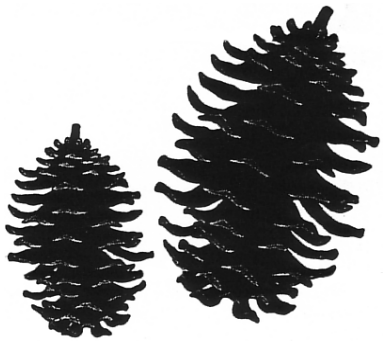
MANAGEMENT PLAN



WEST BROOK ECOLOGICAL RESERVE

Parks and Natural Areas Division
Department of Environment and Conservation
Government of Newfoundland and Labrador

1993

TABLE OF CONTENTS

1.0 WEST BROOK ECOLOGICAL RESERVE

1.1 *Location and Importance*

West Brook Ecological Reserve is situated at the headwaters of West Brook, approximately 14 kilometres southwest of Springdale (refer to Figure 1). The site is 10.74 km^2 in size and consists of two separate stands of Red Pine (Pinus resinosa Alt.), a small northern section (2.4 km^2) and a larger southern section (8.33 km^2). The site is accessible via a gravel road passing between the two stands. The separation of the site will aid in the management of the species, as will be discussed later.

Red Pine is presently the rarest indigenous coniferous tree species in Newfoundland (Roberts, 1985). Research suggests that Red Pine once had a much wider distribution on the island of Newfoundland, however, a number of ecological and anthropogenic factors have led to its decline and hence the need for protection. In addition to being one of the largest Red Pine sites on the island, the reserve is representative of Damman's Central Newfoundland Forest Ecoregion (refer to Figure 2).

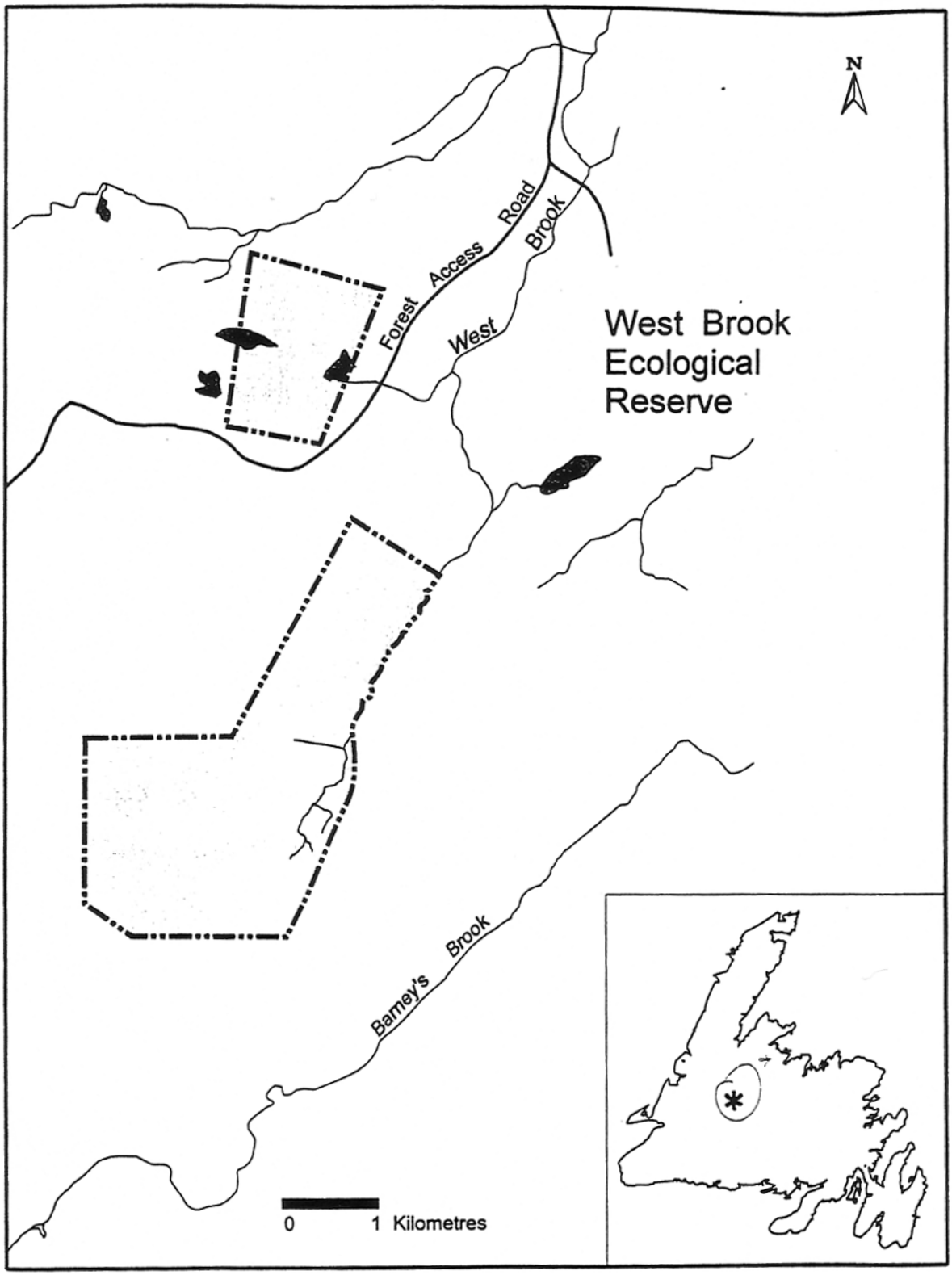
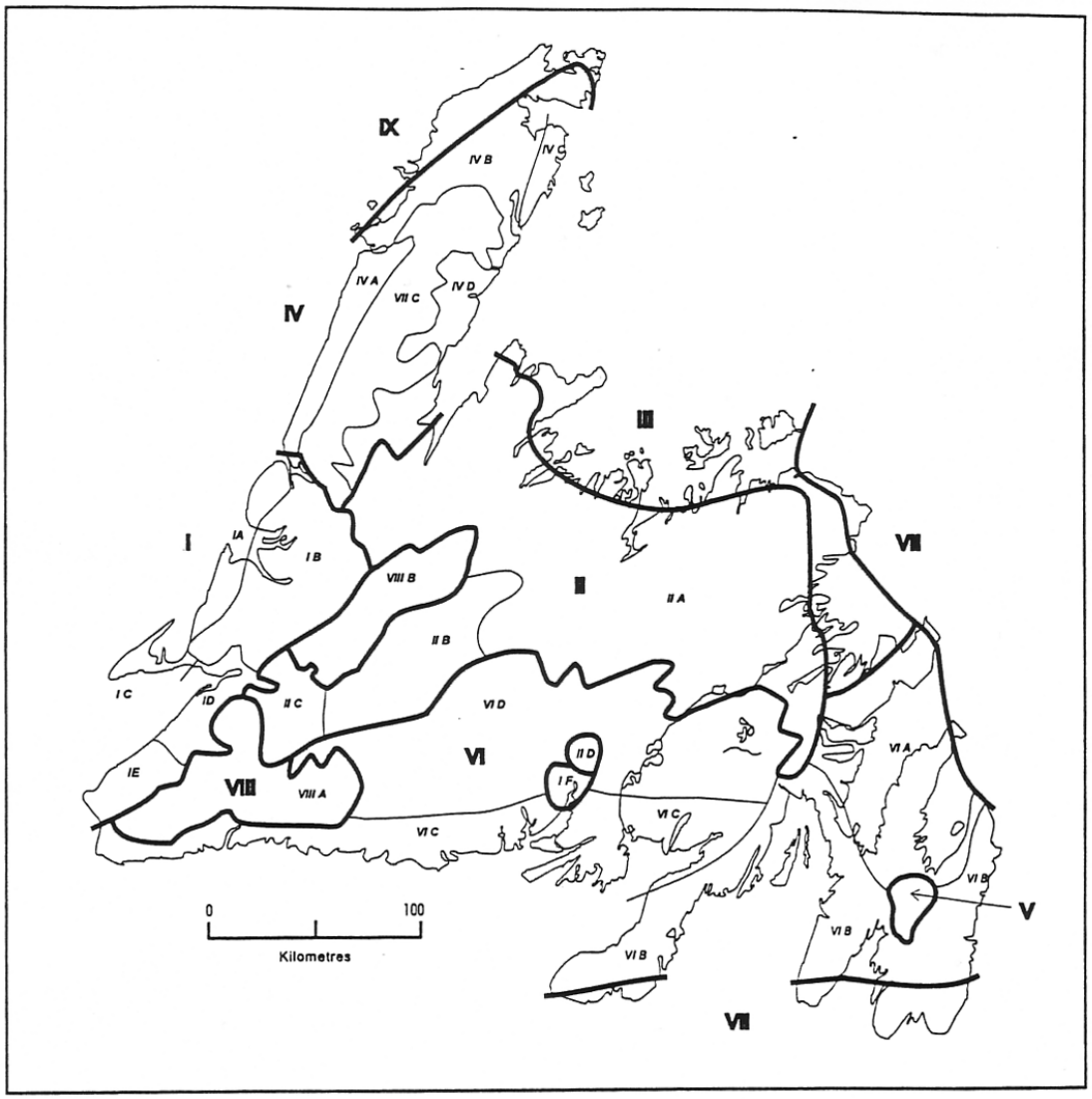


Figure 1. Location of West Brook Ecological Reserve.



I. WESTERN NEWFOUNDLAND ECOREGION
- A. Serpentine Subregion
- B. Corner Brook Subregion
- C. Port au Port Subregion
- D. St. George's Bay Subregion
- E. Codroy Subregion
- F. Bay d'Espoir Subregion

II. CENTRAL NEWFOUNDLAND ECOREGION
- A. Northcentral Subregion
- B. Red Indian Lake Subregion
- C. Portage Pond Subregion
- D. Twillick Steady Subregion

III. NORTH SHORE ECOREGION

IV. NORTHERN PENINSULA
- A. Coastal Plain Subregion
- B. Beaver Brook Limestone Subregion
- C. Northern Coastal Subregion
- D. Eastern Long Range Subregion

V. AVALON FOREST ECOREGION

VI. MARITIME BARRENS ECOREGION
- A. Northeastern Barrens Subregion
- B. Southeastern Barrens Subregion
- C. South Coast Barrens Subregion
- D. Central Barrens Subregion

VII. EASTERN HYPER- OCEANIC BARRENS ECOREGION

VIII. LONG RANGE BARRENS ECOREGION

IX. STRAIT OF BELLE ISLE ECOREGION

Figure 2. The Ecoregions of the Island of Newfoundland, (Damman, 1983).

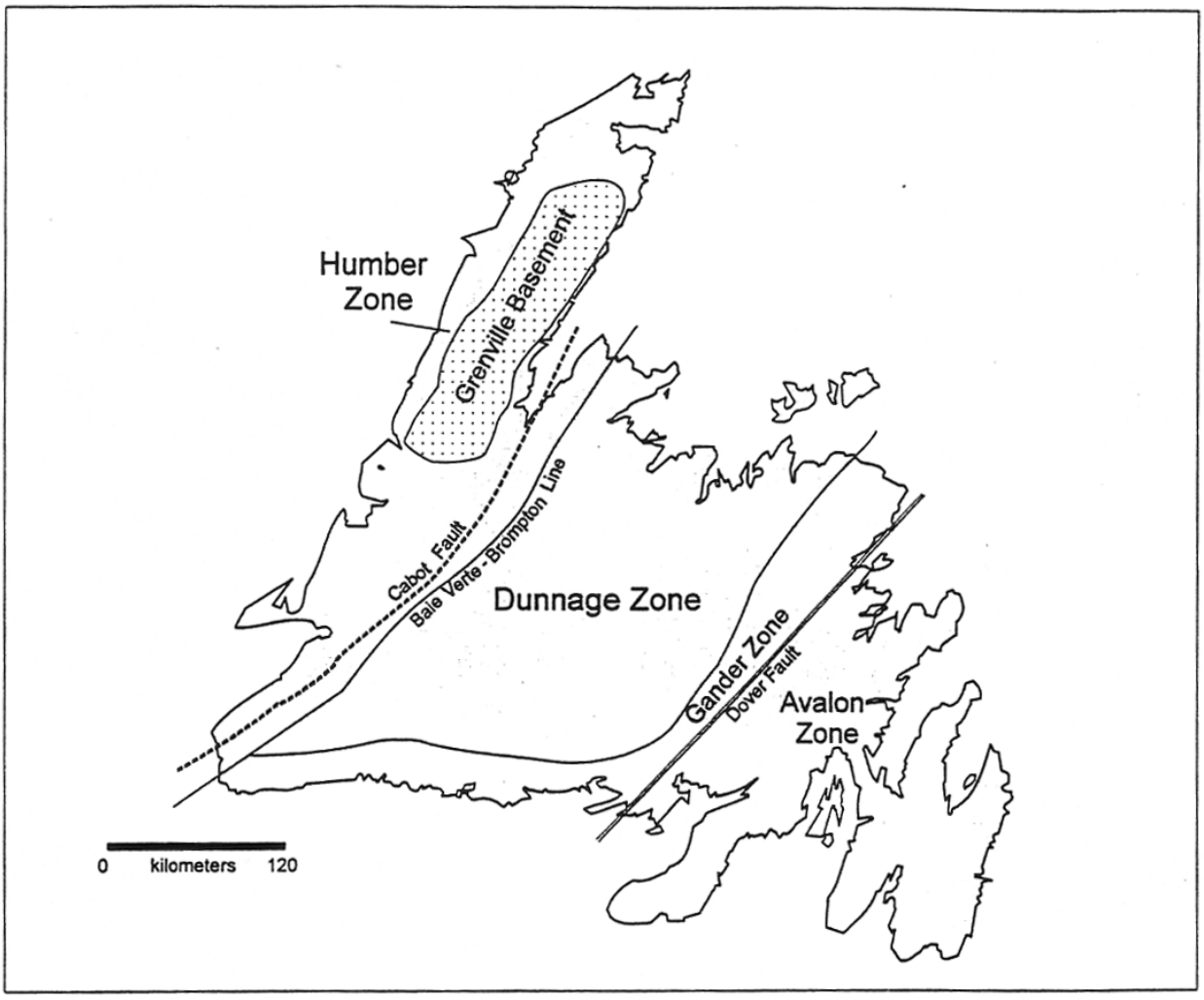


Figure 3. The four major techonostratigraphic divisions of the Island of Newfoundland (after Williams, 1979).

1.2 Site Description

1.2.1 Geology

The West Brook site consists of gently rolling hills. Geologically, it forms a minor portion of the Dunnage zone (refer to Figure 3). The Dunnage zone consists of predominantly marine and terrestrial volcanic and sedimentary rocks. The evolution of this zone is complex and involves periods of intense deformation as a result of tectonic forces. The rocks of the Dunnage zone record the cycle of opening and closing of an ancient ocean, Iapetus, from the late Precambrian to the mid-Paleozoic. This ancient ocean is believed to be the forerunner of the modern day Atlantic Ocean (Cawood *et al*, 1988). The West Brook reserve is located on the eastern limb of the Burnt Berry Brook syncline. The northern portion of the reserve is dominated by a thick sequence of Silurian to Devonian mafic volcanic's, while the southern portion of the reserve is dominated by a thick package of subaerial acidic volcanic's of a similar age (Dean, 1977).

1.2.2 Climate

West Brook being located in the interior of Newfoundland enjoys a climate, that surprisingly, is considered continental. Annual precipitation is between 900-1100 mm. Sixty-five to seventy-five percent of this precipitation falls as snow. Winters are cold and dry. Occasionally, the area experiences severe frosts (minima near -25 to -30°C). Summers are warm and moderately sunny with maxima often 26 to 30° during SW-SE airflow. It is the least windy and least foggy area of the Island (Banfield, 1983).

1.2.3 Fauna

There are no records for the site, but it is expected that fauna typical of the Central Newfoundland Forest Eco-region (refer to Appendix 2), may occur sporadically within the reserve.

1.2.4 Flora

The West Brook site contains large, homogeneous stands of Red Pine which help to ensure the continued survival of a climax community. The establishment of a reserve of two sections will better ensure the survival of an intact system from vandalism, uncontrolled fire, pests or other impacts. The Red Pine forest type is semi-open in terms of tree density, with Red Pine occupying 50-70% cover in the larger stands to 5-25% cover in the very small stands. Seven other tree species occur, but most of these have less than 5% cover in the stands in which they occur. Black Spruce occurs in every stand, sometimes in equal number to the Red Pine. A succession of the Red Pine forest type to Black Spruce type after fire, logging or disturbance for road development is a real possibility in most stands (Roberts, 1989). While White Pine occurs in most stands, it is much less abundant than Red Pine. White Pine is known to have a greater ecological amplitude than Red Pine (Dansereau, 1953), but Red Pine can thrive on sites that are too poor for White Pine. Other tree species present to a lesser degree include Balsam Fir, Larch, White Birch and Trembling Aspen. The dominant minor vegetation associated with the Red Pine forest in nearly all stands is *Kalmia augustifolia*, consistently occupying 50-75% of the ground cover. Other ericaceous shrubs which dominate 20 - 50% of the ground cover include: *Rhododendron canadense, Vaccinium angustifolium*, *Arctostaphylos uva-ursa, V- vitis-idaea and Ledum groenlandicum.* The

Cladonia lichens are very common in almost all stands and have some relevance to fire frequency.

1.3 Red Pine - Past and Present

Red Pine has a wide distribution, primarily in northeastern North America, from Newfoundland to West Virginia, west to Manitoba. One of the earliest Red Pine distribution maps was published in 1911 by Fernald (refer to figure 4). It has been theorized that this drought tolerant species successfully migrated from coastal New England to the Island of Newfoundland via islands of land along the eastern seaboard. Red Pine is a relatively rare conifer species that is subject to local extinction throughout its range in North America. In Newfoundland, Red Pine exists at the northeastern extreme of its range, where its continued survival is precarious. Any species which occupies the extremity of its range shows increased sensitivity to environmental change.

Natural stands of Red Pine in Newfoundland are congregated in three areas (refer to figure 5): one consisting of widely scattered stands near Terra Nova Lake in the east, another located in the vicinity of Sandy Lake in the west and a third population consisting of small stands and some isolated trees scattered throughout the Exploits River watershed. The West Brook reserve is part of this third population center. There are 22 stands of Red Pine in total on the Island. These stands vary in size from small ones with only a few trees to those exceeding 100 ha, with several thousand Red Pine (refer to Table 1). The West Brook stand, denoted as Rowsell's Brook by the Canadian Forestry Service is the third largest site on the Island with 3000 trees. In Newfoundland, Red Pine usually grows on sands and gravels of glacial outwash or on lake bottom

sediments. The mineral soils under these stands are nutrient-poor, coarse-textured, humo-ferric podzols (Roberts and Bajzak, 1984). The major limitations to forest growth

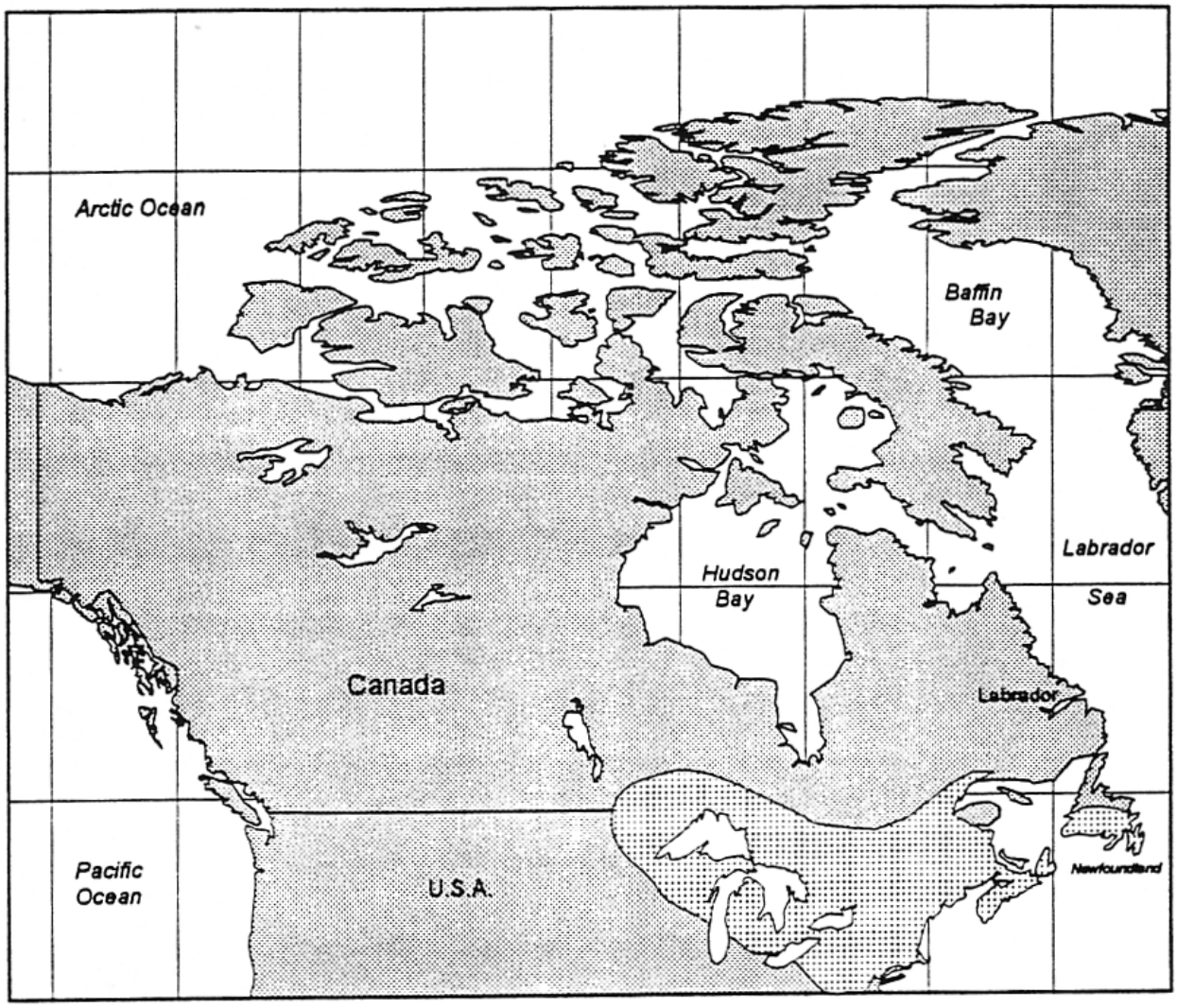


Figure 4. The Distribution of Red Pine in the early twentieth century (Fernald, 1911).

are the availability of moisture and the natural fertility of the site. In Newfoundland, Red Pine occupies the driest and most nutrient-poor sites.

Roberts (1985) indicates that the 7 stands surrounding Terra Nova Lake were previously continuous. Red Pine are reported to have grown right to the coast in this part of its range prior to the large forest fires of 1890, 1904 and 1946. In addition, Red Pine were cut for railway ties and structural timber throughout the Terra Nova and Gambo areas from the turn of the century. Extraction of gravel and fill for railway road beds and the Trans Canada Highway has also contributed to the decline of Red Pine (Roberts, 1985).

Natural regeneration for most of the Island's native Red Pine is poor. Regeneration surveys have shown that stands without any physical disturbance or recent wildfire have few regenerating Red Pine. The thick ericaceous mar humus and dense kalmia understory vegetation has both a physical and allelopathic effect upon Red Pine regeneration. Severe competition from the more shade tolerant Black Spruce, has also contributed to the decline of Red Pine in the Province. Unfortunately, in some of the more accessible stands people have removed much of the new seedling natural regeneration, presumably for transplanting in private gardens. With the combined threat of private harvesting, the removal of natural regeneration and the potential for the spread of insects or disease, many of Newfoundland's remaining Red Pine stands may become extirpated in the near future.

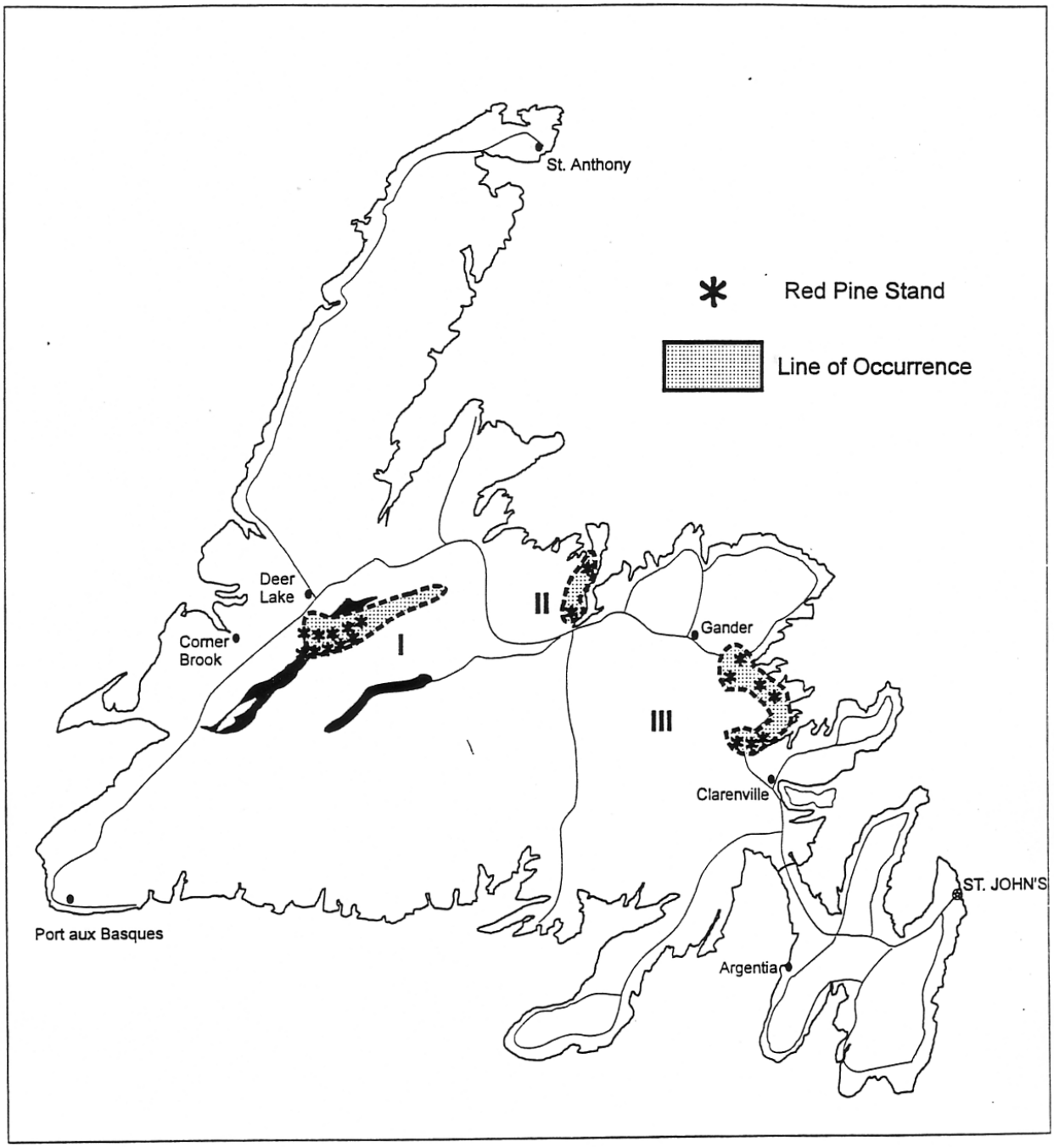


Figure 5. The distribution of Red Pine in Newfoundland (Roberts, 1985).

Stand Name	Map Reference	1:50,000 Map Sheet	1:12,500 Air Photo	Approximate Area. (HA) *	Approximate Number of Trees
* Howley (H)	932-468	12H/3 Deer Lake	NF 78040-68	15	650
*Sandy Lake (Sl-I)	950-475	12H/3 Deer Lake	NF 78040-69	20	1000
*Sandy Lake (Sl-2)	963-486	12H/3 Deer Lake	NF 78040-128	5	250
*Sandy Lake (81-3)	988-498	12H/3 Deer Lake	NF 78040-125	5	350
*SandyLake(Sl..4)	023-528	12H/2 The Topsails	NF78041-26	5	200
Sandy Lake (Sl-5)	033-535	12H/2 The Topsails	NF 78041-1 50	5	200
*Sandy Lake (Sl-6)	047-541	12H/2 The Topsails	NF 78041-203	5	200
~SandyLake(Sl7)	055-548	12H/2The TopsaUs	NF78041-202	10	250
* Birchy NarroWs (BN)	098-588	12H17 Sheffield Lake	NF 31077-9	1	25
0. Old Stand (OS)	207-632	12H/7 Sheffi&d Lake	NF 78058-58	1	15
1. Rowsells Brook (RB)	489-582	12H/8 Springdale	NFA 31076-164	200	3000
2. Exploits River (ER)	147-319	2E13 Botwood	NFA 31034-5	1	15
3. Charles Arm (CA)	246-687	2E15 Point Leamington	NFA 31106-73	5	300
4. David Smaliwood Park (DSP)	042-090	20/16 Gambo	NF 7801 8-1	5	150
5. Mint Brook (MB)	007-017	2D/9 Glovertown	NFA 31109-142	1	15
6. Pine Acres (PA) Grant's Pit	080-015	2D19 Glovertown	NFA 31 1069-154~	400	5000
7. Traytown (U)	948-798	2C/12 Eastport	NFA 31108-79	5	50
8. George's Pond (GP)	889-753	20/9 Glovertown	NF 78030-1 25	20	500
9. Terra Nova (TN)	060-756	20/9 Glovertown	NFA 31096-1 77	2	50
10. Terra Nova 2 (TN2)	034-750	2D/8 Port Blandford	NFA 31096-1 80	50	250
TOTALS:				761 ha	12,470 ha

* Area of the land form
100 ha is reserved by the provincial government with the remaining 300 ha privately owned.

Table 1. Natural Red Pine stand locations, map and air photo references, extent and estimates of the number of trees in each stand (Roberts, 1985).

1.4 The Need For Protection

The declining number of rare species like Red Pine is of concern on the Island of Newfoundland. The Province's forest landscape is dominated by 4 coniferous tree species (Black Spruce, White Spruce, Balsam Fir and Larch). Insect and disease problems, particularly those associated with introduced pests, could threaten the existence of any one of these species, leaving Newfoundland with even less botanical diversity than presently exists. The pines in particular have an important role in Newfoundland since they occupy some of the poorest and driest sites, where they out perform other native conifers. Newfoundland has many dry, infertile sites where native pines are remarkably productive. They are a valuable asset to the landscape, biologically, aesthetically and economically. The survival of several of our native conifers has been threatened by human activity (harvesting, fire and the White Pine blister rust and the scleroderris canker). It has been observed that the disappearing species problem can be seen as a symptom of the pervasive tendency to convert more and more relatively natural ecosystems to intense human use. The establishment of an ecological reserve to protect Red Pine is a local solution to this global problem.

2.0 MANAGEMENT POLICIES

2.1 Introduction

Ecological Reserves are established under the Wilderness and Ecological Reserves Act, (1980) for the preservation of areas in the Province which contain unique or representative ecosystems or natural phenomena. The West Brook Ecological Reserve protects Red Pine which is presently the rarest indigenous coniferous tree species in Newfoundland (Roberts, 1985). In addition to being a Red Pine site, the reserve is part of the Central Newfoundland Forest Eco-region. As stated previously, research suggests that Red Pine once had a much wider distribution on the island of Newfoundland, however, a number of ecological and anthropogenic factors has led to its decline and hence the need for protection.

2.2 Management Goals

The West Brook Ecological Reserve is established to:

(a) preserve the habitat and existing specimens of Red Pine as an example of the rarest indigenous coniferous tree species in Newfoundland, within their natural habitat;

(b) protect a representative example of the Central Forest Eco-region;

(c) provide an educational opportunity for the general public of Newfoundland and Labrador to share a unique feature of their natural history;

(d) provide opportunities for scientific research of the Red Pine species and its habitat.

2.3 Management Policies

Resource management at the West Brook Ecological Reserve will emphasize the preservation of the Red Pine forest community, while at the same time, provide opportunities for public education and scientific research.

The primary purpose of the West Brook Ecological Reserve is to preserve the natural history of the area and to encourage scientific research that does not conflict with the general objectives of site protection. The following management policies apply:

(a) use of the site for educational purposes will be permitted. Students from local and other institutions will be permitted to visit the Reserve, under supervision, for educational purposes;

(b) scientific research will be permitted when it does not conflict with the prime objective of site protection. The collection of plant and animal specimens will be controlled by a permit system. Results of such research will be forwarded to the managing agency;

(c) the introduction of exotic species or the extermination of native species is strictly prohibited;

(d) since this habitat is very susceptible to uncontrolled fire, strict measures for the prevention and control of fire may be required.

2.4 Implementation Guidelines

In addition to the requirements of the Wilderness and Ecological Reserves Act, (1980), which apply to all ecological reserves, the following statements are intended to serve as a guide to users and managers of the West Brook Ecological Reserve:

(a) Reserve Management

(I) the managing agency of the Reserve is Parks and Natural Areas Division of the Department of Environment and Conservation;

(ii) the boundaries of the reserve will be clearly identified by signs placed along the perimeter;

(iii) routine patrols will be conducted by the managing agency and/or other designated government officials;

(iv) priority will be given to undertaking a botanical inventory of the reserve aimed at providing a systematic checklist of the flora and the location of Red Pine and other species;

(v) for the purpose of monitoring the long-term environmental quality of the reserve it may be necessary to establish permanent sample plots within the reserve. Permanent plots should be measured at the time the reserve is established and every five years thereafter.

(b) Scientific Research

Providing areas for long-term scientific research is one of the main reasons for creating and managing the Province's ecological reserves. Its is important therefore that research be carried out such that the scientific value of the reserve is not destroyed or diminished for future investigators. Accordingly, anyone wishing to conduct research within the West Brook Ecological Reserve will require a permit from Parks and Natural Areas Division, Department of Environment and Conservation. Applications for permits must include the objective of the research, description of the project, methodology to be used and the time period of the project. The following conditions apply to each permit issued:

(I) all published information related to research conducted at the site, will acknowledge the existence of the ecological reserve, permission given by Parks and Natural Areas Division and the requirements made of the researcher;

(ii) a report of the results of each research project will be filed with Parks and Natural Areas Division, Dept. of Environment and Conservation. Copies all scientific papers both published and unpublished, will be forwarded to the Division upon completion.

(c) Educational Use

The site may be used for educational purposes as long as such use does not damage the scientific value of the reserve. Permits will be required for institutions, individuals and groups wishing to utilize the area for educational use. These permits can be obtained from Parks and Natural Areas Division, Department of Environment and Conservation.

3.0 APPENDICES

3.1 Appendix I - Selected *References*

SELECTED REFERENCES

Banfield, C.E. 1983. Climate. In Biogeography and ecology of the island of Newfoundland. G.R. South (Ed). Dr. W. Junk Publishers, The Hague: P.37-I 06.

Cawood, P.A. et al, 1988. Trip Al. Geologic cross-section of the Appalachian Orogen. G.A.C., St. John's, NF. P.1-14

Damman, A.W.H. 1983. An ecological subdivision of the island of Newfoundland. In: Biogeography and ecology of the island of Newfoundland, G.R. South (Ed) Dr. W. Junk Publishers, The Hague: p.163-206.

Dansereau, P. 1973 The post-glacial pine period, Trans. roy. Soc. Can., Vol XLVII, Series 3, Section 5: p. 23-38

Dean, P.L. 1977 A report on the geology and metallogeny of Notre Dame Bay area, to accompany metallogenic maps 12 Hll, 8,9, and 2E13, 4,5,6,7,9,10,11 and 12. Dept. of Mines and Energy, Report 77-10: p. 1-17

Fernald, M.I. 1911. A botanical expedition to Newfoundland and Southern Labrador. Rhodora, Vol. 13: p. 109-162

Meades, S. 1990 Natural Regions of Newfoundland and Labrador. Protected Areas Association, St. John's, NF p.192-193

Roberts, B.A. 1985. Distribution and extent of *Pinus resinosa Ait* in Newfoundland. Rhodora, Vol 87: p. 341-356.

Roberts, B.A. 1989. Natural reproduction of Red Pine *(Pinus resinosa Alt)* in Newfoundland, Forestry Can., St. John's, NF., Information Report N-X-273: p.1-36

Williams, H. 1979. Appalachian Orogen in Canada. Can. J. Earth Sci., Vol 16: p.792-807.

3.2 Appendix II- Fauna of Ecoregion II

FAUNA TYPICAL OF ECOREGION II
THE CENTRAL NEWFOUNDLAND FOREST (in Meades, 1990)

LAND MAMMALS

Barren Habitats:	Caribou (important during migration)		
Forest and Shrub Habitats:	Caribou	Moose	Lynx
	Pine Marten	Mink	Red Squirrel
	Eastern Chipmunk	Snowshoe Hare	Little Brown Bat
	Northern Long-eared Bat	Deer Mouse (near human habitation)	
Ubiquitous: (occurring in a variety of habitats)	Black Bear	Red Fox	Ermine
	Meadow Vole	Masked Shrew	
Aquatic Habitats:	Beaver	Muskrat	Otter
AMPHIBIANS:	Green Frog		
FISH:	Common species:		
	Arctic Char	Atlantic Salmon	Rainbow Smelt
	Threespine Stickeback	Brook Trout	American Eel
	Ninespine Stickleback		
	Rare species:		
	Sea Lamprey	Alefish	Rainbow Trout (Introduced)

CHARACTERISTIC BIRDS:

Forest Habitats:	Bald Eagle	Goshawk	Osprey
	Sharp-shinned Hawk	Merlin	Spruce Grouse
	Ruffed Grouse	Boreal Owl	Great Horned Owl
	Northern Flicker	Hermit Thrush	Gray Jay
	Yellow-bellied Flycatcher	Yellow-rumped Warbler	

CHARACTERISTIC BIRDS:

Shrubby or Thicket Habitats:	Willow Ptarmigan	
Wetland Habitats: (marshes, peatlands)	Northern Hawk-Owl	Lincoln's Sparrow
Aquatic Habitats: (freshwater)	Green-winged Teal Ring-necked Duck	Canada Goose

3.3 Appendix III - Reserve Order and Regulations

RESERVE ORDER

West Brook Ecological Reserve Order
under the
Wilderness and Ecological Reserves Act
(O.C. 96-199)

Under the authority of subsection 18(1) of the *Wilderness and Ecological Reserves Act* and the *Subordinate Legislation Revision and Consolidation Act,* the Lieutenant-Governor in Council makes the following Order.

ORDER

Analysis

Short title 1. This Order may be cited as the *West Bmok Ecological Reserve Order.*

69/93 si

Area included 2. The area included in the West Brook Ecological Reserve is as set out in Schedule A.

69/93 s2

Outline 3. An outline of the West Brook Ecological Reserve Management Plan is as set out in Schedule B.

69/93 s3

Repeal 4. The Order re: Provisional Ecological Reserve - West Brook, Newfoundland Regulation 150/90, and the West Brook Ecological Reserve Order, 1993. Newfound land Regulation 69/93, are repealed.

Schedule A

West Brook North Boundary Description

All that piece or parcel of land situate and being approximately 18.4 kilometres southeast of Halls Bay in the province, abutted and bounded as follows, that is to say, by a line beginning at a point, that point having co-ordinates of north 5,462,675 metres and east 548,308 metres with reference to the Transverse Mercator Projection for the province;

Then from the point of beginning so determined and running in a straight line in a general southerly direction, 1,880 metres. more or less, to a point having co-ordinates of north 5,460,815 metres and east 548,033 metres:

Then turning and running in a straight line in a general easterly direction 1,080 metres, more or less, to a point having co-ordinates of north 5,460,648 metres and east 549,100 metres;

Then turning and running in a straight line in a general northeasterly direction 1,795 metres, more or less, to a point having co-ordinates of north 5,462,294 metres and east 549,816 metres;

Then turning and running in a straight line in a general northwesterly direction *1,555* metres, more or less, to the point of beginning;

Containing in all an area of 239 hectares, more or less.

All bearings and co-ordinates are referred to the above mentioned projection.

West Brook South Boundary Description

All that piece or parcel of land situate and being approximately 20 kilometres southeast of Halls Bay in the province, abutted and bounded as follows, that is to say, by a line beginning at a point on the western side of Rowsells Brook, that point having co-ordinates of north 5,459,200 metres and east 550.411 metres with reference to the Transverse Mercator Projection for the province;

Then from the point of beginning so determined and running in a straight line in a general northwesterly direction 1.134 metres. more or less, to a point having co-ordinates of north 5,459,779 metres and east 549.436 metres;

Then turning and running in a straight line in a general southwesterly direction 2,678 metres, more or less, to a point having co-ordinates of north 5,457,402 metres and east 548,201 metres;

Then turning and running in a straight line, due west, 1,569 metres, more or less, to a point having co-ordinates of north *5,457,402* metres and east 546,632 metres;

Then turning and running in a straight line, due south. 1.920 metres, more or less, to a point having co-ordinates ofnorth 5,455,482 metres and east 546,632 metres;

Then turning and running in a straight line in a general southeasterly direction 365 metres, more or less, to a point having co-ordinates of north 5,455,240 metres and east 546,906 metres;

Then turning and running in a straight line in a general easterly direction 1,981 metres, more or less. to a point having co-ordinates of north *5,455,253* metres and east 548,887 metres;

Then turning and running in a straight line in a general northeasterly direction 1,672 metres, more or less. to a point having co-ordinates of north 5.456,792 metres and east 549,542 metres;

Then turning and running in a straight line in a general northerly direction 689 metres, more or less, to a point having co-ordinates of north 5,457,478 metres and east 549.603 metres:

Then turning and running in a straight line, due west, 167 metres, more or less, to a point in the western side of Rowsells Brook and having co-ordinates of north 5,457,478 metres and east 549,436 metres;

Then turning and running along the sinuosities of the western shoreline of Rowsells Brook in a general northeasterly direction 1,980 metres, more or less, to the point of beginning;

Containing in all an area of 835 hectares, more or less.

All bearings and co-ordinates are referred to the above mentioned projection.

Schedule B

Outline of West Brook Ecological Reserve Management Plan

The area known as West Brook in the vicinity of Springdale is established as an ecological reserve to preserve the Red Pine. the province's rarest indigenous coniferous species, and a portion of the Central Forest Ecoregion for scientific study and educational purposes. To accomplish this, there will be no removal of plants or other materials from this site except under specific permit, and there will be no development within the reserve. Scientific research at this site will be encouraged and educational use will be permitted where it does not conflict with the general objectives of preservation and scientific research.

RESERVE REGULATIONS

Botanical Ecological Reserve Regulations
under the
WIlderness and Ecological Reserves Act
(O.C. 97-247)

(Filed May 21, 1997)

Under the authority of sections 25 and 29 of the *Wilderness and Ecological Reserves Act,* the Lieutenant-Governor in Council makes the following regulations.

Dated at St. John's, May 13, 1997.

John Cummings
Deputy Clerk of the Executive Council

REGULATIONS

Analysis

Short tide 1. These regulations may be cited as the *Botanical Ecological Reserve Regulations.*

Definitions 2. In these regulations

(a) "Act" means the *Wilderness and Ecological Reserves Act;*

(b) "managing agency" means the Parks and Natural Areas Division of the Department of Tourism, Culture and Recreation;

(c) "management plan" means the management plan for a declared botanical ecological reserve on file with the managing agency;

(d) "permit" means a permit issued and valid under these regulations;

(e) “personal water craft” includes jet-skis, sea-doos, wave-runners and the like but excludes ordinary motorized boats, kayaks and canoes;

(f) “reserve” means a botanical ecological reserve set aside under the Act and listed in the Schedule;

(g) “structure” means a man-made object intended to be permanent or semi-permanent in nature and includes, but is not limited to, buildings, houses, cottages, cabins,, wharves, docks, boathouses, slipways, trailers, mobile homes, tents, tent platforms, and recreational vehicles used for any purpose but does not include semi-permanent blinds and signs erected under the authority of the management plan; and

(h) “wildlife” means an animal or plant.

Restrictions

3. Within a reserve, a person shall not

(a) remove or dislocate a botanical specimen except for scientific study and this only when the researcher is the holder of a valid permit;

(b) pollute or obstruct a stream or other body of water or dispose of any garbage;

(c) build or erect or cause to have built or erected any structure;

(d) destroy, damage, remove, disturb, or handle the home, den, or nest of wildlife;

(e) destroy, damage, remove, disturb, or handle an egg of any wild bird;

(f) destroy, damage and remove any wildlife, fossil or other natural object;

(g) destroy, damage, or remove a sign or other government property;

(h) remove sand, stone, or gravel:

(I) prospect, claim stake, mine or quarry;

(j) use, operate or be in possession of a motor car, motor truck, four-wheel drive vehicle, all-terrain vehicle, snowmobile, personal water craft or other motorized conveyance;

(k) land an aircraft;

(1) operate a commercial establishment or commercial enterprise within the reserve, except guiding, touring and outfitting;

(m) display, post or broadcast an advertisement;

(n) herd or graze animals within a reserve;

(o) light a fire; and

(p) camp.

Exception

4. A person engaged in the administration or management of a reserve in the normal course of his or her duties is exempt from paragraphs 3(a), (d), (e), (f), (g), (k) and (m).

Research in research

5 Scientific research within a reserve shall require a permit and serve those permits may be obtained from the managing agency on submission of a written request outlining the research project, and subject to the terms and conditions that the managing agency may determine.

Exception for research

6. A person engaged in scientific study which is approved by the managing agency and for which a permit has been issued under section *5* may be exempted from paragraphs 3(a),(c), (d), (e) and (f).

Hunting and fishing

7. All hunting and fishing within the West Brook and Watts Point Reserves is allowed in accordance with permits or licenses issued under the *Wildlife Act,* the *Migratory Birds Convention Act* (Canada) or the *Fisheries Act* (Canada).

Permit required

8. (1) A person engaged in a touring, guiding or outfitting enterprise shall obtain a permit for the enterprise from the managing agency.

(2) Applications for a permit shall provide a full description of the enterprise planned.

Application of regulations

9. These regulations shall apply to the botanical ecological reserves listed in the Schedule, except to the extent that they have been modified by the Order declaring a given botanical ecological reserve in effect.

Schedule

1. Hawke Hill Ecological Reserve.
2. Wart's Point Ecological Reserve.
3. West Brook Ecological Reserve.
4. King George IV Ecological Reserve.

NEWFOUNDLAND REGULATION 33/99

Botanical and Ecological Reserve Regulations (Amendment)
under the
Wilderness and Ecological Reserves Act
(O.C. 99-138)

(Filed April 5, *1999)*

Under the authority of sections *25* and 29 of the *Wilderness and Ecological Reserves Act,* the Lieutenant-Governor in Council makes the following Order.

Dated at St. John's. March 29, 1999.

John R. Cummings. Q.C.
Deputy Clerk of the Executive Council

REGULATIONS

Analysis

NR 64/97

1. Section 7 of the *BotaniCal Ecological Reserve Regulations* is repealed and the following substitutcd

NG-99-04-23

Exceptions

7.(1) Notwithstanding paragraph *3(f),* all hunting and fishing within the West Brook and Watts Point Reserves is allowed in accordance with permits and licences issued under the *Wild Life Act.* the *Migratory Birds Convention Act* (Canada) and the *Fisheries Act* (Canada).

(2) Notwithst3flding paragraphs 3(t). (j) and (p). all hunting, trapping, fishing. camping, snowmobiling and access by motorized boat within the Redfir Lake — Kapitagas Channel Ecological Reserve is allowed in accordance with permits and licences issued under the *Wild Life Act,* the *Migratory Birds Convention Act* (Canada) and the *Fisheries Ac:* (Canada).

2. The Schedule to the regulations is amended by adding immediately alter the line commencing with the number "4" the following:

5. Redfir Lake — Kapitagas Channel Ecological Reserve.

NG-99-04-23