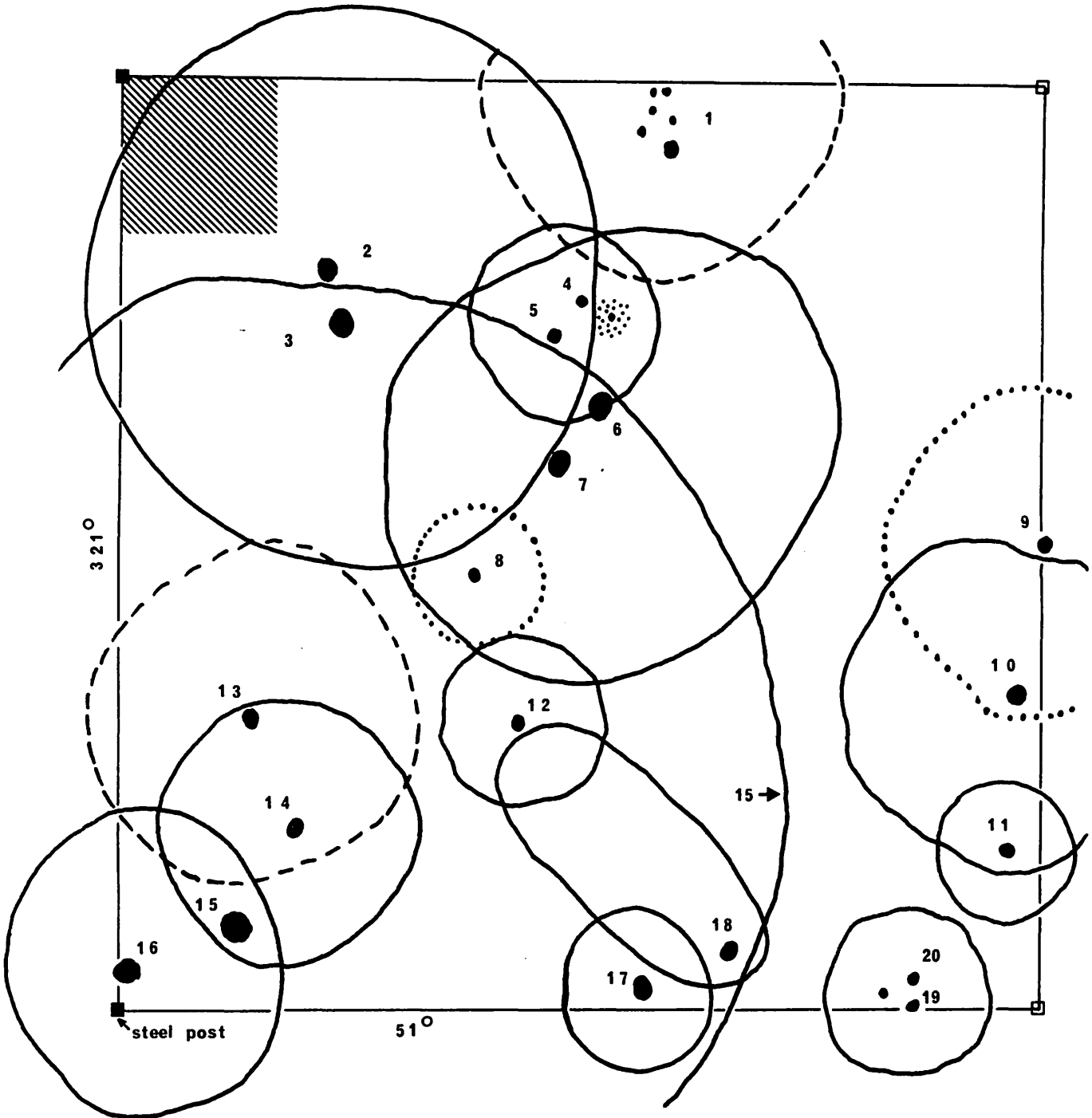
The ground is quite damp in this situation and is covered with pronounced Sphagnum hummocks. Cinnamon Fern (*Osmunda cinnamomea*) is abundant in several places and Gold Thread (*Coptis trifolia*) is the most abundant herbaceous plant in the one metre quadrat.

Black Spruce Forest Quadrat

Oct. 20, 1976

Species	Number (n) of Terminal leaf clusters in $\text{lm}^2$	n/T x 100=% cover
<i>Picea mariana</i> (Mill.) BSP (Black or Bog Spruce)	2	0.7
<i>Betula populifolia</i> Marsh (Wire Birch)	1	0.3
<i>Coptis trifolia</i> (L.) Salisb. (Goldthread)	114	39.3
<i>Cornus canadensis</i> L. (Bunchberry)	40	13.8
<i>Ledum groenlandicum</i> Oeder (Labrador-Tea)	2	0.7
<i>Kalmia angustifolia</i> L. (Lambkill)	47	16.2
<i>Gaultheria procumbens</i> L. (Teaberry)	32	11.0
<i>Vaccinium angustifolium</i> Ait. (Blueberry)	43	14.8
<i>Vaccinium oxycoccos</i> L. (Cranberry)	9	3.1
Total # terminal leaf clusters in $\text{lm}^2$ (T) =		290
		99.9





— Black Spruce      +++++ Balsam Fir  
 - - - Red Maple      ..... Wire Birch

Tree #	DBH	Height	Age	Tree #	DBH	Height	Age
1	7.6 cm	-	50+	11	6.1 cm	-	-
2	10.8 cm	-	c.93	12	-	0.6 m	-
3	14.0 cm	-	c.105	13	8.9 cm	-	c.84
4	8.9 cm	-	-	14	13.4 cm	-	-
5	8.3 cm	-	-	15	24.8 cm	-	c.111
6	14.3 cm	-	c.118	16	15.0 cm	-	c.121
7	16.2 cm	-	c.113	17	9.9 cm	(dead)	c.92
8	-	0.5 m	-	18	6.1 cm	-	-
9	10.2 cm	-	c.60	19	7.3 cm	-	-
10	10.2 cm	-	77+	20	6.7 cm	-	-



The upper bog area showing a progression from low bog vegetation, dominated by Lambkill, Leatherleaf and Labrador Tea, to woodland of Larch and Black Spruce.



The barren/mixed woodland transition seen in the spring. The conifers are mostly White Spruce. Deciduous shrubs and heath plants, particularly Blueberry and Tea Berry, are important in the barren

## Species List

## Wight Nature Preserve

Osmundaceae (Flowering-Fern Family)*Osmunda cinnamomea* L.

Cinnamon Fern

abundant, in west corner wood

Lycopodiaceae (Club-Moss Family)*Lycopodium obscurum* L.

Ground Pine

scattered, on barren area

Polypodiaceae (Fern Family)*Dryopteris spinulosa* (O. F. Muell.) Watt

Wood Fern

scattered, in wooded areas

*D. spinulosa* var. *intermedia* (Muhl) Underw.

Wood Fern

scattered, in wooded areas

*D. cristata* (L.) Gray

Crested Wood Fern

uncommon, in woods

*Pteridium aquilinum* (L.) Kuhn,var. *latiusculum* (Desv.) Underw.

Bracken

abundant, on barrens

*Polypodium virginianum* L.

Rock Polypody

common, rocky outcrops near center

Pinaceae (Pine Family)*Abies balsamea* (L.) Mill

Balsam Fir

common, in drier areas

*Picea glauca* (Moench) Voss

White Spruce

scattered, on raised land

*P. mariana* (Mill.) BSP

Black Spruce

abundant, in wet areas

*Larix laricina* (DuRoi) K. Koch

Larch

scattered, in bog areas

*Pinus strobus* L.

White Pine

scattered, barren and woods

*P. resinosa* Ait.

Red Pine

scattered, barren and woods

*Juniperus communis* L.

Common Juniper

uncommon, in bog

Gramineae (Grass Family)*Danthonia spicata* (L.) Beauv.

Wire Grass

scattered, barrens

*Panicum* sp.

Panic Grass

uncommon, on dry slope

Cyperaceae (Sedge Family)*Eriophorum* sp.

Cotton Grass

scattered, in bog areas

*Carex trisperma* Dew.

not abundant

*Carex* sp.

scattered, in wet area

Liliaceae (Lily Family)

*Clintonia borealis* (Ait.) Raf.  
*Maianthemum canadense* Desf.  
*Medeola virginiana* L.  
*Trillium undulatum* Willd.

Clintonia  
Wild Lily-of-the-Valley  
Indian Cucumber-root  
Painted Trillium

abundant in mature woods  
common in woods  
not abundant, in mature woods  
not abundant, in wooded areas

Orchidaceae (Orchid Family)

*Cypripedium acaule* Aito.

Common Lady's-Slipper

not abundant in woods

Salicaceae (Willow Family)

*Populus tremuloides* Michx.  
*P. grandidentata* Michx.

Trembling Aspen  
Large Tooth Aspen

scattered, on barren areas  
scattered, on barren areas

Myricaceae (Sweet Gale Family)

*Myrica gale* L.  
*Comptonia peregrina* (L.) Coult.

Sweet Gale  
Sweet-Fern

scattered, barren area  
not abundant, drier area

Corylaceae (Hazel Family)

*Betula populifolia* Marsh.  
*B. papyrifera* Marsh.  
*Alnus crispa* (Ait.) Pursh

Wire or Grey Birch  
White Birch  
Downy Alder

common, barren area  
scattered barren area  
abundant, general

Fagaceae (Beech Family)

*Quercus borealis* Michx. f.

Red Oak

scattered

Ranunculaceae (Buttercup Family)

*Coptis trifolia* (L.) Salisb.

Goldthread

scattered, in wooded area

Sarraceniaceae (Pitcher-Plant Family)

*Sarracenia purpurea* L.

Pitcher Plant

scattered, in low bog



Droseraceae (Sundew Family)

*Drosera rotundifolia* L.

Round Leaved Sundew

common in bog area

Rosaceae (Rose Family)

*Aronia* sp.

Chokeberry

common, on barren area

*Sorbus* sp.

Mountain Ash

scattered, in wooded area

*Amelanchier laevis* Wrey

Shadbush

scattered, in wooded area

*Rubus pubescens* Raf.

Dewberry

uncommon, in wet area

*Rosa* sp.

scattered

Empetraceae (Crowberry Family)

*Empetrum nigrum* L.

Black Crowberry

in one area only, barren

Aquifoliaceae (Holly Family)

*Nemopanthus mucronata* L. (Trel.)

False Holly

scattered, woods

Aceraceae (Maple Family)

*Acer rubrum* L.

Red Maple

scattered, barren wood

Cistaceae (Rockrose Family)

*Lechea intermedia* Leqgett

Pinweed

one site only, dry bank

Araliaceae (Ginseng Family)

*Aralia nudicaulis* L.

Wild Sarsaparilla

scattered, in wooded area

Cornaceae (Dogwood Family)

*Cornus canadensis*

Bunchberry

abundant, in wooded area

Pyrolaceae (Wintergreen Family)

*Monotropa uniflora* L.

Indian-Pipe

uncommon, in wooded area

Ericaceae (Heath Family)

<i>Ledum groenlandicum</i> Oeder	Labrador-Tea	common, in bogs
<i>Rhododendron canadense</i> (L.) Torr.	Rhodora	common, in bogs
<i>Kalmia angustifolia</i> L.	Lambkill	common, in bogs
<i>K. polifolia</i> Wang.	Pale Laurel	scattered, in bogs
<i>Chamaedaphne calyculata</i> (L.) Moench, var. <i>angustifolia</i> (Ait.) Rehd.	Leather Leaf	abundant, in bogs
<i>Epigaea repens</i> L. var. <i>glabrifolia</i> Fern.	Trailing Arbutus, Mayflower	uncommon, on barren slope
<i>Gaultheria procumbens</i> L.	Teaberry	common, on barren
<i>Gaylussacia baccata</i> (Wang.) K. Koch	Huckleberry	very abundant, on barren
<i>Vaccinium angustifolium</i> Ait.	Blueberry	scattered, on barren
<i>V. vitis-idaea</i> L. var. <i>minus</i> Ladd.	Foxberry	scattered, in woods
<i>V. oxycoccos</i> L.	Small Cranberry	common, in bogs

Primulaceae (Primrose Family)

<i>Trientalis borealis</i> Raf.	Star-Flower	scattered, in woods
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Rubiaceae (Madder Family)

<i>Mitchella repens</i> L.	Partridge Berry	scattered, in woods
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Caprifoliaceae (Honeysuckle Family)

<i>Lonicera villosa</i> (Michx.) R & S	Mountain Fly-Honeysuckle	uncommon, in low bog
<i>Linnaea borealis</i> L. var. <i>americana</i> Forbes. Rehd.	Twin-Flower	scattered, in woods
<i>Viburnum cassinoides</i> L.	Withered	common, on barren

Compositae (Composite Family)

<i>Solidago puberula</i> Nutt.	Rough Goldenrod	uncommon, dry barren slope
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The Wight Nature Preserve provides habitats for diverse lower plants on the ground, rock surfaces and trees. The photograph shows a variety of Lichens and Mosses in the mature mixed woodland.

## THE FAUNA

In-depth studies of the animal life in the preserve were not carried out but observations made at seasonally significant times indicated that the fauna was typical of the Atlantic Coastal Forest Region.

The absence of standing water such as ponds and lakes means that many of the aquatic or semi-aquatic animals would not be resident in the area.

A number of species present are those which easily colonize disturbed habitats. White-footed Mice and American Toads are two good examples.

## MAMMALS

Ten sites within the preserve were trapped, 5 of them between 8th and 23rd Sept. 1976 and 5 on the night of 18-19 Oct. 1977. The 1977 sites were all within the plant quadrats, each located in a different habitat within the preserve. Live traps were used for all sampling and animals captured in the 1977 trapping effort were released after being recorded.

Only 3 species of mammals were caught in the traps. An additional 2 species were observed and the possible presence of a further three was deduced from circumstantial evidence (tracks, droppings, etc.).

## MAMMALS TRAPPED IN THE PRESERVE

Short-tailed Shrew, *Blarina brevicauda*  
White-footed Mouse, *Peromyscus leucopus*  
Red-backed Vole, *Clethrionomys gapperi*

## MAMMALS SIGHTED

Snowshoe Hare, *Lepus americanus*  
Red Squirrel, *Tamiasciurus hudsonicus*

## MAMMALS PROBABLY PRESENT (deduced from circumstantial evidence)

Star-nosed Mole, *Condylura cristata*  
Raccoon, *Procyon lotor*  
White-tailed Deer, *Odocoileus virginianus*



The most abundant of the species trapped was the White-footed Mouse, which made up 66 percent of the total. They were found both in the black-spruce bog and in the open heath-barren quadrat (3 specimens from each).

Two Red-backed Voles, the second most frequently trapped species, were taken, one in mixed woods and one in the high-bog quadrat. The single Short-tailed Shrew was taken in mixed forest along the eastern boundary.

Of the mammals seen, Red Squirrels were by far the most abundant, visible or audible in every predominantly or entirely coniferous site visited. One Snowshoe Hare was seen.

Raccoons were never seen, but their characteristic disturbance of traps was a problem in several sites. One probable deer hoofprint was observed in the high bog quadrat. The soil disturbance typical of Star-nosed Mole activity was observed in the turf of the northwest corner of the cemetery. The disturbance covered an area of many square meters and extended to within 2 meters of the preserve boundary, so it is highly probable that the species occurs within it.

No trapping was done in the summer, when one or both species of jumping mice might have been active in suitable habitats. They go into hibernation in September, but the suitable places within the preserve were not trapped at all.

No bats were seen.

#### REPTILES AND AMPHIBIANS

Only two species of amphibians have been recorded from the preserve and this probably reflects the lack of breeding sites such as ponds. No frogs were heard calling during the breeding season for the same reason. No turtles have been found and the only snake collected was the Red-bellied Snake which feeds mainly on slugs and is usually found under rocks at the edge of woodlands and in barren areas.

#### SPECIES RECORDED:

Red-bellied Snake, *Storeria occipitomaculata*  
American Toad, *Bufo americanus*  
Red-backed Salamander, *Plethodon cinereus*

## BIRDS

No effort was made during 1976 and 1977 to thoroughly census the birds in the preserve, but all birds observed in the course of other survey work were recorded. Most observations were made in the early spring or fall of both years. Since birds are relatively mobile, especially outside the breeding season, and the Wight Preserve is only 30.2 acres in extent, any meaningful assessment of its avifauna must be made at the peak of the breeding season. This would be best carried out by those members of the Nova Scotia Bird Society who are skilled in field identification and song recognition.

The species so far recorded are:

Common Crow, *Corvus brachyrhynchos*  
 Blue Jay, *Cyanocitta cristata*  
 Grey Jay, *Perisoreus canadensis*  
 American Robin, *Turdus migratorius*  
 Black-capped Chickadee, *Parus atricapillus*  
 Red-breasted Nuthatch, *Sitta canadensis*  
 Myrtle Warbler, *Dendroica coronata*  
 Slate-coloured Junco, *Junco hyemalis*

## INSECTS

The fauna of any area is ultimately dependant upon the vegetation and, where insects are concerned, is directly related to that vegetation. This preserve is not of unusual botanical interest but the flora is varied enough in this and the surrounding area to support a high percentage of the 10,000 different kinds of insects found in Nova Scotia.

The most interesting area is the low bog where pitcher plant mosquitoes, pitcher plant flies and pitcher plant moths can be found feeding inside the leaves where insects are normally trapped by the plant. Moths and butterflies are easily seen as they fly over the low bog vegetation, especially in May when the Spring Azure and Heath Moths are on the wing. Many species of beetles and flies are found only in bogs and are of great interest to entomologists.

In the woodland, Spruce budworm is present but not abundant and the White-marked tussock moth is very common on maple and other broad-leaved trees. One evening in August, 26 species of moths were encountered.

A surprising number of aquatic insects are found in the preserve although there are no suitable breeding sites for many of them. Caddisflies, for example, are quite abundant and biting flies such as blackflies in early summer and mosquitoes throughout the summer can be a nuisance. Deer flies and Horse flies breed in wet habitats such as muddy stream edges and damp sphagnum moss. These flies, particularly at the end of July, can make walking in the preserve an unpleasant experience.

INSECTS COLLECTED BY DAY  
17 May 1976

Lepidoptera

*Celastrina argiolus* (L.) (Spring Azure)  
*Isturgia truncataria* Wlk. (Heath Moth)

Diptera

*Tachinomyia apicata* Curran  
Simuliidae (1 species, undetermined)

Hymenoptera

*Megachile* sp.

INSECTS COLLECTED AT NIGHT  
23 August 1976

Lepidoptera

*Euxoa messoria* (Harris)  
*Feltia geniculata* G & R  
*Anomogyna elimata* Gn.  
*Anomogyna dilucida* Morr.  
*Abagrotis alternata* Grt.  
*Pseudaletia unipuncta* Haw.  
*Apharetra dentata* Grt.  
*Crymodes devastator* Brace  
*Apamea americana* Speyer  
*Phlogophora periculosa* Gn.  
*Phlogophora periculosa* f. *v-brunneum*  
*Catocala sordida* Grt.  
*Catocala blandula* Hlst.  
*Bomalocha baltimoralis* Gn.  
*Epizeuxis americalis* Gn.  
*Orgyia leucostigma* A & S  
*Lygris explanata* Wlk.  
*Epirrhoe alternata* Mull.  
*Physostegania pustularia* Gn.  
*Nematocampa limbata* Haw.  
*Nepytia semiclusaria* Wlk.  
*Prochoerodes transversata* Dru.  
*Crambus ruricolellus* Zell.  
*Sparganothis reticulatana* Clem.  
*Pandemis limitana* Rob.  
Gelechiidae (1 species)



## RECOMMENDATIONS

Investigations carried out in the Wight Nature Preserve have shown the area to be a typical, though certainly not unique, representative of the flora of the coastal zone of the Atlantic upland. Up to the present there has been considerable disturbance by human activity. Four trees were cut down within the western third of the preserve since late fall of 1977, one of them being a large healthy white pine about 40 years old. However, the location of this small area within the developing residential community of Hubbards must inevitably result in increased disturbance. At this time it is therefore important to recommend some measures that will retain the natural values as long as possible.

The Indenture between the Province of Nova Scotia and Mrs. Jean Rosahn over the transfer of Deed included, among others, the following restrictions:

1. "The lands hereby conveyed are not to be used for any other purposes than a bird and wildlife sanctuary;"
2. "Hunting and camping shall not be permitted on said lands;"

In order to uphold these agreements under the pressures of increased residential development in surrounding areas some management program is necessary. The land itself is protected from development but increased population will result in increased public use of the property, which is not restricted in any way. Children are using the property for recreational activities and there is evidence of picnicing and vandalism to trees. The museum was asked in 1977 by the South Shore Recreation Association for permission to cut nature trails, but this is not considered desirable.

Access to the preserve cannot be entirely controlled and the area will suffer progressively from human activity. It is therefore best to enroll the sympathy and understanding of the community in the values of the preserve. This can be achieved through regulated activities of local organizations and schools with respect to use of the preserve. Our studies have set a base line which can be used for monitoring the impact of public usage and therefore as a guideline for future management.

It is recommended that:-

1. Awareness of the preserve, its values and legitimate usages, should be outlined in a small brochure, and this be made available locally. This could give rise to environmental education programs using the preserve.
2. Trail walking should be restricted to the existing survey cuts made in 1975. These provide a good view of the diversity of the preserve without requiring access to the more fragile interior areas.
3. The preserve should not be over-promoted as a place to visit and in this respect the provision of an access road and parking place near the site selected for erection of the cairn and plaque is undesirable.



4. Continued specialized documentation of the preserve will be encouraged, particularly for lower plants and fauna (especially birds). However, we do not intend to make this a continuing commitment for the Science Section of the Nova Scotia Museum. The quadrat plots established during the present investigation will be resurveyed at appropriate intervals in order to monitor natural development and human impact.

5. Community organizations that wish to help with maintenance of the preserve could be invited to clean up garbage, which is a particular problem along the north-western boundary.

It is hoped that these recommendations will be satisfactory for the present time. Modification may be made from time to time as a result of reconnaissance by Science Section staff and from the observations of other interested persons.

## APPENDIX I

Press release, Oct. 1, 1975  
published in the *Halifax Chronicle Herald* on October 1, 1975.

## WIGHT NATURE PRESERVE

On October 1, Mrs. Jean Wight Rosahn of Kensington, Connecticut, and the daughter of a former Nova Scotian, presented a Deed for 32 [sic] acres of land to the province. This heavily wooded lot will be retained by the Nova Scotia Museum as a natural preserve in accordance with the donor's wishes. The land, formally named the Wight Nature Preserve is part of the Wight estate in Hubbards where the family maintained a summer home for many years.

Mrs. Rosahn is the daughter of the late William Drewin Wight, and Elsa Symonds Wight. William Drewin Wight moved to the United States as a young man and became a successful architect. He and his brother headed the architectural firm, Wight & Wight, of Kansas City, Missouri, and many public buildings attest to his skill as an architect in the greater Kansas City area.

Mr. Wight, a man of diversified interests, had a great love for ecclesiastical and monumental architecture, and his home was a reflection of his fondness for antiques and art subjects.

In his youth he displayed an active interest in sports and this enthusiasm never left him.

Having grown up in this seaside province his love for the sea was strong as was evident in his return, year after year, with his family, to his native province. Mr. Wight died in Kansas City in 1947.

Mrs. Rosahn donated the land in memory of her parents and for the many years of happiness the Wight family found here, particularly in the Hubbards area. This generous gift to the people of Nova Scotia is yet another reminder of the close ties the people of this province have with many residents of the United States.

In the spring, the Nova Scotia Museum will conduct a complete ecological survey of this preserve, before any development takes place, to determine what is contained within the area and how best to preserve it without destroying any of its natural features. Walks and trails will be developed for public use.

The Nova Scotia Museum will mark this beautiful sanctuary with a plaque, acknowledging Mrs. Rosahn's generous gift for the everlasting use, benefit, and enjoyment of the people of Nova Scotia.

APPENDIX II

Text of the memorial plaque.

THE WIGHT NATURE PRESERVE

On October 1, 1975, this land was  
presented to the Province of Nova Scotia by

Mrs. Jean Wight Rosahn

in memory of

William Drewin Wight 1882 - 1947

and

Elsa Symonds Wight 1894 - 1974

to be preserved in its natural state

by the Nova Scotia Museum

for the use, enjoyment and benefit

of the people of Nova Scotia