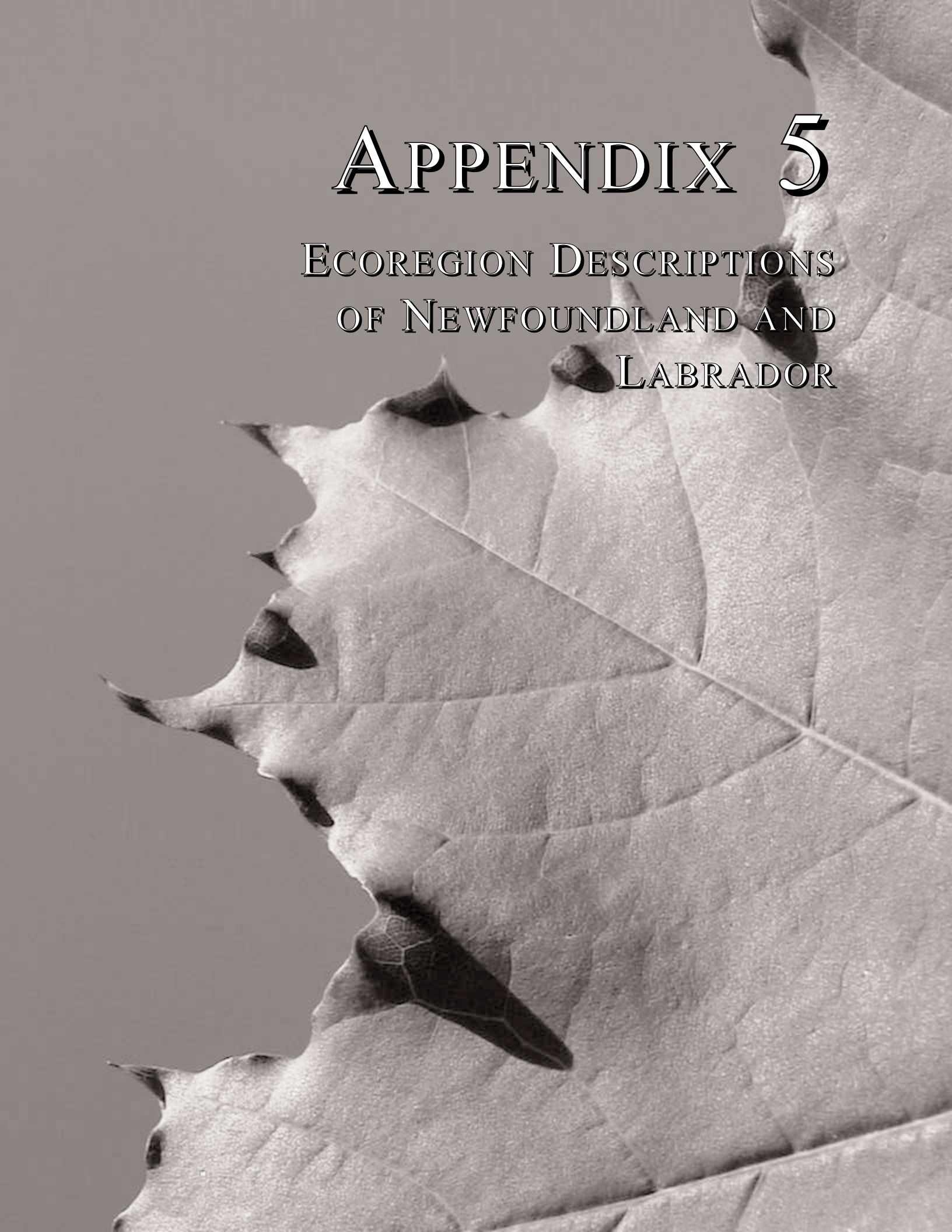

Appendix 5

Ecoregion Descriptions of Newfoundland and Labrador

Newfoundland Ecoregions

i) Western Newfoundland Ecoregion

This ecoregion is characterized by a humid climate with a relatively long frost-free period. It contains some of the most favourable sites for forest growth in the province. The Dryopteris-Hylocomium-Balsam Fir forest is the dominate forest type of this ecoregion. The absence of prolonged dry periods has excluded fires from all but the most coarse-textured soils. Consequently, balsam fir rather than black spruce is the dominant forest cover. On flat coastal areas, extensive plateau bogs occur, while slope fens and alder swamps are the dominant wetland types on nutrient rich slopes and valleys. Serpentine and limestone barrens are common on exposed ultramafic (serpentine) and calcareous (limestone and dolomite) bedrock.

ii) Central Newfoundland Ecoregion

Central Newfoundland has the most continental climate of any part of insular Newfoundland. It has the highest summer temperatures and the lowest winter temperatures. Because of warm summers and high evapo-transpiration rate, soils in the northern part of this ecoregion exhibit actual soil-moisture deficiency. The Hylocomium-Balsam Fir forest type is characteristic of this area. Forest fires have played a more important role in this ecoregion's natural history than in other regions. Thus, much of the Balsam Fir-Feathermoss forest types have been converted to black spruce and some of the richer site types are dominated by white birch and aspen. In areas that have been burned repeatedly, dwarf shrub (Kalmia) barrens have replaced forest stands. Raised bogs are the characteristic wetland type.

iii) Northshore Ecoregion

This ecoregion represents a narrow coastal zone 20-25 km wide extending from Bonavista Bay to the Baie Verte Peninsula. Black spruce and balsam fir form a continuous forest, except where crowberry barrens dominate coastal headlands. The vegetation season is shorter and cooler than in central Newfoundland, but the frost-free period is several weeks longer (W.J. Meades and Moores, 1989). The summers are relatively dry and warm and soil moisture deficiencies may occur. Like the Central Newfoundland Ecoregion, encroachment of ericaceous shrubs on dry nutrient-poor sites after cutting and fire is a serious silvicultural problem.

iv) Northern Peninsula Ecoregion

This ecoregion differs from most other forested parts of the island by the shortness of the vegetation season: 110-150 days compared to 145-170 days for other areas (W.J. Meades and Moores, 1989). The frost-free period is similar to other areas and somewhat longer than central Newfoundland. Soils are comparable to those of western Newfoundland, with limestone underlying most of the region. Acidic rock is more common on the eastern side of the peninsula. Balsam fir is the dominant tree in forest stands, except at high elevations on the eastern side of the peninsula, where it is replaced by black spruce. There is very little fire history in this ecoregion. Limestone barrens are common along the west coast, with dwarf shrub and crowberry barrens on the east coast. Plateau bogs cover extensive areas of the coastal lowlands.

v) Avalon Forest Ecoregion

This ecoregion represents a sheltered outlier within the more open and exposed Maritime Barrens Ecoregion. Pure stands of balsam fir with a significant mixture of white and yellow birch dominate this region. The Avalon Forest Ecoregion has been spared the ravages of fire that decimated the forests in the surrounding landscape, converting them to open heathland. The very moist climate and ribbed moraine topography give this small (500km2) ecoregion its uniqueness. Raised bogs occur between moraines. The excessive frequency of fog is clearly evidenced by the abundance of pendant, arboreal lichens hanging from the branches of balsam fir.

vi) Maritime Barrens Ecoregion

The Maritime Barrens Ecoregion extends from the east to the west coast of Newfoundland along the south-central portion of the Island. This ecoregion has the coldest summers, with frequent fog and strong winds. Winters are relatively mild, with intermittent snow cover, particularly near the coastline. The landscape pattern usually consists of stunted balsam fir broken by extensive open Kalmia barren, which developed because of indiscriminate burning by European settlers. Good forest growth is restricted to the long slopes of a few protected valleys. Slope and basin bogs are the most common wetland type.

vii) Eastern Hyper-Oceanic Barrens Ecoregion

The main portion of this ecoregion occurs on the extreme south coast of the Avalon and Burin Peninsulas, with two additional areas on the northeast coast near Bay de Verte and Cape Freels. Although this ecoregion is no more than 200m in elevation, the extreme oceanic climate prevents the development of forest other than balsam fir krummholz. Moss (Rhacomitrium) and crowberry (Empetrum) barrens in this area have a close affinity to oceanic parts of northern Scotland and southern Norway (W.J. Meades, 1983). Blanket bogs are characteristic of this ecoregion and cover extensive areas.

viii) Long Range Mountain Ecoregion

This ecoregion encompasses the mountainous areas above the tree-line on the Long Range Mountains. Trees occur only as krummholz (i.e., stunted forest) which is usually dominated by eastern larch and black spruce; however, sheltered valleys may contain small patches of forest. The vegetation is primarily alpine barren, dominated by Arctic-alpine plants, or crowberry barren. Shallow ribbed fens and slope bogs often cover extensive areas.

ix) Strait of Belle Isle Ecoregion

This region is dominated by an almost treeless tundra-like vegetation. White spruce and balsam fir occur as krummholz, interspersed with Arctic-alpine plants. The soils are generally very shallow and outcrops of calcareous bedrock are common throughout. Numerous endemic and rare species occur in the limestone barrens which are characteristic of this ecoregion. Wet depressions are vegetated by rich fens.

Labrador Ecoregions

i) Low Arctic Tundra - Cape Chidley

This ecoregion is located on the northern tip of Labrador. A flat coastal plain dominates the area near Ungava Bay, while the southern portion contains low, steep-sided hills. It has the driest climate in Labrador and a growing season of less than sixty days. The dominant vegetation is tundra (alpine barren, dominated by rock and open ground with patches of mosses and lichens). Coastal headlands and ledges often support moss (Rhacomitrium) barren, while sporadic snowbed communities (sedge meadows) occur in late melting zabois. There are no tall shrubs or trees, and no true peatlands exist; however, marshes can occur along river valleys.

ii) Low Arctic-Alpine - Torngat

The Torngat mountains and intervening fjords dominate this ecoregion. The upper walls of the fjords are nearly vertical rock faces, while lower slopes are covered with scree. Valley floors usually consist of outwash terraces. The climatic gradient is great, due to the wide elevation range. The climate is similar to the Low Arctic Tundra - Cape Chidley ecoregion, but with a longer growing season (60 to 80 days). The dominant vegetation is alpine heath, with sedge meadows (snowbed communities), fed by seepage from late melting snow patches. Trees are absent from this region also.

iii) High Subarctic Tundra - Kingurutik/Fraser

The George River Plateau makes up the main (northern) portion of this ecoregion. Various mountainous outliers, including the Benedict Mountains, Wine River Mountains, Mealy Mountains, and the McPhadyen Plateau also belong to this region. Summers are short and cool, with a growing season of 80 to 120 days; winters are long, severe, and very cold. The upland vegetation is similar to the Low Arctic Tundra - Torngat ecoregion; however, the valleys support tree growth. Closed black spruce forests (with some larch) occur on lower valley slopes. River terraces support open spruce forests with a lichen dominated understory. Shallow fens with frozen peat occupy small depressions in plateau surfaces.

iv) Coastal Barrens - Okak/Battle Harbour

This ecoregion extends from Napaktok Bay south to the Strait of Belle Isle. Much of the coast is characterized by long, sheltered inlets. The summers are cool to warm and the growing season is 100 to 120 days. The winters are cold. Empetrum barren is the dominate vegetation type, with forest occurring in sheltered valleys. Most mid and lower slopes support a continuous spruce forest with a moss understory. Repeated fires have changed many forested areas to dwarf shrub barrens. Plateau bogs with frozen peat (palsas) and salt marshes on marine terraces are characteristic of the valleys in this ecoregion.

v) Mid Subarctic Forest - Michikamau

This ecoregion encompasses the upland plateaus of central and western Labrador. Eskers and drumlin ridges are characteristic. This region has a very continental, subarctic climate with cool, short summers and long, severe, cold winters. The growing season is 100 to 120 days. Black

spruce is the dominant trees species, except in the most northern areas, where white spruce dominates. Trembling aspen reaches its northern limit here and the only native population of jack pine occurs in this ecoregion. Open lichen woodlands are characteristic of this ecoregion. Extensive ribbed fen-string bog complexes, bordered by black spruce-sphagnum forest stands, dominate areas with little relief.

vi) High Boreal Forest - Lake Melville

This ecoregion encompasses the Churchill River Valley and the coastal plain surrounding Lake Melville. River terraces are composed of coarse-textured, alluvial soils, and uplands have shallow, well-drained soils. This region has the most favourable climate in Labrador. Summers are cool and winters cold. The growing season is 120 to 140 days. The forests are closed-canopied and highly productive. Richer slopes are dominated by balsam fir, white birch, and trembling aspen. Black spruce is present in most stands, but only dominates in upland areas and lichen woodlands, which occupy river terraces. Ribbed fens occur in upland depressions; plateau bogs occur on coastal plains.

vii) Mid Boreal Forest - Paradise River

This undulating, bedrock controlled landscape of southeastern Labrador has many rock outcrops and supports fairly productive, closed-crown forests. The climate is considered boreal and is moister and cooler than the Lake Melville area. Summers are cool to warm and winters are short and cold. The growing season is 120 to 140 days. Black spruce and balsam fir are the most common tree species, but hardwoods are commonly encountered. Raised bogs are characteristic of valleys in the area.

viii) Low Subarctic Forest - Mecatina River

The main portion of this ecoregion is located in southern Labrador, with two separate areas to the north of Lake Melville and the Red Wine Mountains. Broad river valleys and rolling hills covered by shallow till, drumlins, and eskers are characteristic of the region. Summers are cool and winters are long. The growing season is 120 to 140 days. Somewhat open black spruce forests are the dominant vegetation, with crown densities greater than 75% on better sites. String bog-ribbed fen complexes cover extensive areas throughout the region.

ix) String Bog - Eagle River Plateau

The Eagle River Plateau comprises most of this ecoregion. This upland plateau is composed of extensive string bogs with numerous open pools surrounded by fen vegetation. Bog hummocks are dominated by scrub spruce, Labrador tea, and feathermoss. The peatland expanses are occasionally interrupted by only a few conspicuous eskers, which support open, lichen woodland. Alder thickets are common along river banks.

x) Forteau Barrens

This ecoregion is located at the southeasternmost tip of Labrador, adjacent to the Strait of Belle Isle. Low hills are covered with scrub spruce, crowberry barren, and slope bogs. Strong winds and frequent storms occur because of the ecoregion's proximity to the Strait of Belle Isle. The

growing season is 100 to 120 days. Tree growth is limited by a combination of wind, wet soils, and a history of repeated burns. Black spruce and larch can reach 10 to 12m only along rivers, where soils are better drained.