

**PASQUIA/PORCUPINE
INTEGRATED FOREST LAND USE PLAN
BACKGROUND**

June 1998

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BACKGROUND FOR PLAN DEVELOPMENT

Chapter 1 INTRODUCTION

The Land Use Plan covers the Pasquia Hills, the Porcupine Hills and part of the Cumberland area (see Figure 1-1). The plan applies only to Crown lands within the planning area, not to privately owned lands or Indian reserves within the planning boundaries.

This area was selected because it is the area under negotiation for a Forest Management Agreement (FMA). The FMA is a contract between the provincial government and Saskfor MacMillan Limited Partnership, for the rights to harvest and manage timber in the area. Because industrial timber harvesting operations will have a major effect on all resource uses in the area, Saskatchewan Environment and Resource Management (SERM) decided that a Land Use Plan coordinating all land and resource uses was necessary, to guide the development of the industrial forest management plan.

The planning area accommodates a wide variety of resource and land-based uses such as roads, trails, power lines, railroads, cabins, recreation sites, water control structures, etc. The plan is based on the principles of Integrated Resource Management (IRM). This means that planning decisions are made looking at the health of the whole ecosystem, including soil, water, plants and animals, to meet a variety of objectives. IRM allows for a broad range of resource uses, and gives all affected parties the opportunity to be informed and involved in management planning.

The Integrated Forest Land Use Plan will provide a framework for resource management and use in the planning area. The plan will also provide direction throughout plan implementation for such things as recommendations for public involvement; options for resolving conflict among resource users; and strategies for monitoring and evaluating plan effectiveness and revising the plan.

In addition to the land use plan, there are a number of other processes that currently affect land management planning in the Pasquia/Porcupine area. Figure 1-2 depicts the relationships that exist between the various processes connected with the planning area.

PLANNING AREA

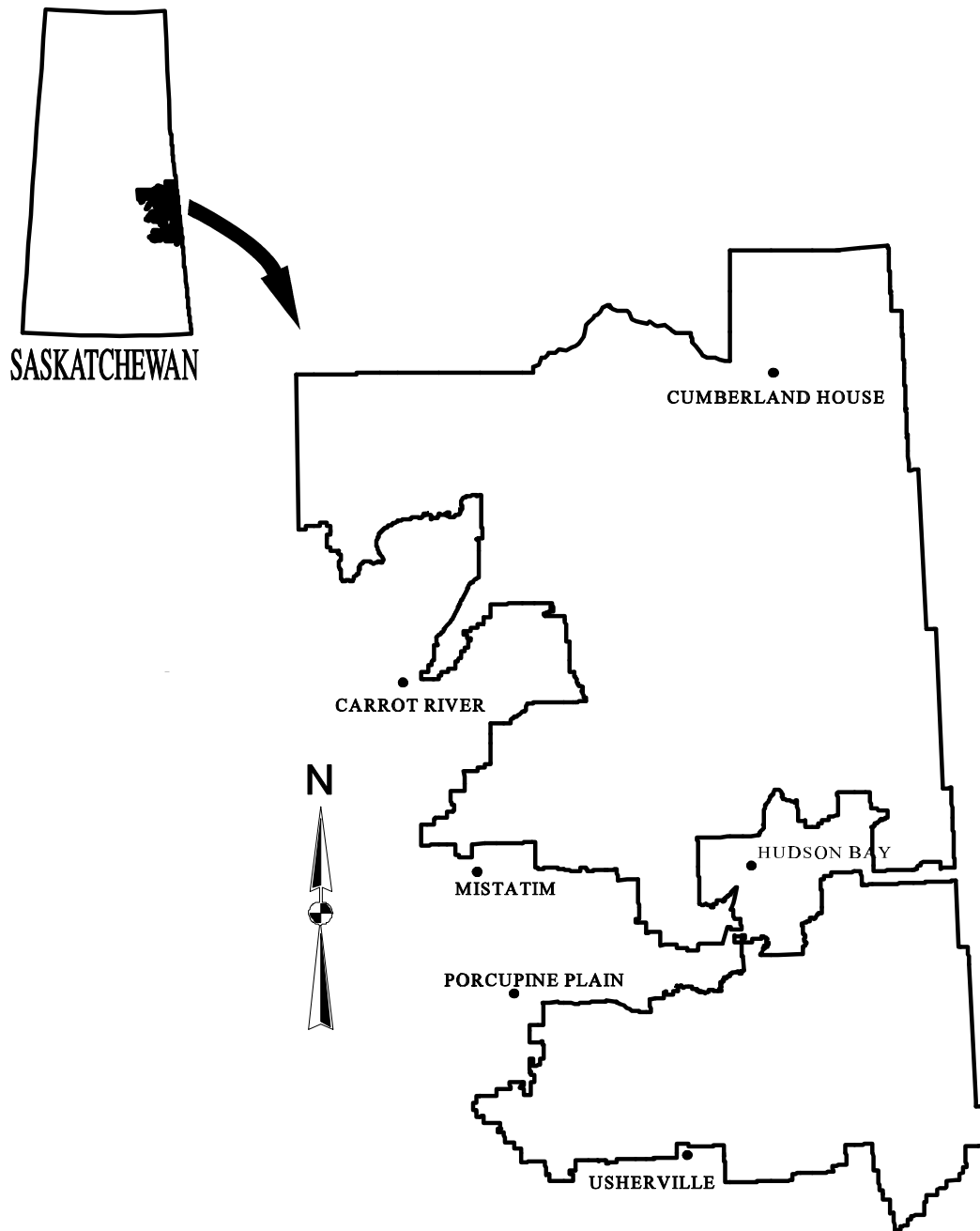


Figure 1-1

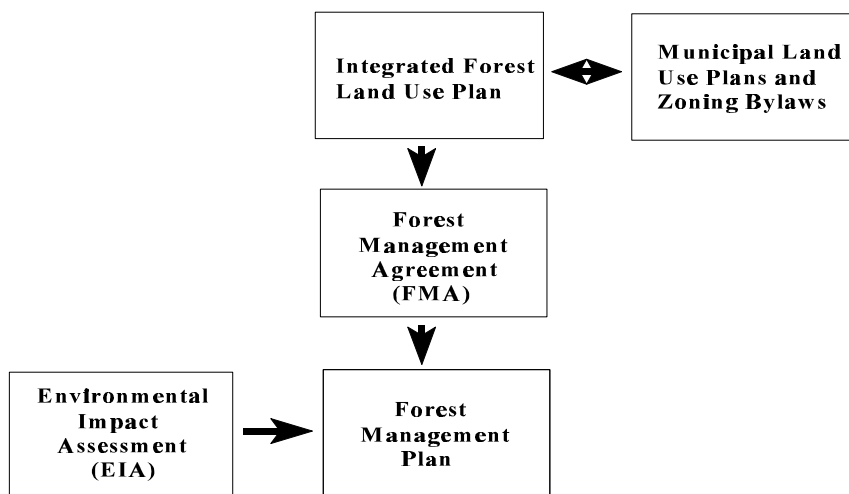


Figure 1-2. Existing and proposed processes for land management and development activities in the Pasquia/Porcupine land use planning area.

W

hile all of these processes cooperate with each other and maintain an awareness of one another's activities, the Land Use Plan, in conjunction with existing municipal bylaws, provides the umbrella for land management in the area.

The Forest Management Agreement (FMA), which is being negotiated by SERM and Saskfor MacMillan, will include terms that will allow Saskfor MacMillan to harvest and manage timber in the planning area. For example, the Land Use Plan will identify areas where timber harvesting will and will not be allowed, and this will affect the harvest levels that will be specified in the FMA.

One of the prerequisites of the FMA will be the development of a **twenty-year forest management plan** by Saskfor MacMillan. The management plan will outline harvesting and forest renewal plans for the areas that Saskfor MacMillan has access to under the terms of the FMA. The Land Use Plan will provide direction for the twenty-year plan. For example, the Land Use Plan will identify actions that industry will have to take as part of the twenty-year plan, such as adapting harvesting methods in different areas to accommodate other resource users and ensuring that the forest ecosystem remains healthy.

In order to protect the forest ecosystem, the 20 year forest management plan will be subject to

an **Environmental Impact Assessment** (EIA). The EIA will identify the potential impacts of forestry development on the environment, that Saskfor MacMillan will be required to address.

1.1 The Planning Process

Step One - Plan Initiation

In April 1995, a decision was made to prepare an integrated land and resource management plan for the Pasquia/Porcupine area. Since then, a multi-disciplinary planning team has been formed, with representatives of resource management branches of SERM, and representatives from the other government departments of Agriculture and Food, Tourism Saskatchewan, Energy and Mines, Highways and Transportation, Municipal Government, Sask Water Corporation, Office of Northern Affairs and Canadian Wildlife Service, Environment Canada.

Step Two - Information and Issue Gathering, and Goal Setting

Initially, the planning team gathered as much information as possible about the area's resources, and their existing and potential uses. Additional information was gathered at a series of introductory public meetings, held in September and October of 1995.

Goals, principles and objectives for the plan, and an initial list of issues were drafted. Additional issues were raised by the public at the introductory meetings and subsequent meetings held in March and April of 1996. Issues were also raised by the Forest Management Advisory Committee (FMAC). The FMAC, made up of representatives of various stakeholder and aboriginal groups in the area, was formed to provide advice on the negotiation of the Forest Management Agreement and input to the Land Use Plan.

Step Three - Meetings with the FMAC

The Pasquia/Porcupine Forest Management Advisory Committee (FMAC) was appointed by the Minister of SERM to provide advice about the development of the Integrated Land and Resource Management Plan (the FMAC also provided advice for the FMA negotiations). The FMAC consisted of representatives from local communities, interest groups, small operators, industry and Metis and First Nations communities.

The planning team met several times with the FMAC, to discuss and develop potential solutions for issues. Consensus items developed by the FMAC are in Appendix 2.

Step Four - Draft Plan Preparation

The draft plan was developed using gathered information, the plan goal, principles and objectives, identified issues, and potential solutions developed by the planning team and the FMAC.

Areas of existing and proposed restricted resource use were delineated on a map.

Land use strategies were developed and organized in broad categories: Forest Ecosystem Health, Resource Use Sectors, and Economic and Community Health.

Implementation strategies were developed: a Monitoring, Evaluation and Plan Revision Strategy; a Public Involvement Strategy; and a Dispute Resolution Strategy.

Each strategy contains related issues and recommended actions for each issue. Direction is given in different ways:

- < government-directed policies, which set out the procedures that will be followed in certain situations, for example, in allocating the use of a particular resource;
- < processes which resource users need to follow in particular circumstances, such as if a resource user wishes to operate in an area where there are other resource users.

Step Five - Draft Plan Review

The draft plan was presented to government agencies, the FMAC and the general public for review and to receive recommendations for revisions. Public meetings for plan review were held in January, February and March, 1998. (see Appendix 10 for a summary of public comments).

Step Six - Plan Revision and Approval

Based on the comments received during the review process, amendments were made to the draft plan. The revised plan requires submission to the Government of Saskatchewan for final government approval.

Step Seven - Plan Implementation

Implementation of the plan will be the final step in the planning process. During implementation, revisions and amendments based on experience will be made regularly.

1.2 Public Involvement in the Land Use Planning Process

The Planning Team recognized that the public have perspectives, knowledge and values that are relevant to land use planning. Every reasonable effort was made to involve the public as early as possible and throughout the planning process.

Various approaches were used to involve the public.

1.2.1 Opportunities for Public Input

Three rounds of public meetings were carried out in the fall of 1995, the spring of 1996, and the winter of 1998 to explain the land use planning process, identify goals, principles, issues and concerns, and gather local knowledge (see Appendix 10 for summaries of public input). The 1995 public meetings also presented information on FMA negotiations and the environmental review process. The 1998 meetings presented the Draft plan to the public for their review and comments, prior to finalization of the plan.

Newsletters, newspapers and radio advertisements were used to invite the general public to attend the public meetings and to ensure that all interested parties were aware of the intent to develop and review an integrated land use plan. Each newsletter was distributed widely in communities throughout the planning area and beyond. Response forms and questionnaires were provided for people to provide their thoughts and opinions on the planning process and land use issues.

1.2.2 Forest Management Advisory Committee

Over 35 months, the Committee met 23 times (11 FMA meetings and 12 land use plan meetings). During the last 27 months, the committee discussed the land use plan. An overview of the work completed includes:

- Terms of Reference that guide the Committee's discussions including clearly defined goals, objectives and operating rules for the process;
- Understanding of consensus-decision making;
- Recommendations for broader public involvement processes;
- Development of a process for issue identification, discussion and analysis (based on issues identified by the Planning Team, the general public and the FMAC);
- Establishment of sub-committees (Representative Areas, Ecotourism) to assist in working on specific details on some issues;

- Provision of recommendations for issue resolution; and
- Review of the draft land use plan.

1.2.3 Aboriginal Participation

The Planning team recognized that lands within the planning area have special significance to Aboriginal peoples. They further recognized that the legal status of Aboriginal peoples is unique, that Aboriginal and Treaty Rights are protected, and that the Aboriginal peoples possess special knowledge and insights concerning sustainable land management derived from traditional practices and experience. Aboriginal forest users and communities thus required particular consideration in the public participation process.

In addition to opportunities for Aboriginal participation on the FMAC, special meetings were arranged with Aboriginal communities for information gathering and exchange.

Chapter 2

CHARACTERISTICS OF THE AREA'S LAND

2.1 Forest Ecology

The Pasquia/Porcupine Planning Area covers about 20,000 square kilometers, and falls within three ecoregions: 1) Mid Boreal Lowlands, 2) Mid Boreal Uplands, and 3) Boreal Transition (Figure 2-1).

The **Mid Boreal Lowland Ecoregion** is a relatively flat, low-lying ecoregion dominated by wetlands. Landscape areas in the planning area include Mossy River Plain, Namew Lake Upland, Saskatchewan Delta, and Overflowing River Lowland. The area is characterized by medium to tall closed stands of trembling aspen and balsam poplar, with white spruce, black spruce and balsam fir increasing in dominance in older stands. Stands of ostrich fern grow on some wetter marshy spots in these rich forest sites. Poorly drained depressions are dominated by stunted black spruce with peat moss, dwarf birch, Labrador tea and sedges. Local populations of American elm, Manitoba maple and Green ash occur on flood plain sites of the southern Cumberland Delta, Red Deer River Valley, and other stream valleys draining eastward from the Pasquia Hills at lower elevations.

The **Mid Boreal Upland Ecoregion** covers a rolling glacial plain interrupted by prominent uplands and numerous lakes. Landscape areas include Pasquia Escarpment, Pasquia Plateau, and Porcupine Hills. Hardwood stands with trembling aspen, balsam poplar and white birch, and mixedwood stands where hardwoods are mixed with white spruce, black spruce and balsam fir, occur on finer soils. Jack pine is dominant on sandy soils, and black spruce on wet sites.

A diverse vegetative understorey occurs in these deciduous, coniferous and mixedwood stands. Common herbs include bunchberry, twinflower, sarsaparilla, bishop's-cap and dewberry. Wet and moist bogs, marshes and fens support a different variety of understorey plants, including those which only occur in the east-central part of the province, such as sweet or northern white violet, and marsh St. John's-wort. Some shrub species such as bush honeysuckle, mountain maple and red elderberry are quite concentrated and frequent in the planning area, but occur as a native rarity to the north and northwest of the planning area.

The **Boreal Transition Ecoregion** occurs along the southern edge of the boreal forest. Portions of landscape areas included in the planning area are Tobin Lake Lowland, Red Earth Plain, Mistatim Upland, Hudson Bay Plain and Swan River Plain. Most of the natural forest is dominated by trembling aspen, although white spruce occurs locally on moist sites, and jack pine on sand. Understorey plants are similar to those in other ecoregions, although grasses such as wheatgrass and wild rye are more common. Part of this ecoregion has been cleared

ECOREGIONS

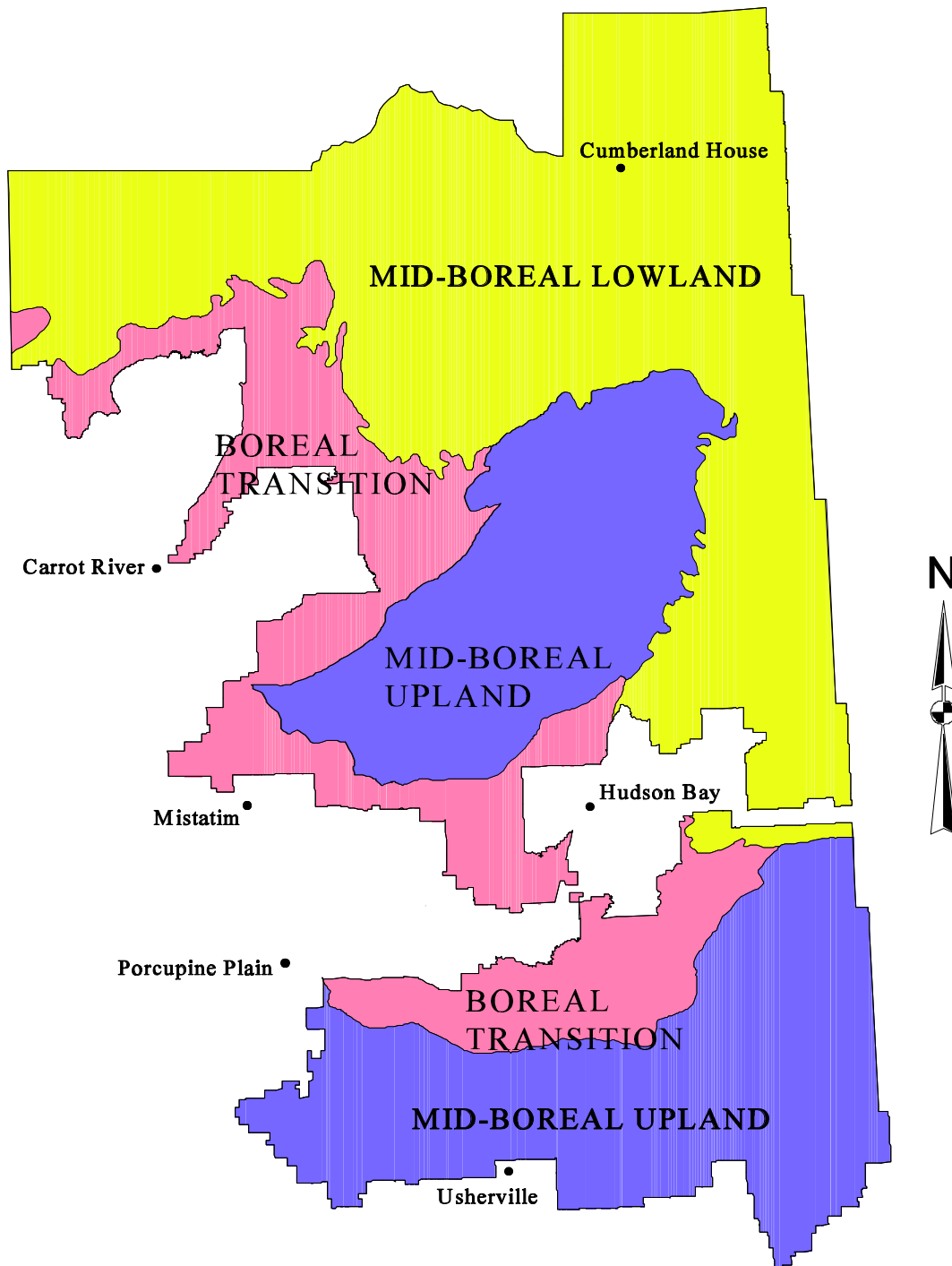


Figure 2-1

for agriculture, leaving forest in patches of various sizes. This region is traditionally referred to as “forest fringe”. A little more than half of the planning area is forested. The non-forested lands primarily consist of water and wetlands. The locations and areas of forest cover types are found on Figure 2-2.

Under natural conditions, fires caused by lightning are the dominant disturbance in the boreal forest. Most boreal tree species have adapted to this natural disturbance, and some species depend on fire for renewal. Jack pine store seeds in serotinous cones that open under the high heat of fire, often resulting in high density seedling establishment. Boreal hardwoods such as trembling aspen, balsam poplar and white birch regenerate after fire by sprouting from surviving roots. White spruce regenerates after fire by seed dispersal from adjoining stands. Understorey plants have also adapted to recover, even after a high intensity fire.

Before forest harvesting and fire protection, forest landscape patterns were created by fires, and varied depending on size, number and frequency of burns. Studies of past fire distribution have shown that, with no fire suppression, an area of forest probably burned every 50 to 100 years. However, fire frequency varied depending on fuel and moisture conditions. Conifer stands on dry, coarse-textured soils burn more frequently than hardwood stands or stands on wet soils.

Large fires that have occurred in the Pasquia/Porcupine planning area include fires along the Red Deer River in the 1940s, the Jim Fire in 1961, and the Woody Fire in 1980.

Because Saskatchewan forests are largely of fire origin, vast tracts are a single age, but since fires usually are quite patchy, there is usually considerable variety of forest age-class present in any landscape. The age structure constantly changes. As each year passes, most of the forest will grow older under a fire suppression regime. However, a portion of the forest will be subject to harvesting, wildfire or other natural disturbance, which will cause it to be returned to the youngest age class.

Another important natural disturbance is insects and disease. Timber losses to these factors are usually less than to fire but recent outbreaks of spruce budworm in the planning area indicate significant impacts from this insect.

2.2 Vegetation

Large areas within the planning area are considered significant because of the natural character of the vegetation, the diversity of species and vegetation types, and the presence of rare plants. Almost 400 species of plants have been recorded in the planning area.

FOREST COVER IN THE PLANNING AREA

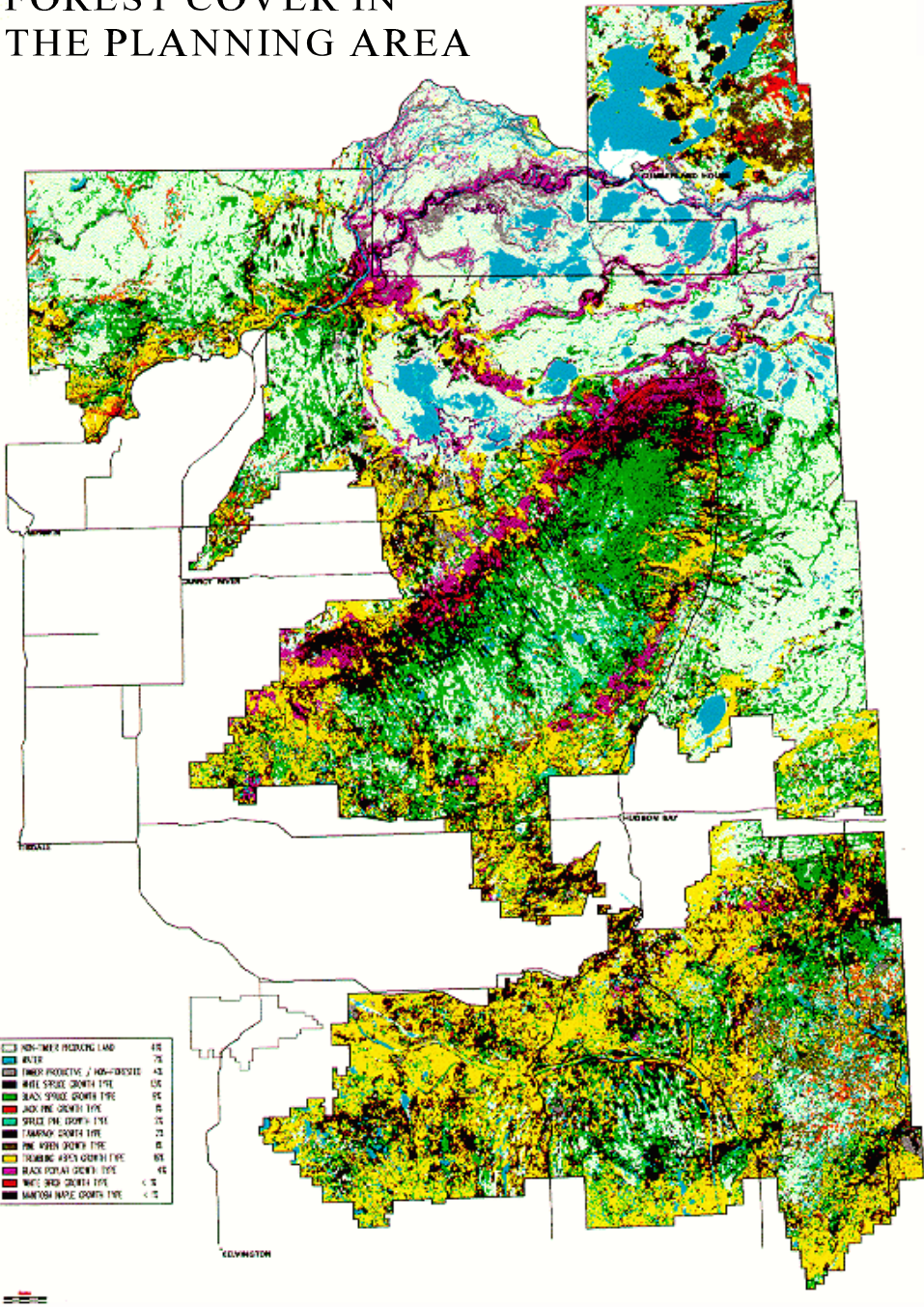


Figure 2-2

In the Pasquia Hills, there are 36 species of rare Saskatchewan plants, including several eastern species as well as some sub-arctic and western species.

Two readily accessible sites, the Mountain Cabin Campsite and the Greenbush Campsite are noted for their profusion of wild flowers. Several other sites are equally notable but not as readily accessible. At Brockelbank Hill in the Porcupine Forest, 29 species of rare plants have been recorded.

2.3 Wildlife

2.3.1 Big Game

The Planning Area is home to five species of big game: moose, elk, white-tailed deer, black bear and woodland caribou. Mule deer are found in some locations, but populations are very small. Sightings of cougar are made every year in the planning area, usually along the west side of the Pasquia Hills.

Moose

The planning area has the highest moose population in Saskatchewan, due to good habitat. The moose is the largest member of the deer family, and produces the largest antlers of any animal. The average shoulder height of a moose is 190 centimetres (cm); the average weight is 420 kilograms (kg). Moose have relatively poor eyesight, but very sensitive nose and ears, and long legs allowing them to travel in bogs and deep snow.

The most productive moose habitat is early successional forest, following timber harvest or fires, where there are good quantities of browse. During fall and winter, an adult moose can consume 22 kg of browse daily. New aquatic vegetation is used extensively during the summer, if available.

During periods of extreme cold and windy weather moose will use dense cover, especially conifer tree stands as shelter.

As a result of low Provincial moose populations the hunting season remained closed from 1946 to 1953. However, as moose populations increased across the Province a regular either-sex hunting season was implemented in 1954. This management system remained in effect until another population decline occurred in the early 1970s resulting in a restricted draw season.

Because of the high demand for moose and an expected increase in the demand by hunters, a program in 1977 was developed to protect the breeding females and allow Saskatchewan moose hunters to continue to hunt bulls and calves only, while a select few cows could be hunted during the draw seasons.

In the late 1960s and early 1970s the Cumberland area had the highest densities of moose in Saskatchewan. Levels began to drop about 1973, stabilized in the early 1980s, then suffered a drastic decline from 1987 to the present. This is due to hunting pressure, to low calf survival due to predation from black bears, and to changing vegetation patterns (less browse) caused by less frequent flooding because of dams. The most serious health problem in winter is the tick, which can cause mortality if the infection is severe; calves are much more susceptible than adults. Major predators of moose are wolves, particularly in winters with deep snow. Black bear is a significant predator of moose calves in spring and early summer.

From studies conducted in central Saskatchewan in the early 1980's by SERM, forest road access was determined to have a significant negative impact on moose populations by allowing road vehicle hunters to traverse vast areas of moose range. Areas hunted intensively throughout the year quickly became void of moose. Mitigation measures such as the closure of abandoned forest roads and hunting closures using game preserves proved to be effective in restoring depleted populations of moose.

Recent court decisions, which increased the number of people legally considered to have aboriginal hunting rights, expanded the number of hunters both from within and outside the Province that could hunt year long. The impact of this expanded hunting opportunity in the planning area is difficult to assess, but the numbers of hunters afield and animals harvested was noticeably higher.

Elk

Elk is the second largest member of the deer family, with a shoulder height of 140 cm and an average weight of 225 kg. Due to the combination of protective management, ideal habitat conditions created by large scale forest harvesting activities since the early 1960's, relatively mild recent winters, high herd productivity and good foraging opportunities, elk are more abundant in Saskatchewan than they have been since the mid to late 1880's. Elk are in very high demand for both consumptive and non-consumptive uses.

Elk are the least specialized feeders of the deer family. They consume large quantities of browse throughout the winter, and grass, sedges and forbs in the summer. In the planning area, the large agriculture-forest interface has been a critical factor in elk management. Growing elk numbers have resulted in significantly more damage to agricultural crops and haystacks. Within the past five years, poor farmland crop harvesting conditions have resulted in cereal and forage crops left afield over winter. Forest fringe elk have monopolized on the readily available forage in the farmland and have aggravated landowners further.

Winter is a critical season for elk when deep snow and cold weather can contribute to increased mortality. Predation by wolves and bears can be a population limiting factor and it is suspected that in the Cumberland Delta where elk population have declined

along with the moose, predation is suspected to be major contributing factor.

Elk prefer riparian areas, large mixed-wood and deciduous cutovers, burned areas, open grass/willow meadows and fragmented forested habitat. Studies have shown that thermal cover is important to elk and their preference is for mature spruce and aspen stands.

White-tailed deer

The white-tailed deer is the most widely distributed and most numerous of all the big game animals. The planning area marks the northern extent of their range in eastern Saskatchewan.

White-tailed deer are much smaller than moose or elk, with a shoulder height of 120 cm, and a weight of about 115 kg. In winter, they rely exclusively on browse, and switch a portion of their diet to forbs in the spring and summer. Like elk, deer enjoy foraging in the farmlands but retreat to the forest for cover.

Hard winters can result in drastic population declines for deer. Since they are a relatively small animal, snow depths of as little as 40 cm can restrict their movement. As well, deer are in a negative energy balance in winter, as they cannot find enough food, so must rely on their fat reserves to provide energy. If this reserve becomes seriously depleted as a result of a long winter, or because deep snow requires the expenditure of more energy, deer starve to death.

There is good evidence from historical anecdotal accounts that white-tailed deer were practically non-existent in the planning area, while mule deer were quite common. Since mid-century white-tailed deer have increased along with agricultural development and with large scale forest harvesting.

Severe winters have been the primary limiting factor and deer populations have fluctuated accordingly. Deer recovery occurs much more quickly than moose and elk since twins and triplets are not uncommon in deer reproduction.

Maintaining good white-tailed deer numbers depends on sustaining a good mosaic of forest from mature to young successional forest for cover and food.

Mule Deer

Before European settlement of the planning area, mule deer were the only species of deer inhabiting the area. With settlement of the planning area, white tailed deer moved in, replacing the mule deer. Today mule deer are found in very small isolated populations. The reasons for this are unknown.

Woodland caribou

Woodland caribou is the only member of the deer family in which the females develop

small antlers. The average size of a male is about 180 cm long, 110 cm high at the shoulders, with a weight of about 230 kg. Females are about two-thirds the size of males.

vulnerable (see Table 2-1). At one time, caribou inhabited much of the planning area, as far south as the Greenwater area. Caribou habitat is coniferous forest and open muskegs. Currently, caribou have been seen in the Woody Hills southeast of Hudson Bay, the Leaf Lake area, the Pasquia Hills, and in the Cumberland Delta. Reasons for population declines are not well understood, but are probably related to changes in habitat caused by timber harvesting and fire. This has resulted in early succession forest, which is more productive habitat for moose and deer

Black bear

The black bear, found throughout the planning area, is the smallest North American bear. Mature bears weigh between 90 and 215 kg, are 90 cm high at the shoulder, and are about 190 cm long. Their colour can range from black, through cinnamon, to blond, with litters usually having a range of colours.

Black bears are omnivorous, eating both meat and vegetation. Common foods include berries, all types of vegetation, carrion, birds and mammals. Bears eat white-tailed deer, and can be a significant predator of moose and elk calves.

During winter, bears sleep. To store the fat reserves necessary for this hibernation, bears consume large quantities of food during the fall. The berry crop is critical to ensuring over-wintering survival.

Cougar

Cougars are solitary animals that are probably dependant on the availability of game and cover needed for a secretive lifestyle. The number of cougars in the planning area has never been high, but because the number of sightings remains relatively the same each year (about five), the population is believed to be stable. The majority of cougar sightings have been along the west side of the Pasquia Hills. There is a demand to maintain the existing population by the general public who wish to see the biodiversity maintained or enhanced.

2.3.2 Small Mammals

The planning area supports a large population of a variety of small mammals including mice, squirrels, and porcupine. These animals are key in the functioning of a healthy ecosystem.

2.3.3 Birds

The planning area, part of the western Canadian boreal mixedwood forest, supports a large variety of bird species, both year round resident and migratory. Records indicate that more than 300 species have been seen. Breeding Bird Survey information shows that the Hudson Bay area has supported the second highest number of known breeding birds species (167) recorded for the province. The McBride Lake and Weekes areas also rated highly (150 and 148, respectively). As many as 40 species stay year round.

Types of birds include ducks, geese, swans and other waterbirds, shorebirds, owls, hawks, eagles, sparrows, warblers and numerous other upland birds. Many unusual species have been recorded, including: chimney swift, great, snowy and cattle egrets, wood duck, American black duck, hooded merganser, turkey vulture, the golden-winged warbler (one of several recorded birds normally not found in Saskatchewan), scarlet tanager, nine woodpecker species, 26 warblers and 4 COSEWIC (Committee on the Status of Endangered Wildlife in Canada) species classified as either endangered, threatened or vulnerable (see Table 2-1).

Table 2-1: COSEWIC Bird Species of the Pasquia/Porcupine Area

| Species | Comments |
|------------------|---|
| Peregrine Falcon | Irregular transient of fields, meadows, lakes and rivers. |
| Ferruginous Hawk | Irregular summer visitor of the open prairies. |
| Whooping Crane | Irregular transient, last reported 1976. |
| Caspian Tern | Irregular spring to fall visitor of lakes and ponds. |

The brown-headed cowbird is also found here. Its habit of laying eggs in the nests of other birds (known as brood parasitism), which in turn reduces the reproductive success of the host birds, means that its presence has important land management implications. Any type of forest clearing could give the cowbird access to the nests of bird species along forest edges.

The high number of bird species reflects the area's exceptional habitat diversity and quality. The presence of plant communities dominated by trees more typical of eastern and central Canada such as American elm and mountain ash, adds to the diversity of wildlife habitats and species.

The area contains several lakes considered by Environment Canada to be of national (Kennedy, Bourassa, Leaf Lakes), regional (Egg, McGregor, Red Earth Lakes) or local (Bewley, Big, Bloodsucker, Meadow Lakes) importance for breeding and staging ducks, geese and other birds. Wapisew Lake is important for the American white

pelican, and for other non-breeding colonial waterbirds.

Before the turn of the century, the trumpeter swan nested in many Saskatchewan areas, but came close to extinction during the fur trade and early settlement. The Porcupine Forest is the most important breeding area in Saskatchewan for trumpeter swans. In the last 10 years, trumpeter swans have been sighted in the Porcupine Hills. Lakes and beaver ponds and associated aquatic vegetation provide ideal habitat for the swans. Today, the critical factor limiting trumpeter swan population is the lack of winter habitat in north western United States where areas are over crowded resulting in starvation during harsh winters.

2.3.4 Amphibians

Amphibians are cold-blooded vertebrates with extreme environmental limitations, as they must find protection from freezing winter conditions. Amphibians lay eggs in the water during the spring and summer, which hatch into aquatic gill breathing larvae, which later metamorphose into lung breathing adult forms. During the winter, amphibians hibernate below the frost line.

The range maps for amphibians show that five species could exist in the planning area: tiger salamander (only in the southern part); boreal chorus frog; leopard frog; wood frog; and Canada toad.

2.3.5 Reptiles

Reptiles are cold blooded animals that must find protection from freezing conditions. Reptiles lay shelled eggs on land, or give birth to living young, which resemble the adults. During winter, reptiles hibernate below the frost line.

Range maps for reptiles show that four species of reptiles could be found in the planning area: western plains garter snake; red-sided garter snake; painted turtle (in the south east corner of the planning area); and snapping turtle.

2.3.6 Fish

The seven major drainage basins of the planning area (Saskatchewan River, Carrot River, Pasquia River, Overflowing River, Upper Red Deer River, Red Deer-Armit River, and Swan River) are made up of hundreds of streams and tributaries. A relatively small number support year-round fish populations.

Northern pike, walleye and yellow perch are three native species of large fish found in the lakes and large streams of the Pasquia/Porcupine drainages. Smaller streams provide habitat for a variety of minnow species and other non-game fish. An additional 10 species are found in Cumberland Lake and Saskatchewan River Delta. These

species include goldeye, whitefish, sauger, and sturgeon which are important to the commercial fishery.

Naturalized populations of brook trout now inhabit many of the upper reaches and smaller tributaries of the Armit, Red Deer, Pasquia, Overflowing, and Swan Rivers. Waters in these drainage areas were first stocked in the 1950s and in the case of the Fir River, as early as the 1930s. Supplemental fish stocking is still used to help maintain the trout fisheries on the Fir and Swan Rivers.

Lakes which provide significant angling opportunities for native species in the planning area are concentrated in the Porcupine Hills. Eldridge, McBride, Pepaw, Parr Hill, and Saginas Lakes are located along the McBride Lake and Little Swan Roads. Another complex of lakes (Elbow, Isbister, Smallfish, Spirit, Townsend, and Woody) are found along the Woody Lake Road. To enhance the sport fishery, walleye fry are stocked to supplement natural populations in Saginas and Townsend Lakes. Natural populations in McBride Lake are also enhanced by stocking walleye fry into Swallow Lake Rearing Pond, allowing them to grow to fingerling size, and then draining the pond and fish into the lake.

In the Pasquia Hills, the Helldiver-Culdesac Lake complex supports a seasonal sport fishery for pike and walleye which migrate up the Carrot River, from the Saskatchewan River in Manitoba.

Stocks of pike and walleye in the Red Deer River appear to have been depleted over the past fifteen year, probably because of overfishing in Red Deer Lake in Manitoba, and by local fishing pressure.

Minnow and non-game fish species found in the planning area include the following: blacknose dace, blacknose shiner, brook stickleback, burbot, common shiner, cisco, creek chub, emerald shiner, fathead minnow, golden shiner, Iowa darter, johnny darter, logperch, longnose dace, longnose sucker, northern shorthead redhorse, ninespine stickleback, pearl dace, sand shiner, slimy sculpin, spottail shiner, spoonhead sculpin, trout-perch, and white sucker.

The following species which have limited distribution in Saskatchewan are found in Cumberland Lake and Saskatchewan River Delta: flathead chub, goldeye, mooneye, quillback, river shiner, sauger, silver redhorse, and sturgeon. In addition, there has been at least one report each of common carp and central mudminnow being caught in the area.

2.4 Parks

The Parks program in Saskatchewan has a two-fold mandate: to establish areas for outdoor recreation and education purposes; and to protect representative areas which are typical of

Saskatchewan's natural and cultural landscapes.

In 1990 SERM announced its Parks System Plan. In addition to suggesting where additional parks or recreation sites were needed to meet outdoor recreation needs, it proposed creation of parks required for representation of the province's landscapes. Within the Pasquia/Porcupine planning area it recommended the following:

Cexpansion of Waskwei River Protected Area (accomplished 1992);

Cexpansion and designation of Wildcat Hill Protected Area as a Provincial Wilderness Park (accomplished 1992);

Ccreation of Rice River Valley Protected Area (a proposal for a 7,100 ha area on the north side of the Pasquia Hills was presented to the Sipanok Co-management Board in 1994 for consideration);

Ccreation of Lobstick Lake Protected Area to represent the Cumberland Lowlands characterized by the Saskatchewan River delta and associated flora and fauna.

The map of Ecoregions of Saskatchewan will be used to further develop a network of representative areas (see Section 4.6), taking the concepts developed in the Parks System Plan and applying them within the planning area. As well, unique and sensitive special areas, areas of cultural significance and areas with high recreation value which require special management could be proposed for designation either under *The Parks Act* or other legislation.

Table 2-2 lists areas within the Pasquia/Porcupine planning area which are presently designated under *The Parks Act*. Many of the recreation sites were officially designated in 1986, after years of existence as lake and river access points and highway rest stops or picnic sites.

Table 2-2: Areas Designated Under *The Parks Act*

| Area | Size (ha) | Location | Year Designated |
|---|-----------|--|--|
| Wildcat Hill Provincial Wilderness Park | 22,161.1 | - Pasquia Hills | Protected Area created in 1971, expanded in 1992 |
| Waskwei River Recreation Site | 6 | - along Hwy 9, within the Waskwei River Protected Area | 1986 |
| Waskwei River Protected Area | 1,158.9 | - Pasquia Hills | - created in 1964, expanded in 1992 |
| Pasquia River Recreation Site | 4.5 | - along Hwy 9 | 1986 |
| Overflowing River Recreation Site | 14.7 | - along Hwy 9 | 1986 |
| Ruby Lake Recreation Site | 31.5 | - 8 km north of Hudson Bay | 1977 |

| Area | Size (ha) | Location | Year Designated |
|-------------------------------------|-----------|---|--|
| Pasquia Hills North Recreation Site | 141.2 | - along Hwy 55 | 1986 |
| Mountain Cabin Recreation Site | 10.4 | - along Hwy 9, north edge of the Pasquia Hills overlooking the Cumberland Lowlands | 1986 |
| Cul-de-sac Lake Recreation Site | 109.4 | - along Hwy 9 near the Manitoba border | 1986 |
| Fir River Road Recreation Site | 160.3 | - south of Wildcat Hill | 1986 |
| Greenbush River Recreation Site | 8.8 | - along Hwy 3, west of Hudson Bay | 1978 |
| Armit River Recreation Site | 60 | - along Hwy 3 at the Manitoba border | 1986 |
| Brockelbank Hill Protected Area | 1,312.6 | - in the Porcupine Hills | 1992 |
| Woody River Recreation Site | 2,783.2 | - at 4 lake-oriented facilities: Townsend/Elbow Lakes, Small Fish Lake, Spirit Lake and Isbister Lake | 1986 |
| Dagg Creek Recreation Site | 12.8 | - along Hwy 8 south of Hudson Bay | 1978 |
| McBride Lake Recreation Site | 70.9 | - in the Porcupine Hills | 1978 |
| Saginas Lake Recreation Site | 22.3 | - along Hwy 982 | 1986 |
| Parr Hill Lake Recreation Site | 159.4 | - Porcupine Hills | - designated in 1986, expanded in 1993 |
| Pepaw Lake Recreation Site | 20 | - along Hwy 982 | 1978 |
| Piwei River Recreation Site | 4.6 | - south of Somme | 1986 |
| Round Lake Recreation Site | 928.9 | - south of Greenwater Lake Provincial Park | 1978 |
| Greenwater Lake Provincial Park | 20,720 | - outside the western edge of the planning area | 1932 |
| Hudson Bay Regional Park | | - facilities at several locations | 1969 |

2.5 Geology

Bedrock in the Pasquia/Porcupine Planning Area consists of Palaeozoic carbonate rocks overlaying subsurface rocks of the Precambrian Shield in the north, and Cretaceous marine and continental clastics in the south and central areas. Glacial deposits cover the area, restricting the appearance of bedrock to the lower slopes of hills where streams have eroded surface material.

The dominant physical feature of the area is the Pasquia Hills, an escarpment that rises steeply from the Carrot River on its north side and from the Manitoba plain to the east, to elevations of 800 metres (m) and greater above sea level. The summit level of the eastern part of the hills is approximately 500 m above the adjacent lowlands. The abrupt face of the hills is due to relatively resistant Cretaceous shales that lie over more easily eroded sandstone and calcareous sediments. Deeply cut V-shaped valleys are common on the north side of the hills.

Glacial deposits covering the hills range in thickness from a few feet to several tens of feet. Sandy till is common on the north side of the hills, hummocky till occurs on the summit of the hills, with northwesterly transverse ridges common on both the northwest and southeast sides. Strand lines which represent the beach deposits of former glacial Lake Agassiz are present on the northwest and southeast sides of the Pasquia Hills, showing that part of the Pasquia Hills was an island in the lake during the final stages of glaciation.

2.6 Traditional/Domestic Uses

Many area residents use forest resources to meet their direct needs. Traditional uses include hunting, trapping, fishing and gathering of foods and medicinal plants, and use of timber for fuel and building materials.

Unfortunately, good records do not exist for the amounts of resources used for traditional purposes. Domestic fuelwood users harvest about 10,000 m³ annually.

2.7 Water

The planning area contains seven major watersheds: Saskatchewan, Carrot, Pasquia, Overflowing, Upper Red Deer, Red Deer-Armit, and Swan Rivers (Figure 2-3).

The Saskatchewan River (Cumberland) delta is one of the largest inland deltas in the world, and is a highly diverse and productive ecosystem. Its diversity and productivity come from the natural delta processes of periodic flooding and drainage, and of channel formation and abandonment.

The Pasquia and Porcupine Hills have numerous small lakes, with small drainage areas and steep outlets. Watersheds are also steep, with limited water storage capacities. Streams are subject to wide variations in flows, and to severe erosion and siltation in flood situations.

WATERSHEDS

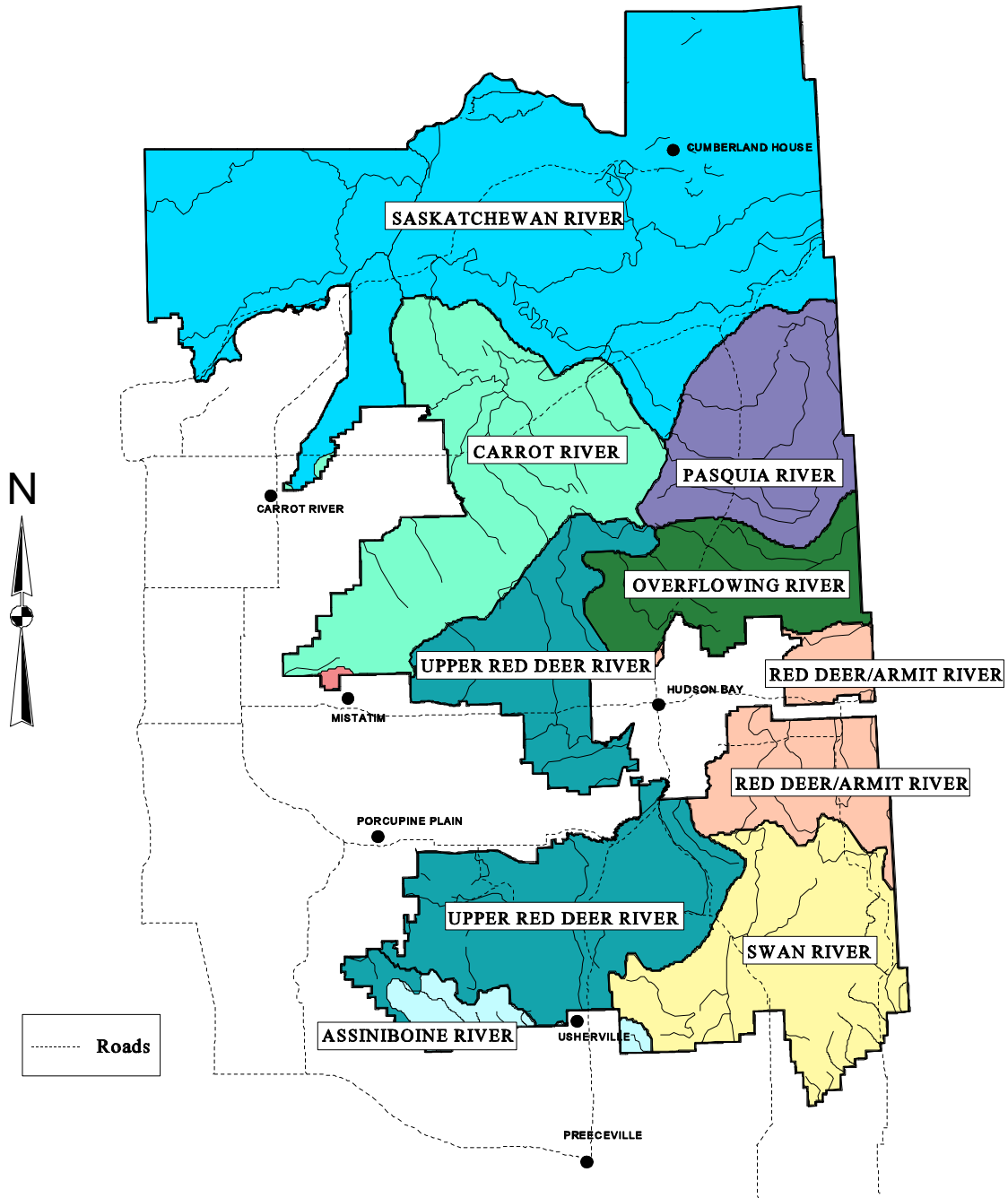


Figure 2-3

Precipitation in the Pasquia and Porcupine Hills is a major contributor to groundwater recharge throughout the planning area, necessary to supply water to lakes and rivers.

Water is an important resource in the planning area. Although its true value is extremely difficult to quantify, water plays an integral role in many activities both within and outside the forest, and is a vital part of a healthy forest ecosystem.

The planning area contains several large wetlands that are critical waterfowl nesting and staging areas.

Groundwater is an essential source of drinking water for many communities and individuals, and for livestock, irrigation and industry. It also recharges or supplies water to lakes and rivers throughout the planning area.

Many communities, industries and other interests in Saskatchewan and Manitoba rely on water originating from the Pasquia/Porcupine area. These water supplies are sensitive to contamination from natural or other causes. For example, in 1995 water supplies for the communities of Shoal Lake and The Pas, Manitoba, were lost due to erosion in the Pasquia Hills, and the resulting contamination by silt in downstream rivers.

Both surface and groundwater are sensitive to contamination, which can result from natural causes such as erosion, or from human activities such as improper use of chemicals or activities that remove protection from natural erosion.

Chapter 3

VALUES OF THE LAND'S RESOURCES

3.1 Intrinsic Values

The resources of the area have a wide range of values, from the immeasurable value of their existence, to their values to communities, to their economic value to the area and the province.

3.1.1 Environmental Values

Forests are ecosystems - systems made up of air, water, soil, plants, animals and microbes, bound together by a web of complex interactions. Key processes in ecosystems are production of organic matter and cycling of elements among soil, water, air and organisms. These processes provide what are known as ecosystem services - the flow of materials, energy and information from natural resources which contribute to human welfare and maintenance of biodiversity. These services include atmospheric gas regulation, climate regulation, water regulation, erosion control and nutrient recycling.

Our forests are part of larger global ecosystems. Management practices such as harvesting timber or other resources affect other parts of the forest ecosystem, and systems in other parts of the world. Maintaining healthy functioning ecosystems, from local to global scales, is essential for maintenance of conditions for life on earth, as well as for sustained production of renewable resources

The value of the Pasquia/Porcupine area habitats to wild plants and animals is considerable. The area contains biologically diverse communities of plants and animals, important to provincial biodiversity.

The planning area has some of the highest levels of biodiversity found in the province, due to a number of factors including climate and physiography:

CDramatic changes in topography between the Pasquia and Porcupine Hills and the lowlands to the east and north. Changes in elevation result in higher community and species diversity than on areas with little physical relief.

CCloseness to Manitoba. A number of plants and animals are more typical of forests found further east, resulting in community and species diversity greater than in boreal forests further west.

CThe Cumberland Delta. This large feature creates different forest and plant communities and increases overall biodiversity of the planning area.

Our knowledge of biodiversity of the planning area is incomplete. For example, little is known about thousands of species of insects and micro-organisms.

3.1.2 Aesthetic Values

For many people, the forest has values which may be thought of as aesthetic (related to appreciation of its beauty) or as spiritual. Many people have special feelings about the forest. Forests represent a refuge of unspoiled nature for those from more settled areas, in which much of what is wild and natural appears to have been destroyed. Although these emotional responses are difficult to measure, and impossible to put a dollar value on, they still must be provided for in land and resource management.

3.1.3 Cultural Values

Forests are an important part of our identity as a nation and a province. For many aboriginal people, forests have been their home for thousands of years, shaping their culture and traditions. The planning area contains numerous traditional cultural areas, including areas for hunting, trapping and gathering, ceremonial grounds and burial sites.

3.1.4 Scientific Values

As an integral part of our natural environment, forests are a living laboratory for scientists learning about ecosystem functions.

3.1.5 Archaeological Sites

Archaeological and heritage sites within the forest provide insights and information about our past. Archaeological sites are fragile and non-renewable. They have potential scientific, historical, ethnic, religious, social or other special symbolic or cultural value, and need to be preserved for the public good to be recognized, understood and appreciated. Archaeological sites may also have economic development potential as public educational, scientific and recreational tourism resources.

Archaeological heritage sites contain physical remains and other evidence of past human activity by different people over time and through changing environments. These sites may date from initial aboriginal settlement of the province some 10,000 years ago through to the early historic (post-contact) period. They include ancient aboriginal campsites and gathering areas, animal kill sites, quarry and stone tool manufacturing sites, burials and other ceremonial or sacred sites, fur trade posts, historic settlements and trails, and early homesteads and trappers' cabins.

The Pasquia/Porcupine planning area has not been extensively surveyed for archaeological sites. Approximately 23 ceremonial and burial sites, are known in the

planning area. The earliest known sites appear to be associated with the McKean cultural complex (about 3,000 years ago), although sites containing evidence of much earlier cultures have been recorded in immediately adjacent areas. Some early aboriginal, Métis and Euro-Canadian sites are also known. These include ceremonial, burial and settlement sites (Figure 3-1).

As much as 20% of the planning area has moderate to high archaeological site potential. Areas close to larger waterbodies and stream courses, sandy beaches, logical portage areas, stream confluences, sheltered bays and inlets, upland ridges of large bogs and marshes, and along other prominent hills and ridges, most likely contain larger sites that were used repeatedly, or for longer time periods. Such sites have the greatest potential for enhancing understanding and appreciation of aboriginal heritage and culture.

3.1.6 Wildlife Management Sites

Recognition of habitat value of the Pasquia/Porcupine area has led to some limited protection and active wildlife management of sites in the area. Among these are the Prairie National Wildlife Area, Neely Lake Migratory Bird Sanctuary, Leaf Lake Wildlife Management Unit, Wildcat Hill Wilderness Park, Waskwei River Protected Area, Brockelbank Hill Protected Area, many Ducks Unlimited managed areas and several other sites.

3.2 Economic Values

Resource economics are an integral part of the Pasquia/Porcupine Forest. The Forest provides important economic benefits to the area and to the province.

3.2.1 Forest Products

3.2.1.1 Timber

According to the traditional methods for estimating timber volumes available for harvest, the mature and over-mature timber resource in the planning area is estimated to be 28.7 million cubic metres of softwood and 44.3 million cubic metres of hardwood. Including the growth of immature stock, the amount that could be harvested each year on a sustainable basis (the Harvest Volume Schedule) is 536 thousand cubic metres of softwood and 928 thousand cubic metres of hardwood. These estimates are determined from those forest lands which are considered timber productive, are currently supporting a forest, and are not within designated protected areas or Indian Reserves. These estimates are the maximum average amount that could be harvested annually from the existing forest. Actual harvestable volumes likely will be less, given operable merchantability constraints, site specific environmental

HERITAGE SITES

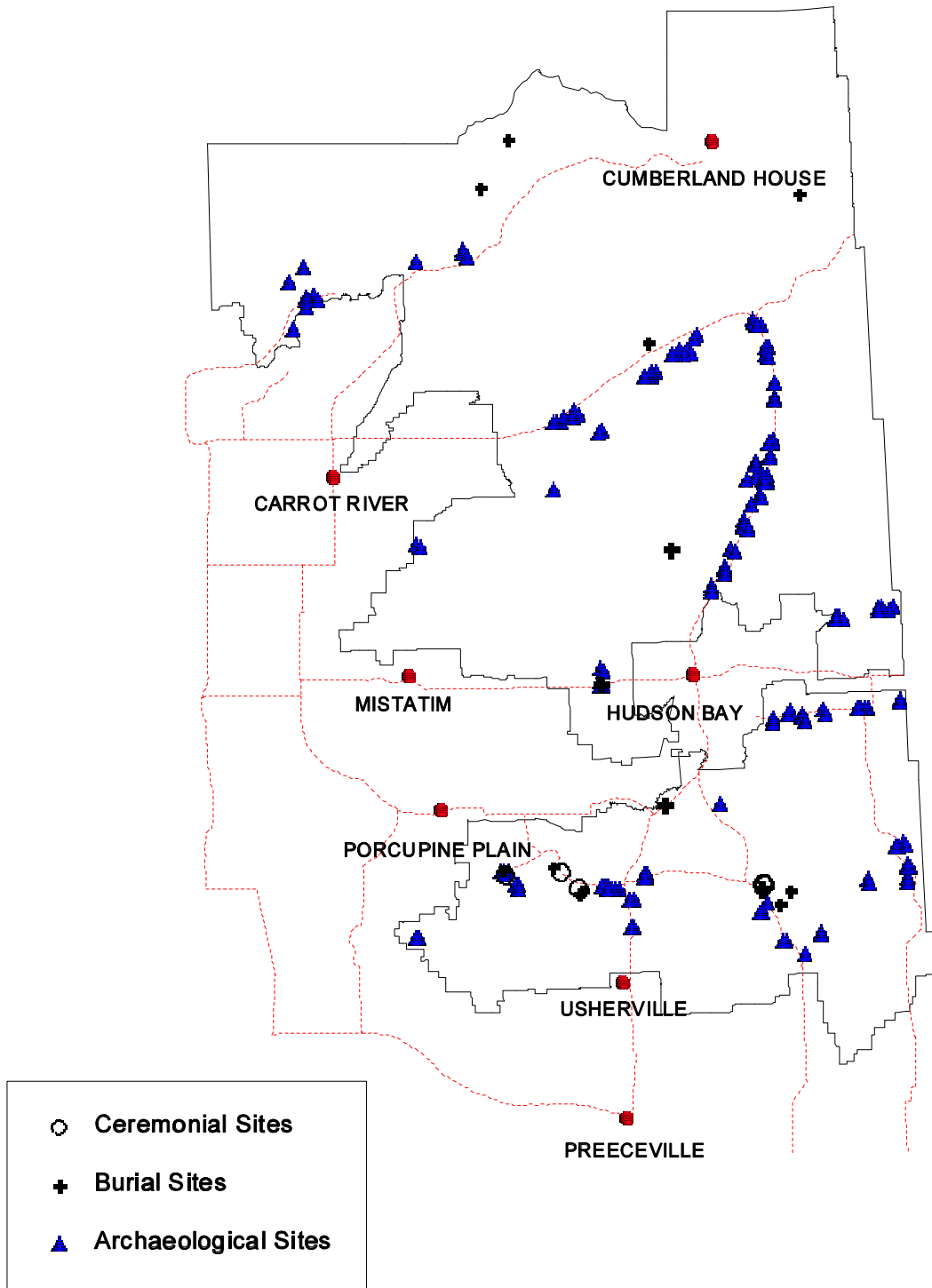


Figure 3-1

constraints, and the needs of other users and values, all of which will affect where and how timber may be harvested.

The timber industry has been a vital component of the economy of the planning area since the turn of the century. Several mills producing a variety of products were located throughout the area.

In the 1960s and 1970s major milling facilities were built: the MacMillan Bloedel waferboard plant, the Simpson Timber Company studmill, and the Saskatchewan Forest Products Corporation (SFPC) plywood plant, all in Hudson Bay, and the SFPC sawmill in Carrot River.

In 1990, due to an inadequate supply of economical softwood, reduced through over allocation and large forest fires, the Simpson studmill closed.

In 1994, the plywood plant underwent major modifications, enabling it to use logs down to 7" diameter for plywood. At the same time, the Carrot River sawmill was converted to a studmill that can use small black spruce and pine logs.

At present, the three major manufacturing plants in Hudson Bay and Carrot River contribute heavily to the area's economy. The plants employ directly 402 full time staff, have an annual payroll of \$22 million, and sales of \$107 million annually. Logging operations supplying the plants employ another 700 people seasonally, and the total harvest operation directly contributed \$31.1 million in 1994 to local and provincial economies. Not included in this figure is approximately \$1.2 million collected in crown dues in the fiscal year 96/97. Reforestation fees collected for that fiscal year were approximately \$1.8 million. This fund is managed by the company and is audited by the government to ensure that the money is spent on reforestation.

Eighteen small operators harvest a total of 5,000 m³ of softwoods annually, supplying 51 small sawmills in the area. Production levels for most of these mills are small - 33 mills each produce about 100 m³ (20,000 fbm) annually. The remainder of the small mills produce between 150 m³ (30,000 fbm) and 3,750 m³ (750,000 fbm). These mills offer seasonal employment to fewer than 10 employees each, and obtain wood through annual timber permits.

About 6,000 m³ of hardwoods are harvested by small operators, mostly white birch, for lumber and commercial fuelwood operations.

3.2.1.2 Other Products of the Forest

Interest is increasing in development of new industries using forest products such as mushrooms, peat moss, maple syrup, blueberries, cranberries and decorative floral products. These resources are also important for domestic use of area residents.

In 1993-94, in Cumberland House, 600 Manitoba maple trees were tapped, which produced 100 litres of maple syrup.

In the Carrot River area, a local business association has identified a market for fiddleheads, fronds of ostrich fern harvested before they unfurl in spring. They are also interested in harvesting wild berries, including saskatoons, blueberries, chokecherries and high and low bush cranberries, for other Saskatchewan industries.

3.2.2 Wildlife

3.2.2.1 Big Game

Moose

The Pasquia/Porcupine area has the highest densities of moose in Saskatchewan, and more than 60% of the sport harvest. From 1979 - 1994, an average of 6,940 or 65% of the moose hunters in the Province hunted in the planning area, annually. Since 1972 an average of 1,990 moose were taken annually in the planning area, for an average of 59% of the Provincial harvest (see Figure 3-2).

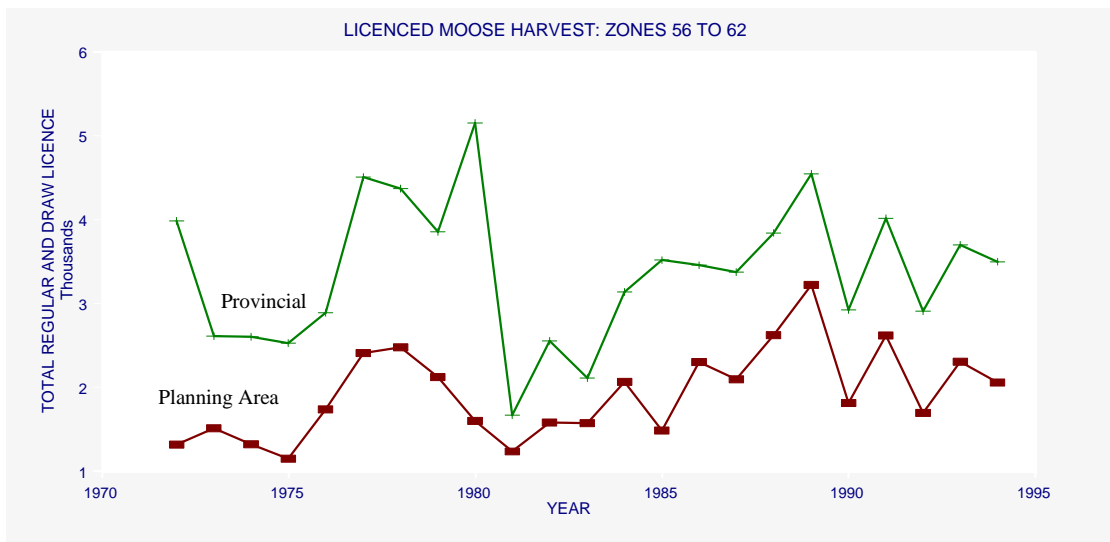


Figure 3-2. Licenced moose harvests in the planning area and province, 1972 to 1994.

The value of the moose resource to sport hunters in terms of recreation and meat, in comparison to other game species can be assessed by looking at the total number of hunter days each year. For example in 1996 sport hunters spent a total of 27,666 days pursuing moose in the planning area. Hunter days do not, however, measure the value

of the resource to non-consumptive or traditional uses; both these uses are considerable.

Outfitting for moose in the Cumberland Delta is a significant industry for some Cumberland House residents and supports about half of the guided moose hunting in the Province.

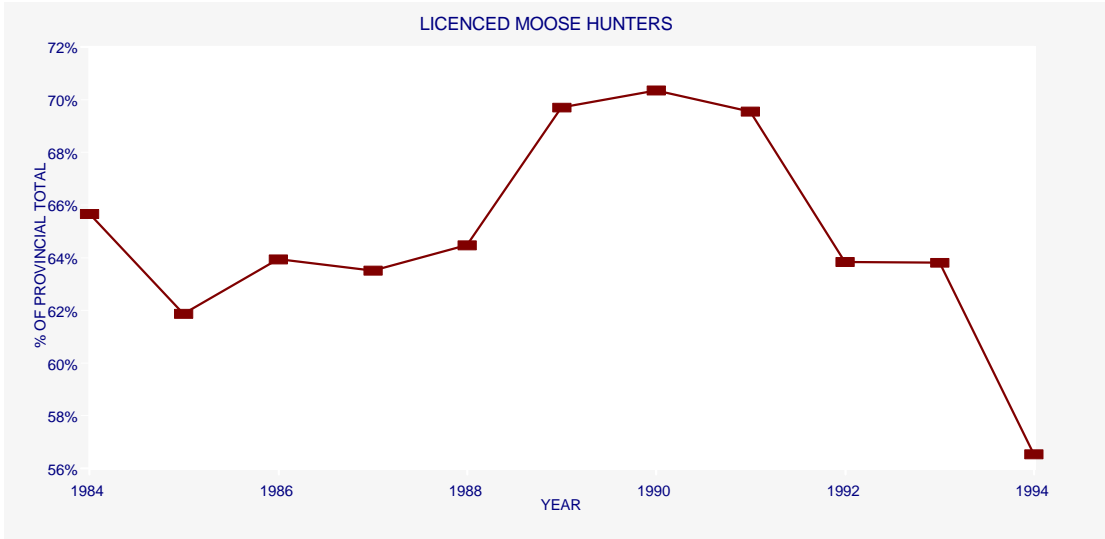


Figure 3-3. Licenced moose hunters in the planning area: percentages of provincial totals, 1984 to 1994.

Elk

About 55% of the licenced elk harvest in Saskatchewan occurs in the planning area. Approximately 69% of licenced Saskatchewan elk hunters, hunt in the area (see Figure 3-4).

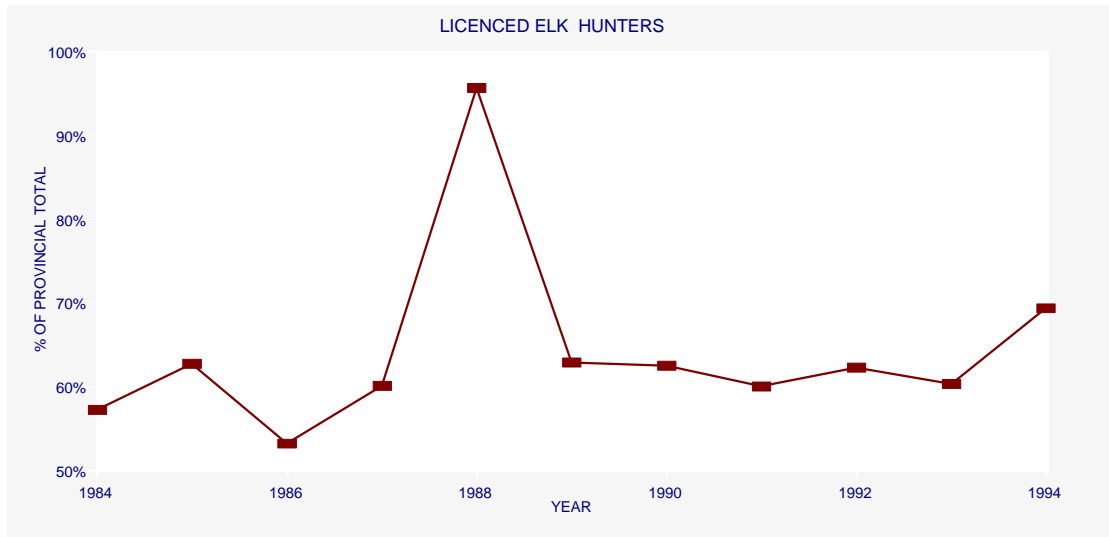


Figure 3-4. Licenced elk hunters in the planning area; percentages of provincial totals, 1984 to 1994.

The decline in the moose population during a severe winter in 1971-72 led wildlife managers to believe there would be a dramatic shift to elk hunting. Consequently, in 1973 the Province restricted elk hunting to antlered animals (bulls only) during a three week calling season in early September. With mild winters and the hunting pressure directed towards bulls, the elk population increased.

In the southern portion of the planning area, as elk populations increased in the 1980's, wildlife managers shifted a portion of the elk harvest to antlerless animals on a limited draw. Further expansion of the elk herd, even following greater cow harvest, has led to a greater emphasis on the harvesting of cows to stabilize, and in some cases, reduce herd growth. Reinstatement of a big game damage compensation program in 1996 has somewhat appeased landowners who have experienced chronic crop and haystack damage along the forest.

In the Cumberland Delta, conversely, emphasis is placed on population recovery where no agricultural influence exists.

In 1996, there were 6,700 elk hunters in Saskatchewan of which 1,750 (32%) hunted in the planning area. Of the 1,378 elk harvested throughout the province in 1994, 824 (60%) were taken in the planning area.

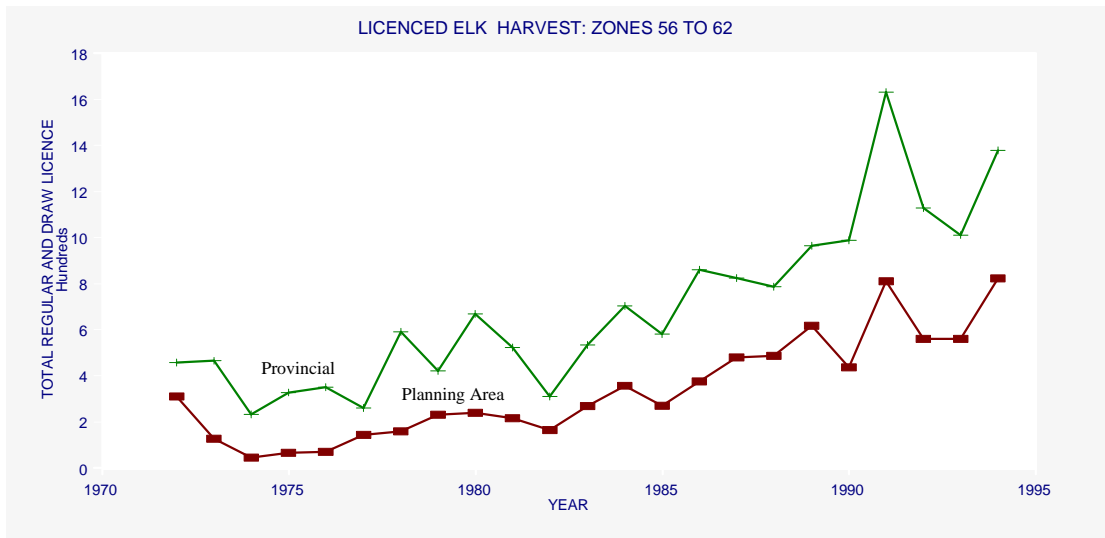


Figure 3-5. Licenced elk harvests in the planning area and the province, 1972 to 1994.

Because elk have low twinning rates and are poor colonizers, population recovery can be a slow process as is the situation in the Cumberland Delta. SERM has nearly completed a Provincial Elk Management strategy. A significant portion of this strategy focuses on the Pasquia/Porcupine area. The strategy will soon be available for public input.

White-tailed deer

Saskatchewan is one of North America's best locations for white-tailed deer hunting. Considering the total range of deer in Saskatchewan and the relatively small size of the planning area, the current deer harvest in this area is a very significant part of the provincial deer harvest (Figure 3-6). The 3,500 white-tailed deer harvested in the study area each year represents more than 10% of the provincial harvest. In 1996, 53,900 hunters spent 254,130 days hunting white-tailed deer, of which 15,735 days were spent in the planning area.

Most of the deer hunting occurs south of the Cumberland Delta. Like moose and elk, deer numbers have declined in the Delta dramatically.

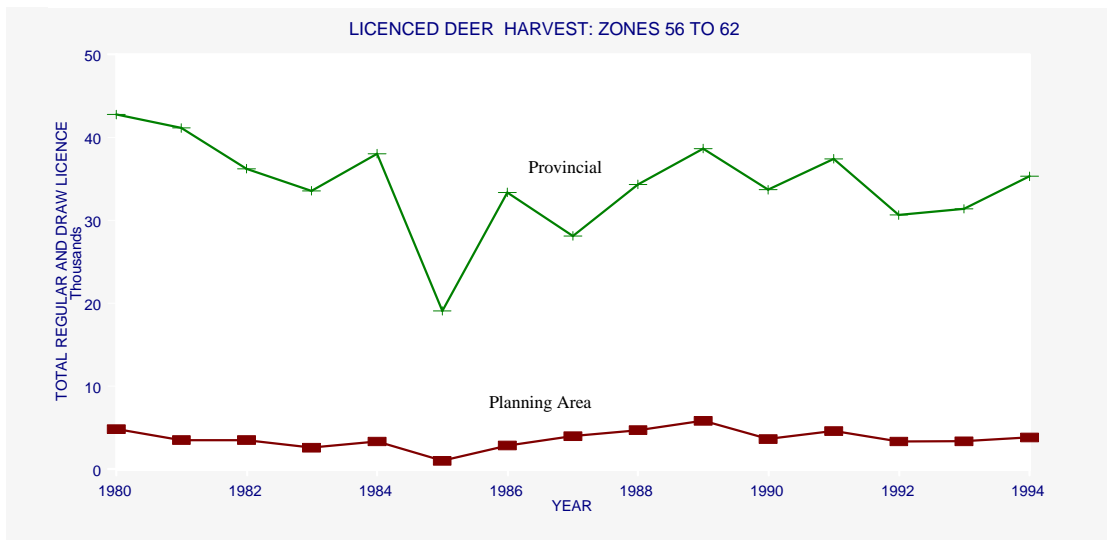


Figure 3-6. Licenced deer harvests in the planning area and the province, 1980 to 1994.

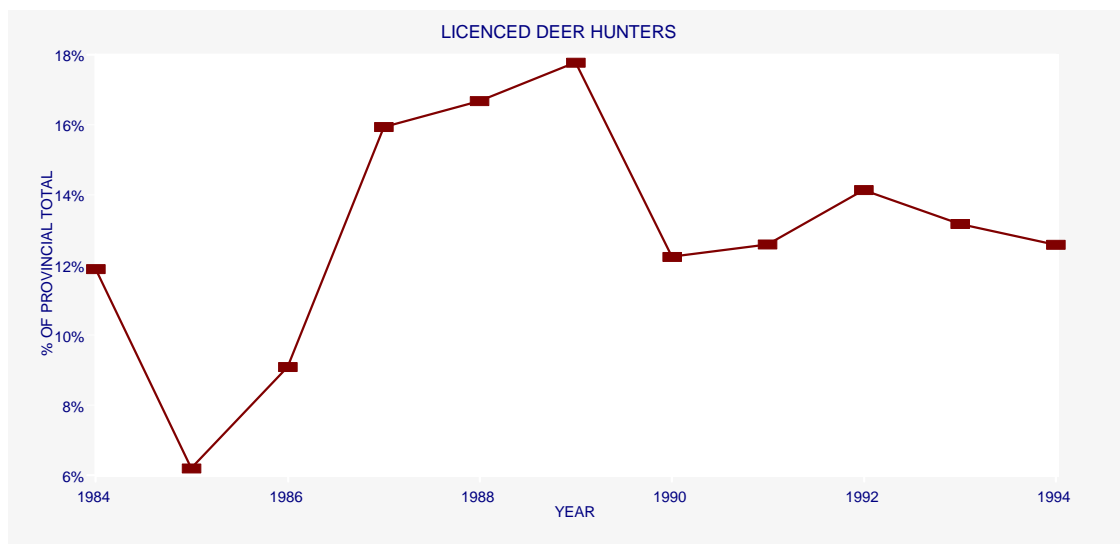


Figure 3-7. Licenced deer hunters in the planning area; percentage of provincial totals, 1984-1994.

Since 1989 outfitters have been entertaining non-resident clients from outside of Canada (mainly U.S.A.) to hunt along the fringe and commercial forest areas of Saskatchewan. The most important area for outfitting for white-tail deer is the Pasquia/Porcupine region and adjacent farmlands. In 1994, 375 hunter days (about 1100 hunters) of deer outfitting took place in the planning area; Wildlife Management Zones (WMZ). 48, 49, 56 to 62.

Licence quotas have fluctuated with population numbers and two deer bag limits are common. Success rates on a first licence were 62 percent for a harvest of 682 deer with 232 deer harvested on a second licence.

Black Bear

Black bear was treated as a nuisance species until 1968, when it was given protection as a fur and game species. Since then, spring and fall hunting seasons have been held. Currently, there is a one bear bag limit.

Since 1981 the bear harvest has averaged about 840 animals annually province wide. An average of 1,330 hunters per year over the past 14 years have hunted black bears in the area. The harvest in 1996 was about 380 animals. Until 1990, the Pasquia/Porcupine area supplied about 40% of the provincial bear harvest (Figures 3-8 and 3-9).

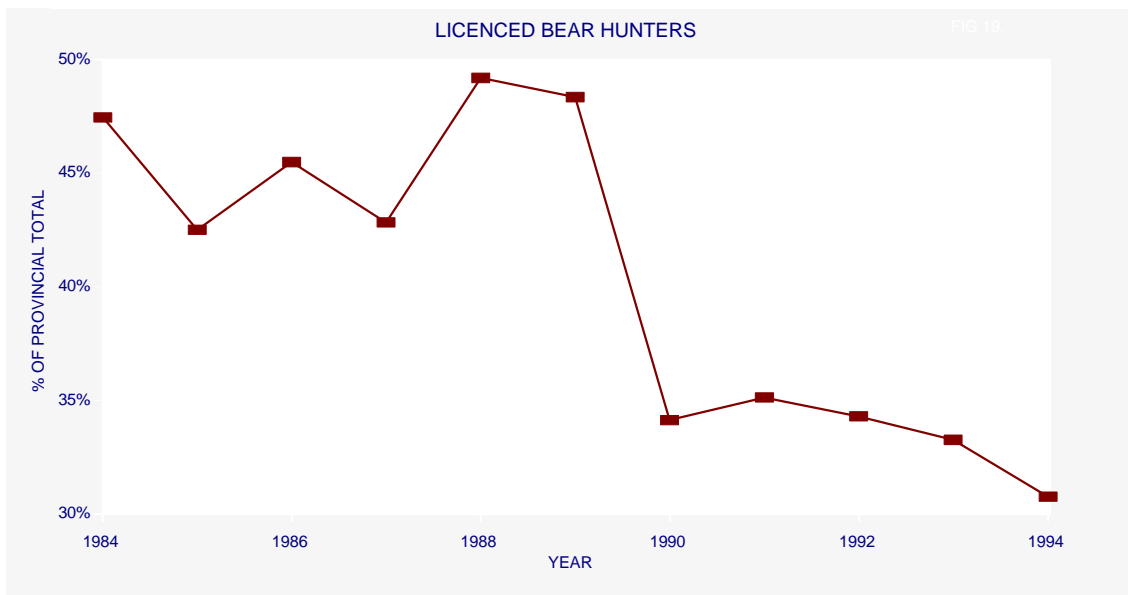


Figure 3-8. Number of licenced bear hunters in the planning area; percentage of provincial totals, 1984 to 1994.

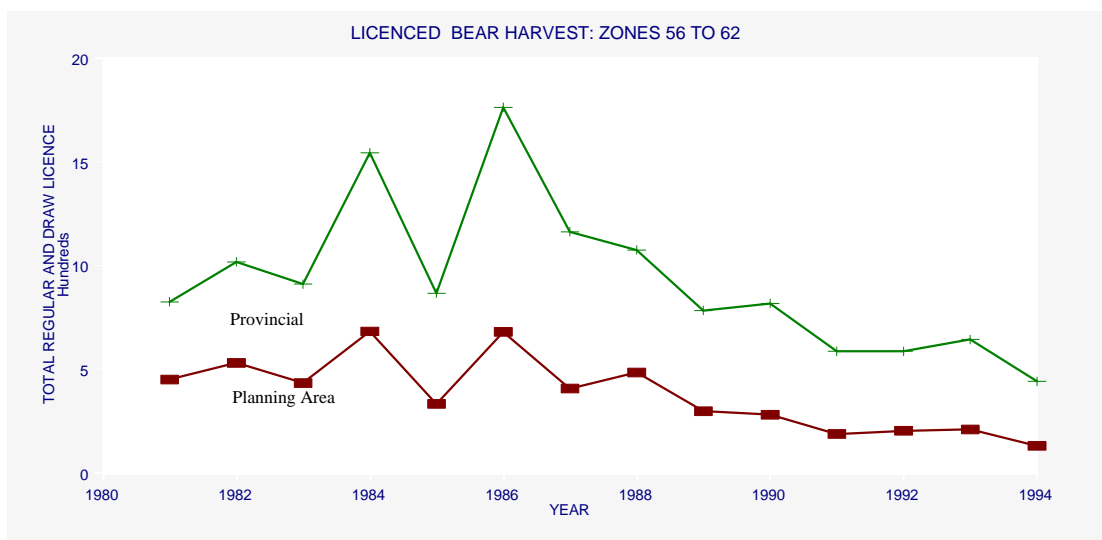


Figure 3-9. Licenced bear harvests in the planning area and the province, 1981 to 1994.

The planning area is the most important area in Saskatchewan for bear outfitting, with 42% of provincial clients in 1994.

Hunting bears by non-residents is increasing in recent years while interest by Saskatchewan resident hunters is declining.

3.2.2.2 Furbearers

About 20 species form the basis of the Saskatchewan trapping industry, including beaver, muskrat, mink, lynx, fox, coyote, squirrel, raccoon, black bear, wolf, weasel, marten, fisher, otter, wolverine, skunk and badger.

The wild fur industry, the oldest commercial use of natural resources in Saskatchewan, is declining. While annual harvests have always been affected by species distribution, human access, weather conditions (particularly fall and winter), traditions and customs, and incentives to trap, marketing boycotts and lifestyle changes are causing the overall downward trend.

Until European settlement, North American Indians were not economically interested in the pelts of many of the furbearers. Traditional lifestyles meant that larger animals, such as ungulates, were more valuable than smaller furbearers, except possibly beaver and snowshoe hare. European trade items provided incentive to trap furbearers, with beaver most in demand.

In 1946-47 the Fur Conservation Program was started, setting out 95 fur conservation

areas still used today (see Figure 3-10). The goal was to bring about the recovery of beaver, and to structure an orderly trapline management system to reduce conflicts and maintain forest traplines as a commercial entity. Original provincial membership was about 3,000 (1,400 Treaty Indians, 1,400 Métis, 300 non-aboriginal). Present trapper numbers, provincially, are between 2,000 and 3,000.

By 1960 major changes to the trapping lifestyle began. Government agencies funded community projects, which moved people off the land. The snowmobile, which allowed more frequent returns to the community, was a significant cost that meant trapping had to be more profitable. Until 1963 harvest levels of beaver had been consistent. Since 1964, harvest levels have been associated with fur prices.

In the 1970s fur prices were high, which led to a surge in trapping activity, with average income to trappers of \$1,570 annually. For five years total production value exceeded \$4 million.

After the boom years of the 1970s, the 1980s were a decade of transition, when European boycotts made fur a low value product. From a peak in number of trappers provincially of 22,500 in 1980-81, the number in 1992-93 was 3,000.

In 1988-89 the number of pelts harvested in the Pasquia/Porcupine area dropped from about 24,100 the previous season to 8,200, and has not been greater than 8,700 since.

Currently, there are about 100 active trappers in the Pasquia/Porcupine area, most older than 55. Few younger people are getting into the industry. In the 1994-95 season, in the Pasquia/Porcupine area, 8,400 pelts were harvested, with a value of \$194,000.

3.2.2.3 Fish

Commercial Fishing

Commercial fishing in the planning area occurs on Cumberland Lake and the Saskatchewan River Delta. This fishery focuses on walleye/sauger, goldeye, northern pike, whitefish, and sturgeon. Presently, 30 to 35 fishermen are involved in the fishery which produces about 26,000 kg of fish and \$90,000 of revenue annually. These revenues are an important source of income for some residents of Cumberland House.

FUR CONSERVATION BLOCKS

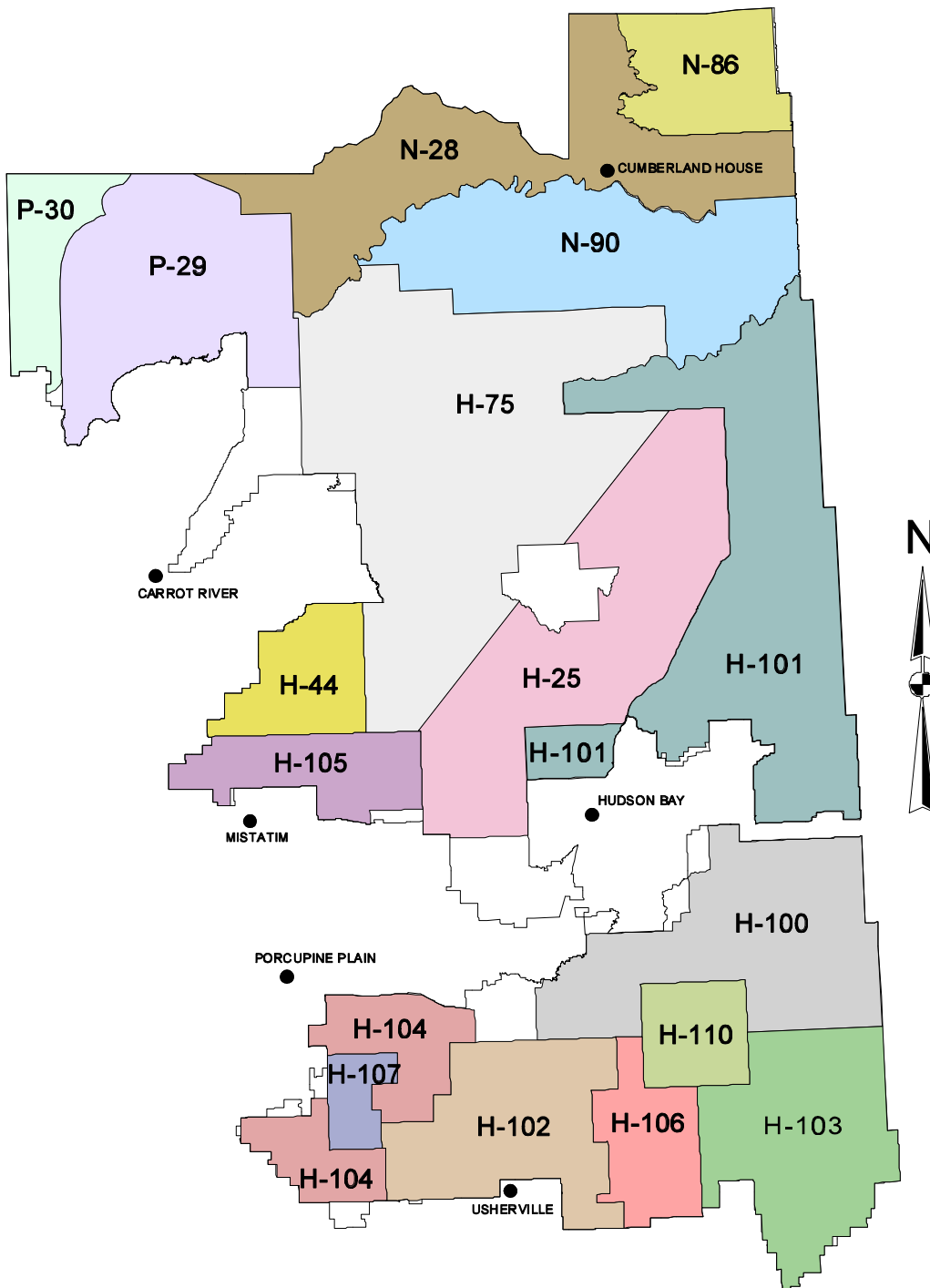


Figure 3-10

Sport Fishing

Sport fishing for native fish species is a major draw in the Pasquia/Porcupine planning area. Angling is concentrated in the Porcupine Hills on lakes along the McBride Lake, Little Swan, and Woody Lake Roads, sport fishing also occurs in the Cumberland House area on Cut Beaver Lake and on the many channels in the Saskatchewan River Delta. A seasonal fishery takes place on the Helldiver-Culdesac Lake complex for fish migrating up the Saskatchewan and Carrot Rivers.

Angling for brook trout and other stocked trout species is also popular in the area. The Fir, Swan, and Armit Rivers provide most of the trout fishing.

Anglers harvest 15,000 kg or 21,000 fish on lakes in the Porcupine Hills area. The highest harvest occurs along the McBride Lake and Little Swan Roads where the overall lake harvest rate is 12.2 kg/ha, nearly double the rate on the Woody Lake Road. These harvest rates are among the highest recorded in Saskatchewan.

The department's fish enhancement and regular fish stocking programs are used to sustain and diversify fishing opportunities in the area. To date fish enhancement has undertaken 10 projects which include: stocking of cutthroat trout, lake habitat assessment and improvement, walleye rearing pond development, and water control/fish-way structures. Funding for these projects has been from the Fish and Wildlife Development Fund and from cooperating agencies such as: Saskatchewan Wildlife Federation local chapters, Ducks Unlimited, Fish and Game Leagues, flyfisher clubs, Department of Highways and Transportation, Saskatchewan Water Corporation, and the Cumberland Fishermen's Cooperative. Additionally, extensive professional and labour services have been donated.

Angler use in the planning area can be estimated from the 1990 Survey of Sporting Fishing in Saskatchewan (results from the 1995 survey are not yet available). Fishing effort is estimated to be in the order of 80,000 angler-days which generates two million dollars in direct expenditures by anglers. The majority of these anglers are Saskatchewan residents which expend more than 80% of their fishing effort on lakes in the Porcupine Hills.

3.2.3 Agriculture

3.2.3.1 Grazing

Today, 22 cattle producers have grazing permits for 1,400 head of cattle for 470 km² (182 Mi²), about 2.2% of the planning area (see Figure 3-11). A typical grazing permit is for 20 - 160 head of cattle, and covers an area ranging from several sections to more than a township (15 - 180 km²). The estimated annual economic benefit of grazing in the planning area is \$3 million.

3.2.3.2 Haying

Eleven haying permits are issued annually in the planning area, for a total tonnage of 450 tonnes, generating approximately \$1000.00 in revenue.

3.2.3.3 Wild Rice

Fourteen wild rice operations cover approximately 1,600 hectares in the planning area. The economic benefit to the government is minimal; fees are \$0.25/per hectare, which results in \$400.00 to be collected in 1997.

The production over the last 3 years has been approximately 53,600 kgs (120,000 lbs) with a value of about \$90,000. Most of the wild rice producers are located in the southern portion of the planning area.

3.2.4 Tourism and Recreation

3.2.4.1 Travel and Tourism

People travel to the Pasquia/Porcupine area for four reasons: visiting friends and relatives; recreation, including hunting, fishing, snowmobiling, camping and sporting events; personal travel, for health care, education or shopping; and business. The 1990 Canadian Travel Survey for the area showed that the number of people travelling for visiting friends and relatives and recreation was about equal, and accounted for 70% of all visits.

The entire area provides excellent outdoor tourism opportunities. The Pasquia/ Porcupine and Cumberland areas have an outstanding reputation for big game hunting, and the Tobin Lake area is a popular destination for sport fishing.

While a substantial volume of pleasure travel has been for fishing and hunting, the growing trend toward ecotourism presents a new and long-term tourism market opportunity. The Provincial Ecotourism Strategy, completed in 1996, identified the

GRAZING PERMITS

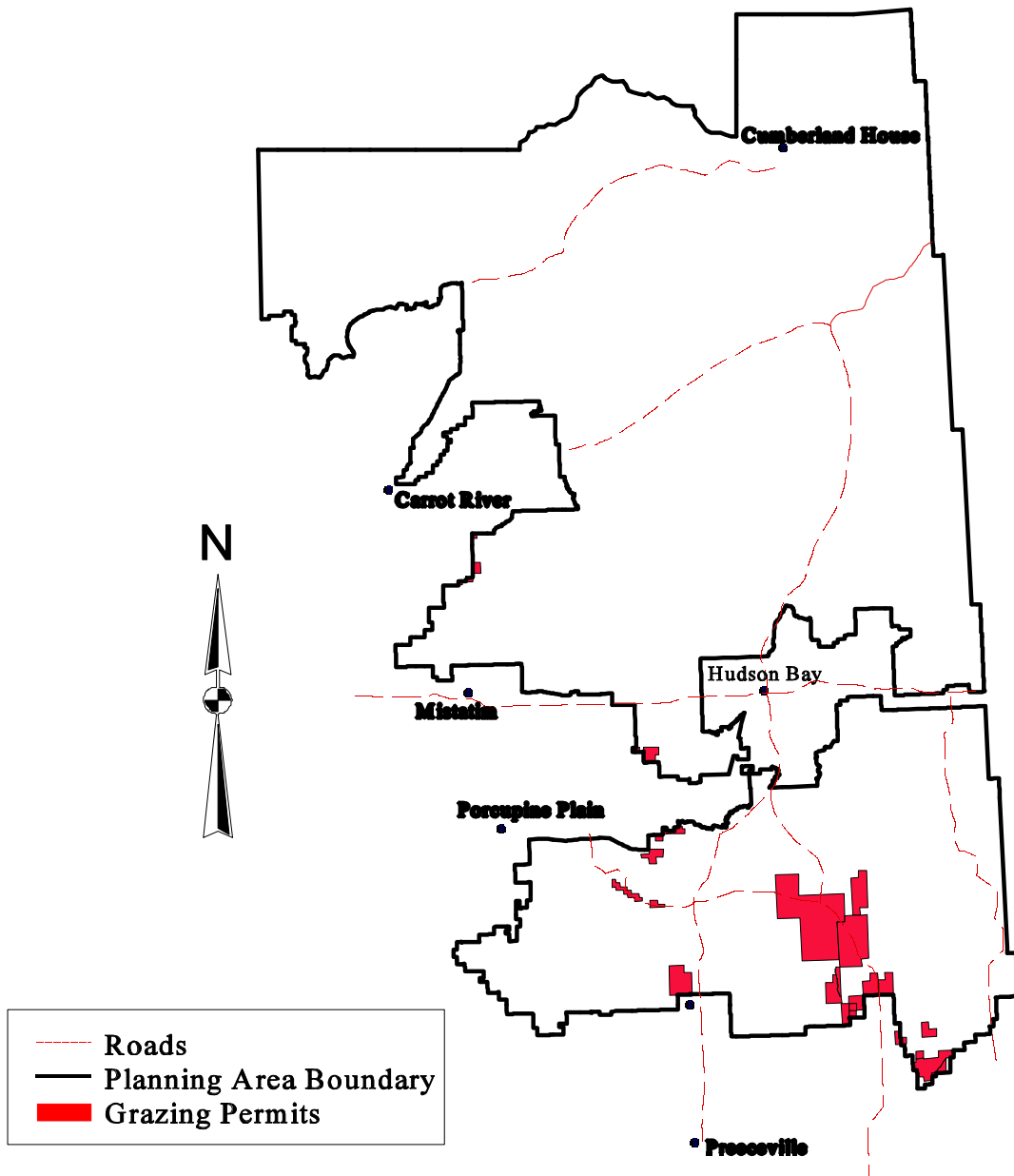


Figure 3-11

Pasquia/Porcupine forests and the Cumberland delta as locations capable of attracting international, national and provincial ecotourism markets.

Facilities available for recreation in the region include: 24 hotels and motels, with 468 units; 6 community campgrounds, with 129 sites; 19 parks and lakeside campgrounds, with 1,077 sites; 10 fixed roof accommodations in parks and lakeside locations, with 106 units; 4 farm vacation bed and breakfasts; 32 outfitters with accommodations capacity of 340; 5 golf courses with grass greens; and 72 restaurants.

The following Tourism Industry organizations have members in the planning area: Kelsey Country Tourism Association; Saskatchewan Outfitters Association; Saskatchewan Country Vacations Association; Saskota Flyway (Highway Route) Association; and the Northern Woods and Waters (Highway Route) Association.

The following organizations with members in the planning area include tourism development and marketing among their areas of interest: Federation of Saskatchewan Indians; AZPAA Rural Development Corporation (Arborfield, R.M. of Arborfield, Aylsham and Zenon Park); Hudson Bay Rural Development Corporation; Porcupine Forest Rural Development Corporation; Chambers of Commerce in Carrot River, Hudson Bay and Nipawin; and the Saskatchewan Watchable Wildlife Association.

3.2.4.2 Snowmobiling

SERM began signing trail agreements with snowmobile clubs in 1992. Currently, SERM has allocated a trail system of 2,900 km to 10 snowmobile clubs (see Figure 3-12).

Tourism benefits from snowmobiling are significant. In the 1993/94 season an estimated \$4.1 million was generated through snowmobiling in the region. Potential revenues to the region from snowmobiling could exceed \$15 million annually.

3.2.5 Land Dispositions

Land uses for which dispositions (leases or permits) are required include recreational cabins, trapping cabins, institutional camps, towers, waste disposal sites, burial grounds, residences, ranches, docks, well sites, industrial uses, commercial uses, agricultural permits, warm-up shelters, lagoons, chemical disposal sites, quarries, stockpiles, storage sheds and campgrounds (Figure 3-13). Current annual revenue from these dispositions is \$95,681.

Effective August 1, 1995, SERM put a freeze on any new land dispositions within the planning area until the Land Use Plan is completed.

MAINTAINED SNOWMOBILE TRAILS

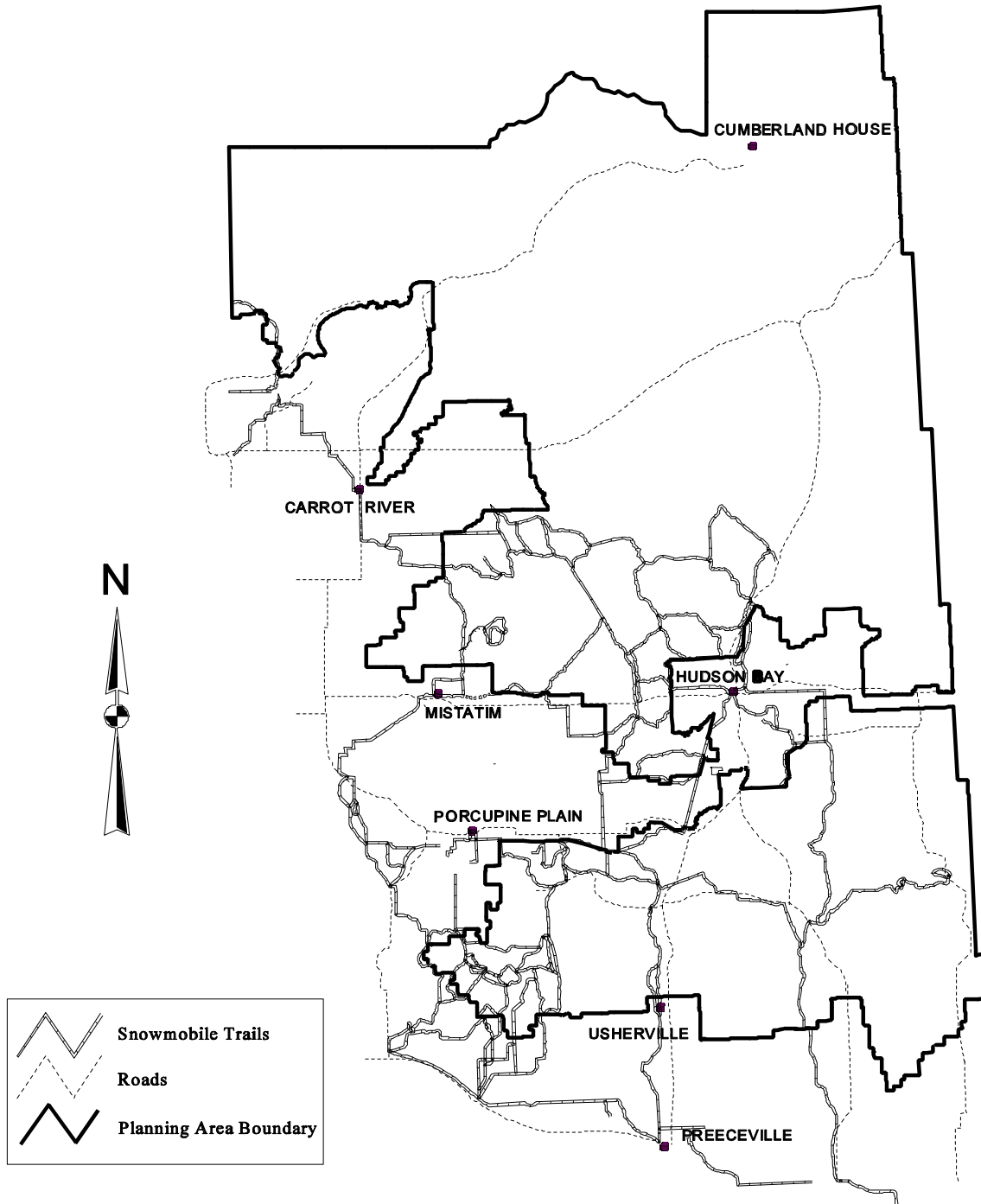


Figure 3-12

ALL CROWN LAND DISPOSITIONS

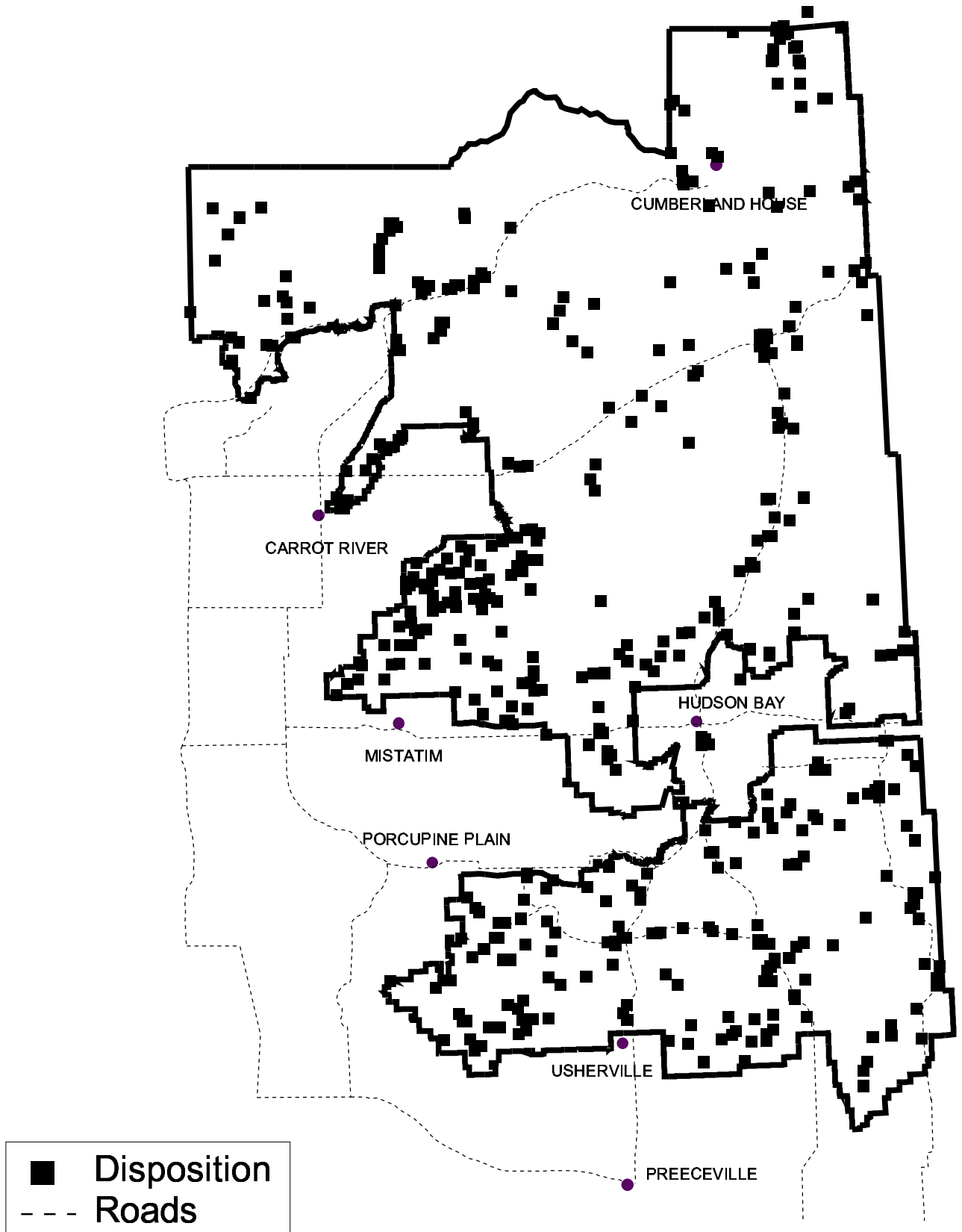


Figure 3-13

3.2.5.1 Recreational Cabins

Recreational cabins, whether remote or in subdivisions, are secondary, non-permanent residences, not to be used for commercial or business purposes.

There are 211 recreational remote cabins scattered throughout the planning area (Figure 3-14). Distance between cabins must be at least 1.6 km, and sites must be 1.6 km from any travelled road, and 90 m from any access trail.

There are 8 cabin subdivision sites, mostly in the Porcupine Forest (Figure 3-15, Table 3-1). Development of subdivisions is done by the private sector; SERM, in conjunction with Municipal Government, accommodates opportunities for development, by conducting assessments and reviewing proposals.

All areas were open for all types of disposition development, until the Woody Fire of 1980. In 1982 further development of remote recreational cabins was prohibited in the Porcupine Forest because of access created by the Woody Fire. However, trapping cabins and commercial development were still allowed. In 1983 SERM opened the Little Swan subdivision of 50 lots to accommodate recreational users within the Porcupine Forest.

In 1980 SERM developed a policy that all new dispositions except trapping cabins would require a legal registered survey, so that locations would be accurately known, and a 21-year lease.

Table 3-1: Existing Cabin Subdivisions

| Recreational Cabin Subdivisions | Leased Cabin Sites | Privately Owned Cabin Sites |
|----------------------------------|--------------------|-----------------------------|
| Elbow Lake | 28 | 3 |
| Little Swan | 50 (25 vacant) | |
| Parr Hill Lake | 1 | 22 |
| Pepaw Lake | 1 | |
| McBride Lake | | 60 |
| Ruby Lake | | 45 |
| * Reserve | | 129 |
| * Bertwell | 68 | |
| * These are communities as well. | | |

REMOTE RECREATION CABINS

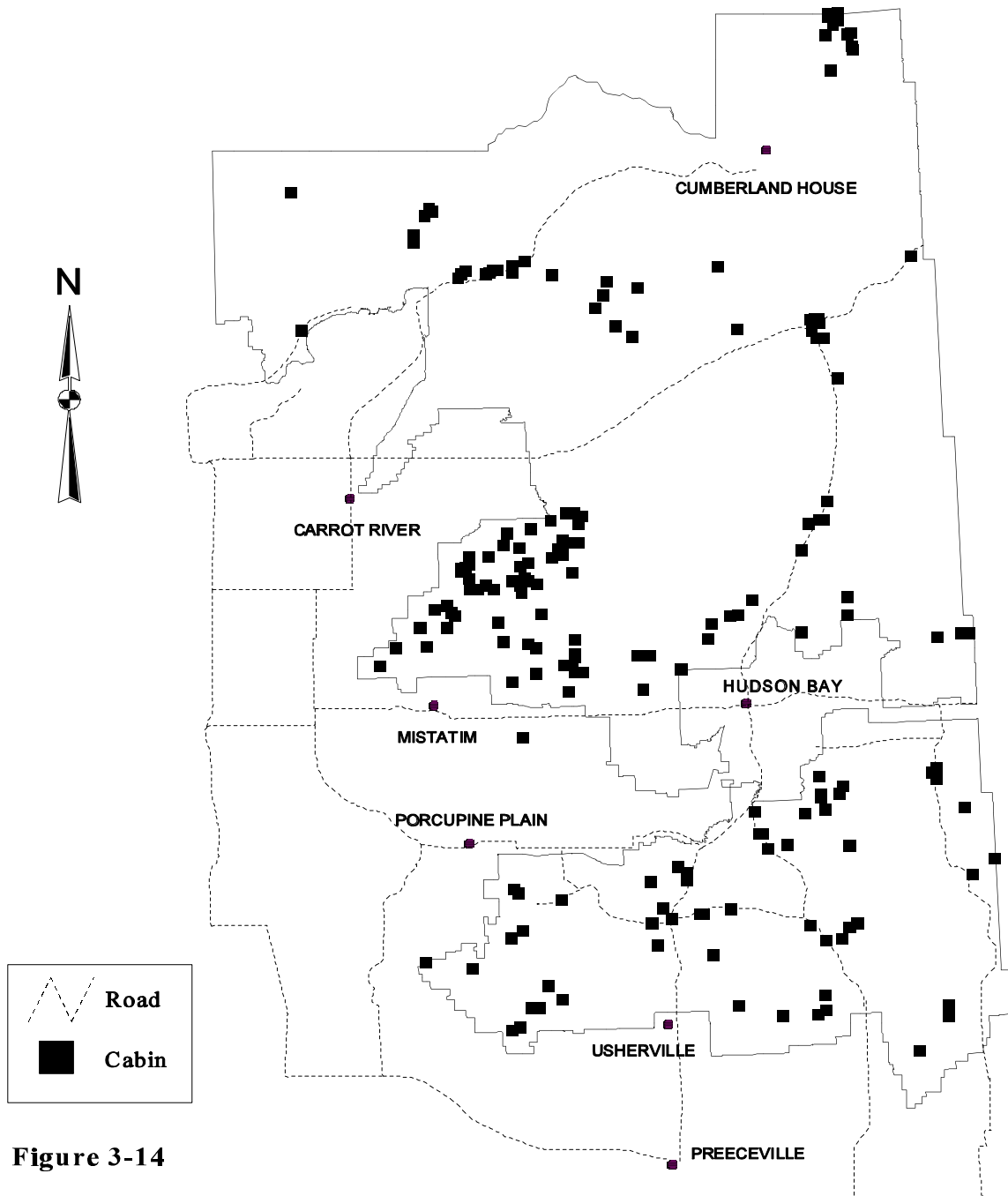


Figure 3-14

CABIN SUBDIVISIONS

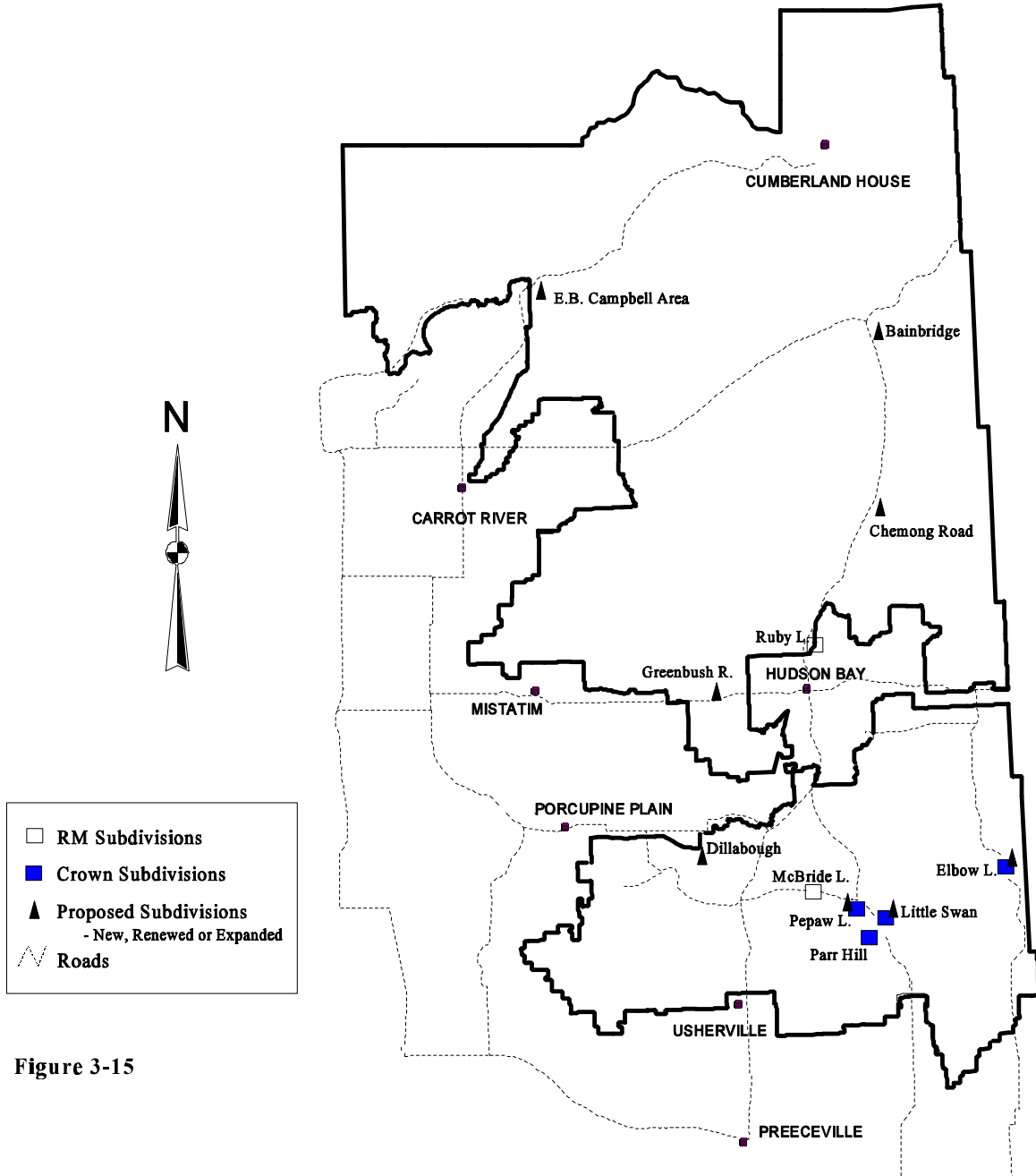


Figure 3-15

3.2.6 Outfitting

SERM began licensing outfitters and allocating areas of Provincial Forest in 1988-89. By 1992, all of the Provincial Forest was allocated to outfitters, with much overlap among the areas. In 1996, SERM worked with outfitters to realign allocation areas so that most of the overlaps have been removed.

Currently, there are 90 outfitters in the Pasquia/Porcupine area. SERM receives \$10,225 in outfitter licence fees, \$794,790 in non-resident licence sales, and \$228,225 in outfitter resource allocation fees, for a total of \$1,033,240.

3.2.7 Mineral Exploration and Mining

In 1996, 506 active mineral dispositions covered 469,333 ha in the Pasquia/Porcupine planning area. Most of these were acquired for diamond exploration in Cretaceous kimberlite formations and associated volcanic rocks. To date, no drill intersections of kimberlite have been reported. Most exploration work has consisted of airborne and ground geophysics.

Within the planning area, oil shale, manganese and silica sand deposits have been identified, and exploration has been done for oil, gas, helium, uranium and base metals.

3.2.7.1 Metallic Minerals

Exploration for metallic minerals such as copper-zinc-nickel-lead and gold is focussed on the subsurface Precambrian rocks at depths ranging from 100 m in the north to 700 m in the south of the planning area.

There are four recorded metallic mineral showings in the planning area, three copper-zinc and one gold. In the north, the subsurface extension of the metal-rich Precambrian volcanic rocks of the Flin Flon-Hanson Lake area has very high potential for hosting copper-zinc-lead deposits. Nickel-copper deposits similar to the recently mined out Namew Lake Deposit in Manitoba next to the planning area may exist. These deposits are relatively unexplored.

Ordovician and Silurian Palaeozoic limestones and dolomites of the sedimentary basin may contain massive sulphide lead-zinc-silver deposits.

Placer gold is reported to have been recovered from sand and gravel in the Leaf Lake area east of the Pasquia Hills.

3.2.7.2 Uranium

A flurry of uranium exploration occurred from 1973 through 1979, which identified scattered uranium mineralization occurrences within Cretaceous black shale horizons. Analyses of these shales in the vicinity of Cracking River determined a content of 0.67 - 9.28 parts per million of uranium. Uranium exploration ended in late 1979.

3.2.7.3 Oil Shales

Oil shales have been located from just below the base of the Riding Mountain horizon to over 30 m below the horizon. The total tonnage of oil shales in the Pasquia Hills is immense, with reserves estimated at 2.6 billion barrels of oil; however, only part of the area is suitable for strip mining. There are two active oil shale leases southwest of the Wildcat Hills.

3.2.7.4 Petroleum and Natural Gas

While no commercial quantities of oil or gas have been identified, both the Palaeozoic carbonate and Cretaceous clastic sedimentary rocks of the area exhibit some potential as host rocks. Several oil and gas test holes were drilled in the Pasquia Hills area, and oil and gas showings have been recorded from two holes near Hudson Bay. From 1930 to 1939, several wells were drilled into Cretaceous sandstones and shales in the Pasquia Hills region.

3.2.7.5 Helium

High helium concentrations ranging up to 2% were noted in gases bubbling to the surface in swamps and sloughs near the eastern border of the Red Earth Indian Reserve #29, during a uranium exploration program in the late 1970s. Two active helium leases are located northwest of the Wildcat Hills, where four wells have been drilled.

3.2.7.6 Industrial Minerals

Silica Sand

Silica sand deposits are exposed along the Red Deer River near Hudson Bay, and along the Carrot River. Potential for deposits also exists between the two areas. These silica deposits have recently gone into production.

Cretaceous silica sands along the Red Deer River were discovered around 1941. Reported reserves of the Red Deer Silica Inc. deposit indicated 14 million tonnes of silica sand. The Red Deer silica sand is well-sorted fine to coarse grained, and of high quality, well-suited to a number of applications such as

glass, foundry sands, blasting sand, silica flux, decorative applications, ground silica, ferrosilicon and specialty silica. Distance to markets affects the economic viability of the deposits.

Building Stone

Palaeozoic carbonates and dolomites are used as commercial building stone. Similar rocks occur in the north of the planning area.

Carbonate Rocks

Palaeozoic carbonates are a potential source of calcium carbonate for cement manufacture and acid neutralization (in uranium processing). Tested samples indicate that the magnesium carbonate content relative to the calcium carbonate content is too high for current commercial use. New technology in cement manufacturing may make it possible to use higher magnesium carbonates as a substitute for traditional calcium carbonate rocks.

Lowlands north of the Pasquia Hills are underlain by limestone at fairly shallow depths. Grades are likely similar to industrial limestone at Mafeking, Manitoba.

Calcareous sedimentary rocks of Cretaceous age south of Hudson Bay have been recently evaluated for cement production.

Manganese

Nodular concretions rich in iron and manganese are exposed in a manganiferous shale horizon on the Waskwei, Whitepoplar and Bainbridge Rivers, and in several canyons on north slopes of the Pasquia Hills as far west as the Man River. It may cover as much as 390 square kilometers, but over much of the area it is covered by thick shale and glacial deposits. Only part of the manganese deposit is suitable for surface strip mining. Preliminary estimates indicate a maximum potential tonnage of 5 million tonnes of nodules. An investigation into the utilization of the nodules for ferromanganese production was carried out by the Federal Mines Branch in 1971. Results concluded that the deposit grade was subeconomic.

3.2.8 Water

The fishery, wild rice industry, traditional uses, and the recreational sector rely directly on a healthy water supply. The viability of the wild fur industry and grazing and haying activities depends on the region's water resources.

Chapter 4 ADMINISTRATIVE CONTEXT AND CONSTRAINTS FOR THE LAND USE PLAN

This chapter gives an overview of the various departments and agencies that are involved with land and resource management, and discusses some of the current legislation and policies that will affect the Land Use Plan.

4.1 Government Organizations and Interests

4.1.1 Provincial Government Departmental Organization

Several departments and agencies are involved with resource management and land use. Table 4-1 lists the department or agency, and its main area of impact.

Table 4-1: Provincial Agencies Involved with Resource Management and Land Use

| Department/Agency | Branch | Responsibility |
|-------------------------------------|--------------------------|--|
| Environment and Resource Management | Environmental Assessment | Coordinates provincial review and evaluations of environmental impacts of proposed developments. |
| | Environmental Protection | Develops provincial policies and programs related to protection of air, water and soils. |
| | Fish and Wildlife | Develops and manages provincial fish and wildlife policies and programs. |
| | Forest Ecosystems | Develops and manages provincial integrated forest resource management programs and policies. |
| | Forest Fire Management | Provides and coordinates provincial forest fire management activities. |
| | Information Management | Provides resource data management services. |
| | Parks and Facilities | Develops and manages programs and policies for provincial and regional parks. |
| | Regional Operations | Delivers and manages all SERM policies and programs. |
| Agriculture and Food | N/A | Develops provincial land management policies and programs. |
| | | Promotes sustainable use of lands and resources used for agricultural production. |
| Energy and Mines | Mines Branch | Manages mineral resources. |
| Highways and Transportation | N/A | Develops roads and infrastructure. |

| Department/Agency | Branch | Responsibility |
|---|---|--|
| Municipal Government | Municipal Development | - Provides technical and advisory support to municipalities for community planning and governance. - Administers the subdivision approval process and use of dedicated lands. |
| | Heritage | Administers <i>The Heritage Property Act</i> , which facilitates heritage resource management and development. Through the Archaeological Resource Management Program, developments are routinely reviewed for possible heritage concerns. |
| Northern Affairs | Resource Development | Negotiate, monitor and administer Mine Surface Lease Agreements in northern Saskatchewan on behalf of Provincial Departments. Surface Leases contain Human Resource Development Agreements. |
| | Northern Mines Monitoring Secretariat (NMMS) & Environmental Quality Committees (EQC) | Provide information to communities on uranium mine site developments and activities and provide a forum to ensure the considerations of northerners in the way in which uranium mine development occurs in northern Saskatchewan. |
| | Economic Development | Develop Business and Community Development Plans related to Forest Management Agreements and encourage and support other business development opportunities through existing programs. |
| Sask Power | N/A | Develops and maintains power and transmission lines. |
| Tourism Saskatchewan | Product Development | Plans and develops tourism destination areas. |
| Saskatchewan Wetland Conservation Corporation | N/A | Manages wetlands and waterfowl habitat. |

4.1.2 Relevant Federal Government Department and Agency Interests and Responsibilities

Table 4-2 lists the federal government departments and agencies that are involved in resource management.

Table 4-2: Federal Agencies Involved in Resource Management

| Department/Agency | Responsibility/Goals |
|---|--|
| Environment Canada | Preserve and enhance quality of the natural environment and renewable resources, including migratory birds, other non-domestic flora and fauna, and water; carry out meteorology; and coordinate federal environmental policies and programs. |
| Canadian Environmental Assessment Agency | Through administration of the Canadian Environmental Assessment Act, provide effective means of integrating environmental factors into federal planning and decision-making while taking into account public values and the goal of sustainable development. |
| Agriculture and Agrifood Canada | To promote and support a growing, competitive, market-oriented agriculture and agrifood industry, which achieves farm financial security, environmental sustainability, and a safe, high quality food supply. |
| Fisheries and Oceans | Develop and administer policies and programs in support of Canada's economic, ecological and scientific interests in oceans and freshwater fish habitat, for conservation and sustained utilization of Canada's fisheries resources in marine and inland waters, and for safe, effective and environmentally sound marine services responsive to the needs of Canadians. |
| Indian and Northern Affairs Canada | Meet the federal government's constitutional, political and legal responsibilities to First Nations and the North, including sustainable development of natural resources (e.g. mining, oil and gas, forestry and water). |
| National Round Table on the Environment and Economy | Identify, explain and promote, in all sectors of Canadian society and in all regions of Canada, principles and practices of sustainable development. |
| Natural Resources Canada | Provide expert scientific and economic knowledge to Canadians, and promote sustainable development and use of Canada's natural resources and competitiveness of the energy, forest, mining, geomatic and geoscience sectors. |
| Transport Canada | Ensure high standards for a safe transportation system, contribute to Canada's prosperity, and protect the physical environment by evaluating the impacts of policy and regulatory decisions on the environment and promoting and meeting environmental standards. |

4.2 Legislation

Various federal and provincial legislation exists which has direct or indirect impacts on lands and resources. The following are relevant to integrated land and resource management and use. Further details are in Appendix 3.

4.2.1 Provincial Legislation

Provincial legislation affecting management of resources includes the following Acts:

The Clean Air Act, The Crown Minerals Act, The Department of Energy and Mines Act, The Ecological Reserves Act, The Environmental Assessment Act, The Environmental Management and Protection Act, The Fisheries Act, The Forest Act, The Heritage Property Act, The Natural Resources Act, The Oil and Gas Conservation Act, The Parks Act, The Pest Control Act, The Planning and Development Act, The Prairie and Forest Fires Act, The Provincial Lands Act, The Rural Municipality Act, The Sand and Gravel Act, The Surface Rights Acquisitions and Compensation Act, The Water Corporation Act, The Wildlife Act, and The Wildlife Habitat Protection Act.

The Forest Act authorizes the negotiation of forest management agreements. These agreements are long term contracts between the province and a forest industry, which grant rights to harvest timber according to certain principles and conditions.

4.2.2 Federal Legislation

Federal legislation affecting management of the forest includes the following Acts: *Canadian Environmental Protection Act, Canadian Environmental Assessment Act (1995), Fisheries Act, Forestry Development and Research Act, Department of Indian Affairs and Northern Development Act, Migratory Birds Convention Act, Indian Act, and Navigable Waters Protection Act.*

4.3 Provincial, National and International Agreements and Strategies

A number of agreements, plans and strategies which have been developed in recent years by various levels of government are relevant to land and resource management. The common element of all these agreements is to provide frameworks for the development of management plans, continued research, and industry and public education.

Provincially, the Conservation Strategy for Sustainable Development in Saskatchewan, published in 1992, makes several recommendations related to integrated land and resource management.

The Saskatchewan Long-term Integrated Forest Resource Management Plan, and the Forest Management Policy Framework were developed by SERM to set the direction for sustainable management of forest ecosystems.

Several agreements, provincial, national and international, relate to forest fire protection.

Nationally, the National Forest Strategy and Canada Forest Accord, the Partnership Agreements in Forestry, the National Round Table on the Environment and the Economy, the Canadian Biodiversity Strategy and the Whitehorse Mining Initiative are broad-based agreements which set out principles and direction for environmentally sustainable resource development.

The Model Forest Program was developed by the Canadian Forest Service to help implement integrated sustainable resource management; to develop and apply innovative concepts in forest management; and to test sustainable forestry practices. A network of ten model forests has been established across Canada since 1992, including the Prince Albert Model Forest, which covers 315,000 ha in central Saskatchewan. A common feature of each model forest is the building of partnerships to achieve environmental, economic, social and cultural objectives.

In 1989, World Wildlife Fund (Canada) launched the Endangered Spaces Campaign, aimed at establishing a network of protected areas which represent all of Canada's natural regions, by the year 2000. In 1992, in support of this initiative, the chairs of the Canadian Parks Ministers' Council, Canadian Council of Ministers of the Environment and the Wildlife Ministers' Council of Canada signed *A Statement of Commitment to Complete Canada's Networks of Protected Areas*. This statement was also endorsed by representatives of the Canadian Council of Forest Ministers and Canada's four national Aboriginal organizations.

Internationally, in 1992 the United Nations Conference on Environment and Development (UNCED) was the source of the Convention on Biological Diversity, the Statement of Principles on Forestry, and the Framework Convention on Climate Change, all supported by Canada.

In 1995, the Santiago Declaration was developed by Australia, Canada, Chile, China, Japan, Korea, Mexico, New Zealand, Russia, and the United States. This declaration endorses a comprehensive set of criteria and indicators for conservation and sustainable management of temperate and boreal forests, intended to provide common understanding of sustainable forest management, and to provide a common framework for evaluating progress toward sustainability.

Details about these agreements are in Appendix 4.

4.4 Environmental Assessment

All developments proposed within land use planning must consider environmental sensibilities. The land use plan will not replace the need for environmental assessments of resource developments. Environmental Assessment Branch is responsible for ensuring that all plans for future development activities are fully evaluated for acceptability of likely environmental implications, before commitments to proceed are made. This is achieved, in part, through the Saskatchewan Environmental Assessment and Review Process.

This process provides for a coordinated, comprehensive and thorough review of environmental issues associated with certain development proposals, and ensures that the public and responsible authorities are aware of environmental tradeoffs and risks which must be accepted to realize benefits associated with each proposal.

The Environmental Assessment Act (1980) requires that a proponent receive ministerial

approval before proceeding with a development. The Act (Section 2(d)) defines development as: "...any project, operation or activity or any alteration or expansion of any project, operation or activity which is likely to:

- (i) have an effect on any unique, rare or endangered feature of the environment;
- (ii) substantially utilize any provincial resource and in so doing pre-empt the use, or potential use, of that resource for any other purpose;
- (iii) cause the emission of any pollutants or create by-products, residual or waste products which require handling and disposal in a manner that is not regulated by any other Act or regulation;
- (iv) cause widespread public concern because of potential environmental changes;
- (v) involve a new technology that is concerned with resource utilization and that may induce significant environmental change; or
- (vi) have a significant impact on the environment or necessitate a further development which is likely to have a significant impact on the environment.

For purposes of the environmental assessment process, environment is defined as:

- (i) air, land and water;
- (ii) plant and animal life, including man; and
- (iii) the social, economic and cultural conditions that influence the life of man or a community insofar as they are related to the matters described in subclauses (i) and (ii)."

An environmental impact assessment (EIA) would be conducted for most major projects proposed in the province. Examples include: linear developments (roads, transmission lines, pipelines); large scale industrial facilities; mines; hydroelectric and thermal power plants; large scale water management projects; and large scale recreation or residential developments.

4.5 Forest Ecosystem Protection Policy (Fire, Insects and Disease)

Forest ecosystem protection refers to government policy and programs that manage fire, insects and disease, using an integrated and ecological approach.

Each of the natural disturbances (fire, insects and disease) have contributed in the past to healthy forest ecosystems. Saskatchewan's boreal forests are of fire-origin. Fire was a key factor in controlling the species composition and age structure of the forest, producing patterns upon which other parts of the ecosystem depended. Insects, as part of nature's food chain, provided significant food for birds. Disease contributes to the natural cycles of life within the forest.

With changing times, the expanded use of forests and resources have promoted the suppressions of fire, insects and disease. Intensive timber harvesting and forest protection (putting out fires) over the past 50 years have interrupted natural fire cycles (fire size, number

and frequency). There is concern about the impact(s) that these interruptions have on the health of forest ecosystems. Although losses of timber to insects and disease are generally less than fire, recent outbreaks of spruce budworm are having significant impacts on white spruce in the Pasquia and Porcupine forests. Spraying for spruce budworm has raised concerns regarding the impacts that it may have on song bird populations.

Decisions regarding timber harvesting methods and forest protection (from fire, insects and disease) require thorough inventories of forest ecosystem values, stakeholder values and knowledge of fire, and land management objectives. To protect the ecosystem, new concepts for timber harvesting and forest protection are being considered. For example:

- < timber harvesting may be planned to mimic patterns that are characteristic of natural fire, to partly replace natural disturbances. It remains to be seen how representative this will be.
- < Fire management will consider zones with varying levels of forest fire protection. Zones close to communities will have a high protection priority and fires will be suppressed. In other areas that are zoned as “low priority”, fire may be allowed to burn.

The current fire policy for Saskatchewan is outdated and does not reflect potential forest values and uses, nor does it widely promote the use of fire as a resource management tool. SERM is developing a new provincial Forest Ecosystem Protection Policy that will address how the department will respond to its responsibilities regarding natural disturbance regimes in forest ecosystems (fire, insects and disease). An integrated and ecological approach to resource management and protection will be incorporated, reflecting stakeholders’ changing values of the forest. Residents of the Pasquia/Porcupine/Cumberland areas will be asked for their input into the identification of regional values, land use objectives and protection efforts required, and to contribute to a regional fire priority map to guide the protection efforts in the area.

4.6 Representative Areas Network

Saskatchewan has a goal of conserving native biological diversity and natural resources by protecting and managing a network of areas representing the full range of native ecological systems. Sites within the Pasquia/Porcupine planning area have been selected to contribute to this network (Figure 4-1).

The Representative Areas Network (RAN) is composed of lands and waters which are designated and managed to represent and conserve our ecological resources for current and future generations. RAN sites act both as reservoirs of biological diversity and as benchmarks for comparison with more heavily utilized landscapes. RAN sites will also provide for: 1) protection of areas known to contain species at risk, 2) areas of high scenic value and unique features, and 3) appropriate recreational, educational and research opportunities.

Saskatchewan’s land classification system divides the province into 11 ecoregions, each

REPRESENTATIVE AREAS NETWORK NETWORK SITES

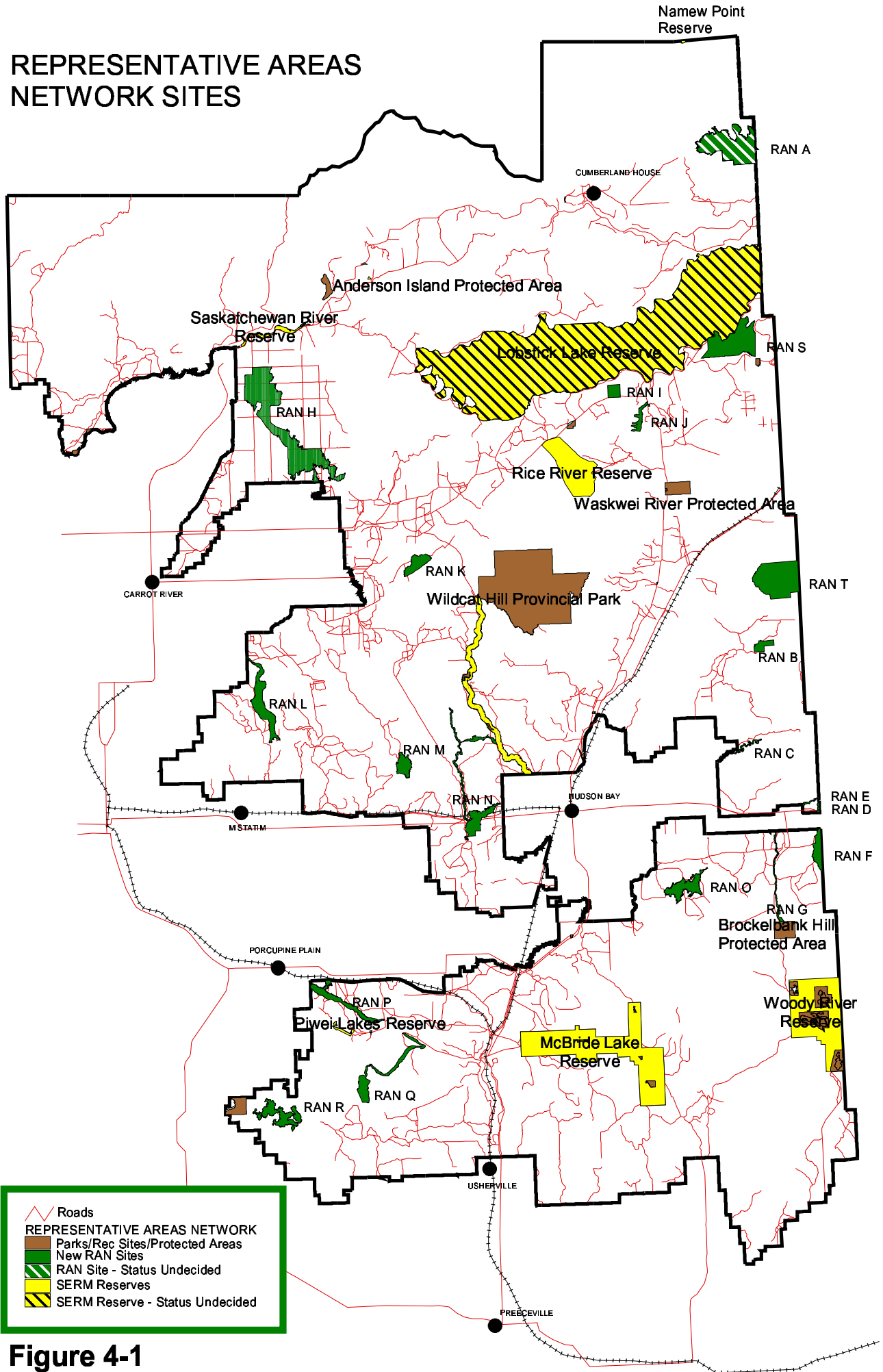


Figure 4-1

characterized by geology, soils, climate, plants and animals. To preserve and manage adequate examples of Saskatchewan's natural landscapes, the RAN site selection is based on enduring features, or unique soil associations. **Enduring features** are areas characterized by specific rock, soil and landform patterns that are stable over long periods of time. Studies have shown that if all enduring features are adequately represented, most plant and animal communities are likely to be included in the RAN. The enduring features method is a "coarse filter" approach. As a complementary "medium filter" approach, information is collected from data sources such as forest inventory maps and on-site visits, to ensure that the RAN is indeed representative and ecologically healthy. The third layer in the RAN selection process, the "fine filter" approach, will occur over longer time periods, and may involve smaller sites that contain unique features. As changes occur in the RAN sites, and as new information becomes available, some adjustments to the network may become necessary.

Larger representative areas are more desirable than smaller sites for maintaining biological diversity over the long term because they support larger, more viable populations of native species. In reality, the size of any given representative area will depend on the size of the underlying enduring feature, how much native cover remains, and the diversity of the biological communities that occur on the enduring feature and within each ecoregion.

Once areas are designated as RAN sites, they will be managed to maintain or restore ecological integrity. Ecological integrity means that the ecosystem structure and functions are unimpaired by human-caused stresses, and that native species are present at viable population levels. Management of lands adjacent to representative areas must consider the potential impacts of activities and developments on the integrity of representative areas.

Responsibility for management of RAN sites will involve a variety of people, including governments, non-government organizations and individuals.

Certain lands within the Pasquia/Porcupine planning area will be zoned as Resource Protection areas; these will include representative areas. To make sure that such areas are administered in accordance with the intent of the land use plan, most Resource Protection areas will be temporarily designated Park Land Reserves under *The Parks Act*. Under this designation, there will be a freeze on new land use allocations for up to five years, during which time more detailed planning and consultation will take place about the best way to manage these special sites and the most appropriate permanent designation for individual areas. In addition, SERM normally requests a freeze on further allocations of subsurface mineral rights from Sask Energy and Mines by having a Crown Mineral Reserve placed on the area along with the Park Land Reserve. Available options for eventual permanent designation of these representative areas include: Ecological Reserves under *The Ecological Reserves Act*; Protected Areas, Recreation Sites or several types of Parks under *The Parks Act*; and Wildlife Refuges under *The Wildlife Act*, as well as several other legislative and non-legislative mechanisms.

Representative areas are not intended to exclude all human activities. Sites that are existing parks will be managed with park management plans in mind. Many areas will have multiple

uses in addition to their value as relatively undisturbed areas. Acceptable uses will vary by site. An activity may occur on a representative area provided that it will not degrade the long-term ecological integrity of the site. Traditional uses such as hunting, fishing, trapping and gathering have been part of the ecosystem for many years and have had little impact. These activities could continue on most representative areas, subject to a management plan which will be prepared for each area. Other human activities, such as road building and other industrial developments, pose threats to ecological integrity and will generally be excluded.

4.6.1 Identification of Representative Areas within the Pasquia/Porcupine Forest Management Agreement Area: General Approach and Results

One of the goals of the Saskatchewan Representative Areas Network is to preserve and manage examples of Saskatchewan's natural landscapes and biodiversity, based on enduring features found in each of the 11 provincial ecoregions. The planning area straddles three ecoregions: the Mid-Boreal Upland, Mid-Boreal Lowland and Boreal Transition; planning to assess enduring features representation was carried out on the basis of these ecoregion boundaries (Figure 4-2). Existing protected areas and proposed parks exclusions were first assessed for the representation of enduring features already found under these forms of protection. The new proposed RAN sites identified within the planning area are therefore, part of a larger network within each of the three ecoregions that will, once complete, be representative of the full range of features found throughout that ecoregion.

In order to ensure that proposed RAN sites were compatible with needs that may be identified by other land and resource users, SERM undertook a process that involved consultation and input from a wide range of interests. As the first step in this process, SERM consulted with Saskatchewan Energy and Mines and Saskfor MacMillan to assist in the preliminary identification of potential candidate areas. The placement of new candidate representative areas was considered in light of the need to develop a network that:

- < contains relative proportions of non-timber producing land, timber producing land, and water similar to that found in the ecoregion as a whole;
- < protects areas known to contain species at risk;
- < results in a series of sites connected by corridors, where possible;
- < contains as little human disturbance as possible, especially roads;
- < contains examples of wetland and forest vegetation types;
- < minimizes impact on timber volumes;
- < avoids significant mineral resources, especially those sites already leased or developed; and
- < allows for flexibility to consider local nominations for new or alternate areas.

For the most part, these objectives were achieved. A comparison of the relative proportions of land cover and forest growth types in the total planning area and within

REPRESENTATIVE AREAS IN PASQUIA - PORCUPINE ECOREGIONS

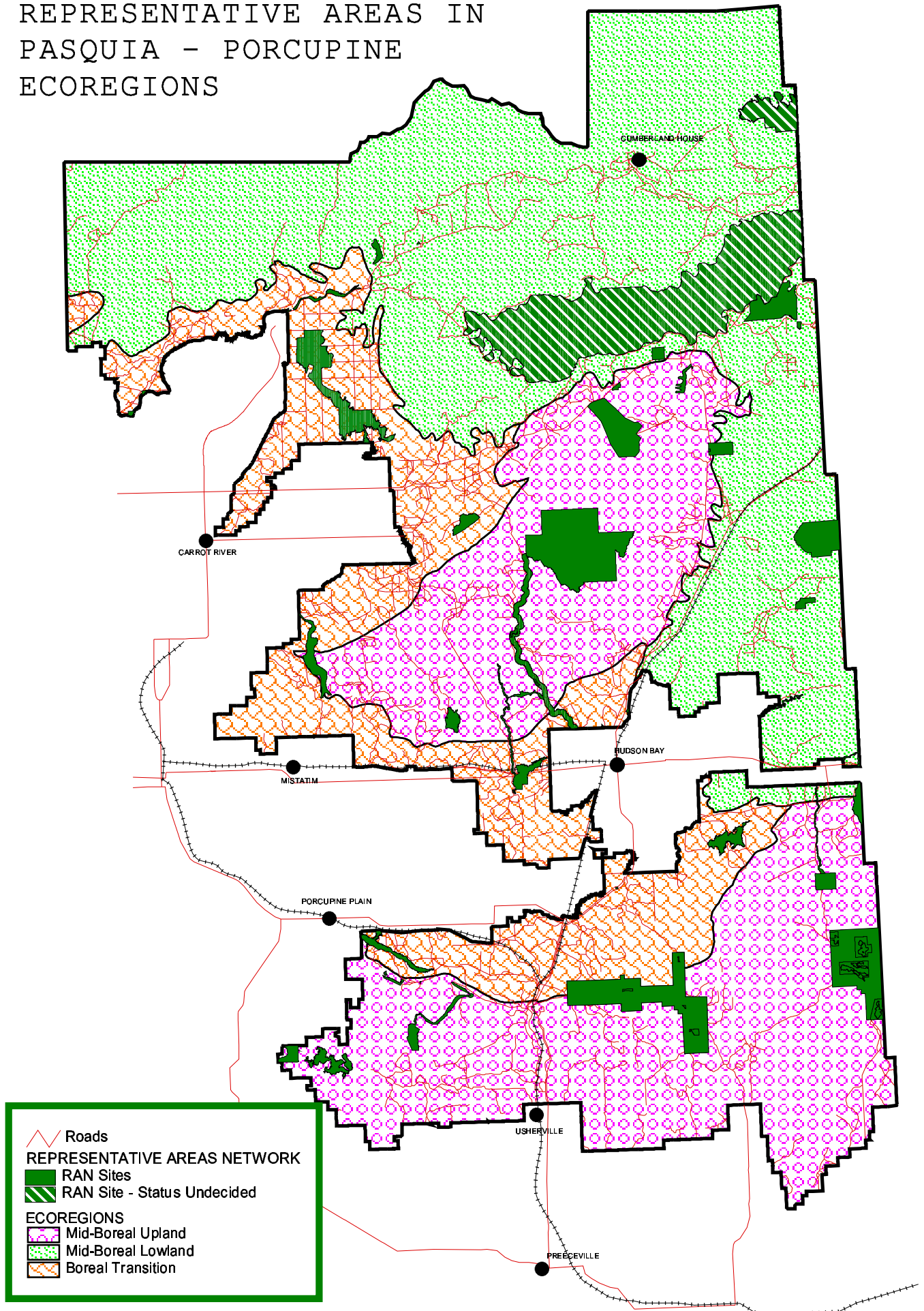


Figure 4-2

the RAN sites (Figures 2-2, 4-3 and Table 4-3) shows that they are similar, although not exact.

Table 4-3. Relative proportions of land cover and forest growth types within the Pasquia/Porcupine planning area and proposed RAN sites.

| Category | Planning Area % | RAN % |
|-----------------------------|------------------------|--------------|
| Non-Timber Producing | 41% | 51% |
| Water | 7% | 7% |
| Timber Producing/Non-Forest | 4% | 2% |
| Timber Producing | 48% | 40% |
| Growth Types | Planning Area % | RAN % |
| White Spruce | 13% | 9% |
| Black Spruce | 9% | 10% |
| Jack Pine | 1% | 1% |
| Spruce Pine | 2% | 1% |
| Tamarack | 2% | 2% |
| Pine Aspen | 1% | 3% |
| Trembling Aspen | 16% | 9% |
| Black Poplar | 4% | 4% |
| White Birch | <<1% | <<1% |
| Manitoba Maple | <<1% | <<1% |

The difference in proportions occurs largely because the planning area is not representative of the provincial boreal forest, existing protected areas, or the three impacted ecoregions, which must be considered in their entirety for Network development purposes. As well, since the Boreal Lowland Ecoregion is dominated by wetlands, it follows that a significant proportion of the selected RAN sites contain wetlands. Therefore, when taken from a planning area perspective, it appears that non-timber producing land is somewhat over-represented and timber producing land is somewhat under-represented. However, as previously noted, one of the goals of the Representative Areas Network is to achieve representation within each of the eleven ecoregions. Thus, when the new candidate areas are considered and analysed on an ecoregion basis, and in recognition of enduring features already captured within each ecoregion (through existing provincial parks and the like), adequate representation has largely been accomplished.

FOREST COVER WITHIN RAN AREAS

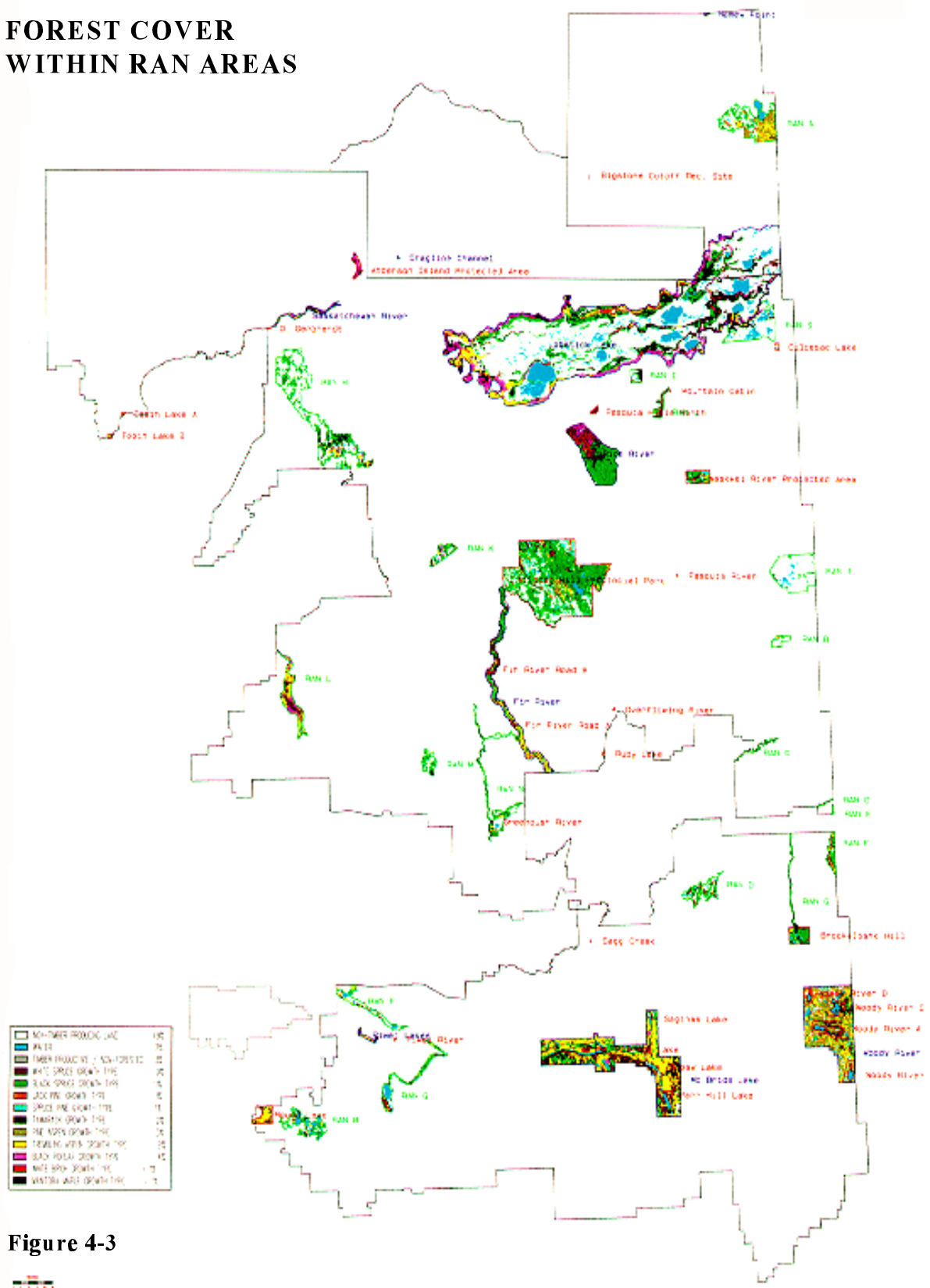


Figure 4-3

In total, 48 representative area sites were identified that make up approximately 9% of the planning area. They represent a cross-section of ecosystems including upland forests, wetlands, river riparian areas and small lake habitats. Areas considered as contributory to the RAN program include 20 new areas, chosen because of their enduring features; 12 existing areas such as parks; and 16 small recreation sites (Figure 4-1). The recreation sites are important to local communities and user groups, but are not deemed to be ecologically significant within the Representative Areas Network. For a complete listing of RAN sites, parks and recreation sites within the planning area, see Appendix 5.

4.7 Local Zoning Bylaws

The authority for zoning bylaws is given by *The Planning and Development Act*. Provisions of *The Forest Act* exempt forest management activities from zoning bylaws passed under The Planning Act, otherwise municipalities exercise considerable authority through these bylaws for development in the forest. The IRM planning process recognizes the importance of co-operation with municipalities in order to integrate municipal interests with plan policy.

4.8 Administrative Partnerships

SERM has co-management or partnership agreements in the following areas: Cumberland House, Sipanok area, James Smith Partnership area, and the Town and Rural Municipality of Hudson Bay (Figure 4-4). The Cumberland House, Sipanok and James Smith agreements are discussed in section 5.1.4.

4.8.1 Renewable Resources and Environmental Management Partnership Agreement

The agreement between SERM and the Town of Hudson Bay and The Rural Municipality of Hudson Bay No. 394 is called The Renewable Resources and Environmental Management Partnership Agreement. The partnership area includes lands and renewable resources within the Hudson Bay, Cumberland House, Carrot River and Creighton Timber Supply Areas, and covers all of the Pasquia/Porcupine land use planning area. The objective of the agreement is to develop and maintain good working relationships between SERM, Hudson Bay and the RM, through discussion and resolution of issues of mutual concern. The Agreement is an ongoing relationship subject to annual reviews.

ADMINISTRATIVE PARTNERS

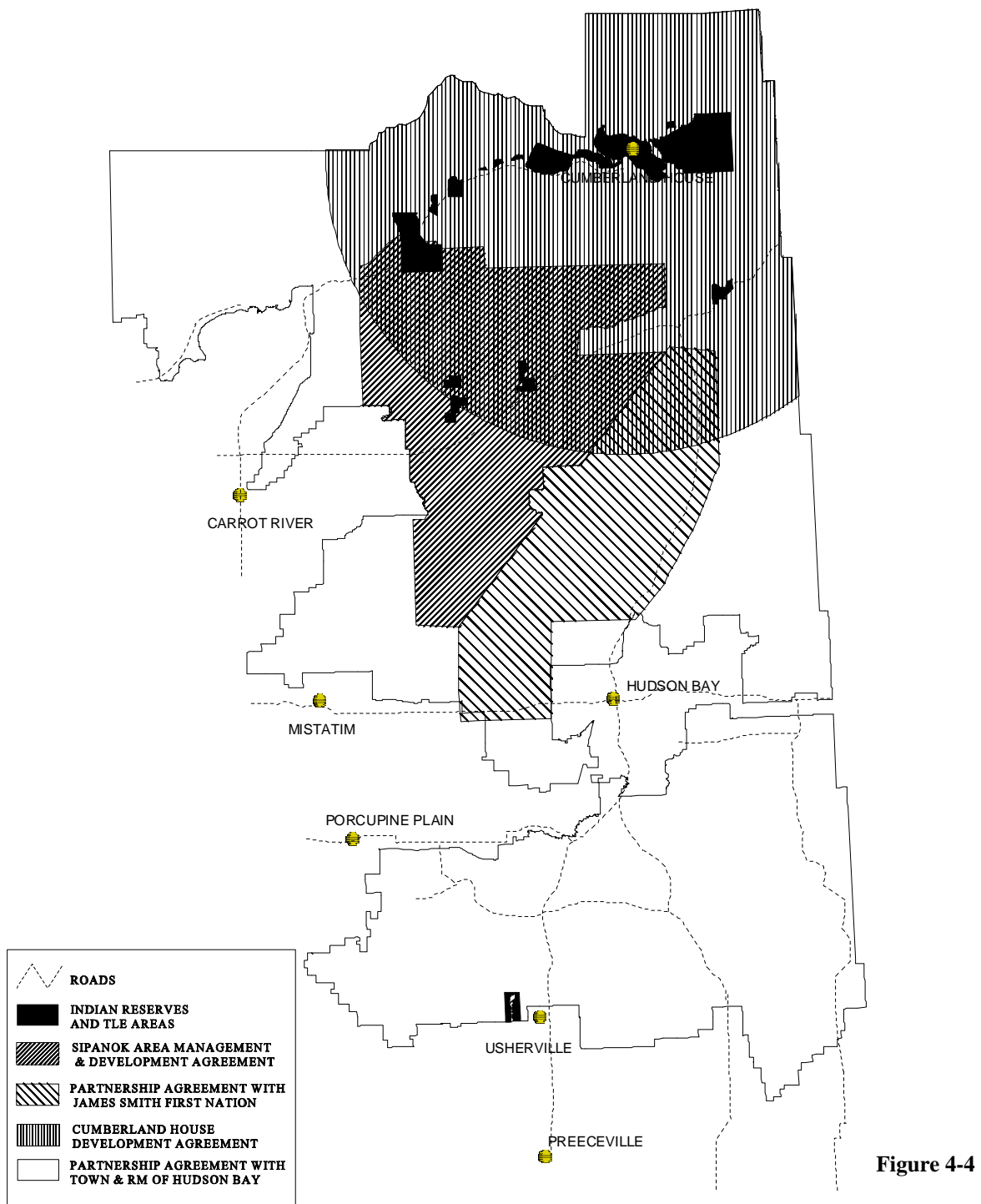


Figure 4-4

Chapter 5 HUMAN HISTORY IN THE PLANNING AREA

5.1 Aboriginal Interests

Aboriginal peoples who live in the planning area, or who have traditionally used resources of the Planning Area, are Treaty (Status) Indians, non-Status Indians and Métis. The term 'First Nations' describes those peoples who were the earliest inhabitants of the lands of Canada and with whom the treaties were entered into with the Government of Canada.

Treaty Indians are descendants from Indian people whose bands signed treaties. Status Indian means that they are registered by the federal government and have special rights and privileges as explained in the *Indian Act* and Constitution of Canada.

Non-status Indians are people who identify themselves as Indian people, but for some reason, do not have status under the *Indian Act*.

Although there is no legal definition for Métis, it is a French word meaning 'mixed blood'. Today, Métis includes people who are descendants of Indian and non-Aboriginal people. Métis are generally not registered Indians.

5.1.1 History

Human occupation in the Pasquia/Porcupine planning area dates back approximately 10,000 years. Historic populations include the Plains Cree, Swampy Cree and Saulteaux (Ojibwa) First Nations.

Traditional territories do not coincide with contemporary Manitoba-Saskatchewan provincial boundaries, or with established treaty areas. Within the planning area, Swampy Cree people lived in the northeast; Plains Cree lived in the northwest, centre and southwest; and Saulteaux people lived in the southeast. These traditional boundaries are still recognized by First Nations.

The Cree and Saulteaux peoples interacted, but maintained geographic and cultural differences. Neighbouring peoples from the north and south came into the planning area to trade: Thickwoods Cree lived immediately north of the planning area, and Assiniboine lived south in adjoining parklands.

Traditional languages differ among the various First Nation peoples. The languages used by Plains and Swampy Cree are different dialects of Cree. Saulteaux and Cree languages are distinct. Many people still speak their traditional language.

First direct contact between First Nations and Europeans occurred around 1690. Before contact, traditional land use activities included hunting, gathering and

ceremonies. The base of the Indian economy was hunting and gathering; furs were used mostly for domestic purposes such as clothing. Trapping became an important economic activity only after the establishment of permanent fur-trading posts in the area in the 1790s.

Between 1874 and 1876, the Federal government and First Nations signed treaties to address fears of conflicts arising from increasing white immigration and settlement in lands traditionally occupied by Indians. After treaties were signed, many First Nations people were resettled onto lands designated as reserve land.

Non-status Indians and Métis peoples also lived in this area. Although cultural similarities existed between Métis and First Nations peoples, each population maintained distinctions unique to their specific cultural identity.

Section 91(24) of the *Constitution Act*, 1867, placed responsibility for “Indians and lands reserved for the Indians” within the jurisdiction of the Federal Government. In 1930, the Natural Resources Transfer Agreement (NRTA), which was made part of the constitution, passed ownership of Crown lands and resources from the federal to the Saskatchewan government. The Minister of Environment and Resource Management has legal responsibility for the conservation, protection, preservation, and sustainable management of renewable resources on all Crown lands and other lands designated under the NRTA.

The signing of treaties marked the beginning of dramatic changes for Aboriginal peoples; lifestyle, language, education, economics and land use were all affected. Today, many aboriginal people gain support from the land by hunting, fishing, trapping, outfitting, forest harvesting, berry picking, gathering medicinal plants, and traditional and ceremonial pursuits.

5.1.2 Aboriginal Rights

5.1.2.1 The Treaties

Ten First Nations are associated with the planning area and these treaties. They do not all have reserves within the planning area, but have traditionally used lands within the planning area (Table 5-1). The First Nations are covered by Treaties 4, 5 and 6 (Figure 5-1).

The treaties are agreements between the federal Crown and First Nations, which define Aboriginal treaty rights through judicial interpretation (which is an on-going process), and include a fiduciary obligation on the federal Crown to First Nations peoples. This means that the Crown has a duty to act in the best interests of the Indians. The Province assures Treaty rights to hunting, trapping and fishing for food at all seasons of

APPROXIMATE BOUNDARIES OF INDIAN TREATIES

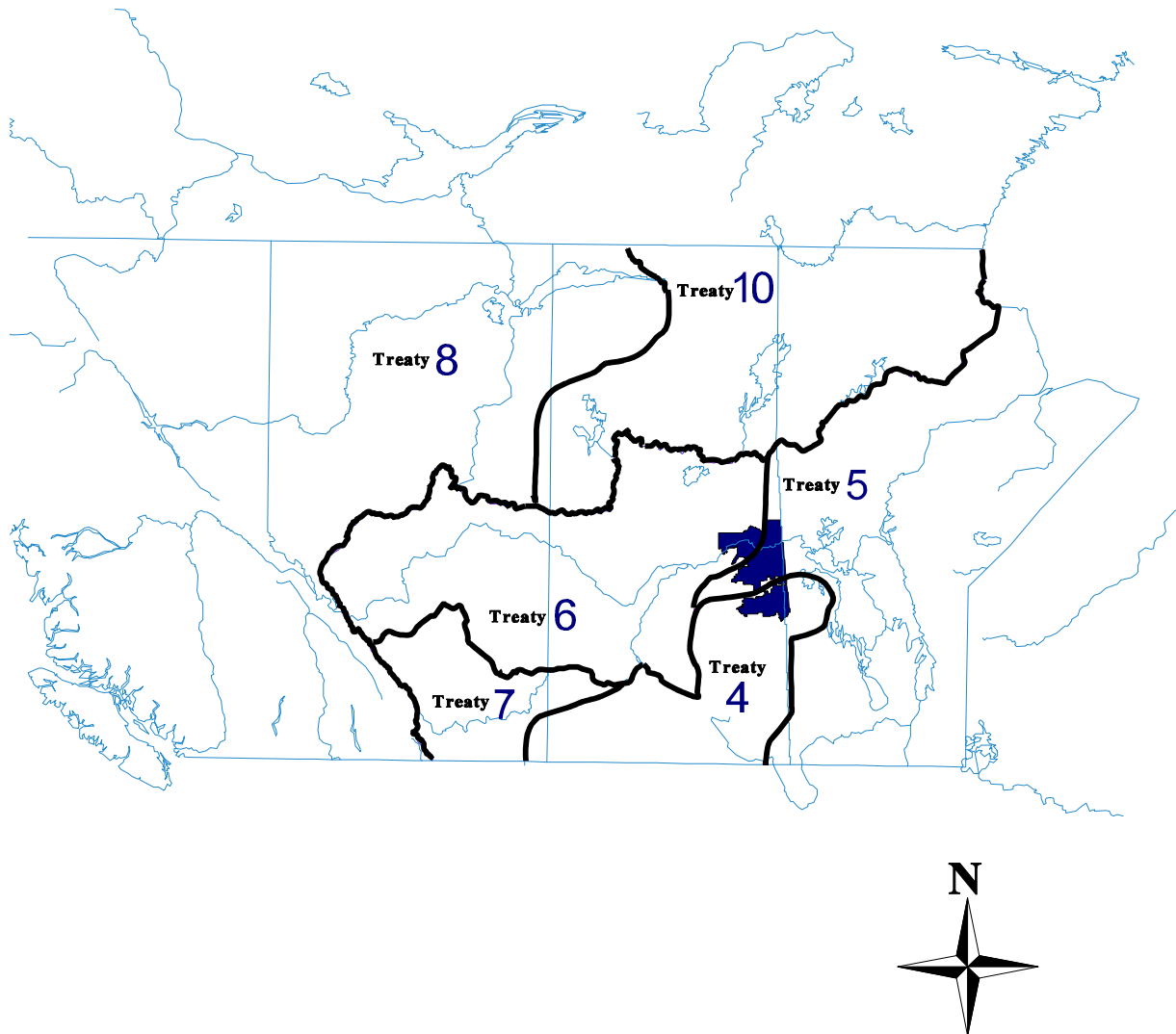


Figure 5-1

the year on all unoccupied Crown lands, and on any other lands to which Indians may have a right of access.

Table 5-1: First Nations Using the Planning Area

| Reserves Inside the Planning Area | First Nation | First Nation Heritage | Treaty Number |
|---|---------------------|------------------------------|----------------------|
| Cumberland House No. 20 | Cumberland House | Swampy Cree | 5 |
| Budd's Point No. 20D | Cumberland House | Swampy Cree | 5 |
| Carrot River No. 27A (unoccupied) | Opaskwayak | Swampy Cree | 5 |
| Carrot River No. 29A | Red Earth | Plains Cree | 5 |
| Shoal Lake No. 28A | Shoal Lake | Swampy Cree | 5 |
| Reserves Outside the Planning Area | First Nation | First Nation Heritage | Treaty Number |
| Opaskwayak (The Pas, Manitoba) | Opaskwayak | Swampy Cree | 5 |
| Pine Bluff 20A | Cumberland House | Swampy Cree | 5 |
| Pine Bluff 20B | Cumberland House | Swampy Cree | 5 |
| Muskeg River 20C | Cumberland House | Swampy Cree | 5 |
| James Smith 100 | James Smith | Plains Cree | 6 |
| Cumberland House 100A | James Smith | Swampy Cree | 6 |
| Cote 64 | Cote | Saulteaux | 4 |
| Key 65 | Key | Saulteaux | 4 |
| Keeseekoose 66 and 66A | Keeseekoose | Saulteaux | 4 |
| Yellow Quill 90 | Yellow Quill | Saulteaux | 4 |
| Kinistin 91 and 91A | Kinistin | Saulteaux | 4 |

5.1.2.2 Métis Nations and Non-Status Indians

The rights of Métis and non-status Indians are largely undefined, but do have constitutional status via Section 35 of the *Constitution Act*, 1982. Clarification of their rights and obligations of the federal government is expected through political and legal processes.

5.1.3 Aboriginal Peoples' Perspectives on Land Use

Because Aboriginal peoples possess a unique heritage and Aboriginal rights, which are not held by other Canadians, it is appropriate to recognize and discuss Aboriginal perspectives on land use. Aboriginal ties to the land are old and strong. Living intimately with the land and adapting to its environment resulted in a distinctive lifestyle and belief system. Although many Aboriginal people today have absorbed various aspects of Euro-Canadian culture, they have not lost their traditional understandings and some are looking to direct their lives with traditional belief systems.

5.1.3.1 *Traditional Understandings About Land Use*

Traditional understandings teach about land use, in ways that are often different from today's ways of doing things. The following is a summary of principles taken from *Practising the Law of Circular Interaction, First Nations Environment and Conservation Principles*, produced by Indian Governments of Saskatchewan and Federation of Saskatchewan Indian Nations in 1993.

The environment was shaped and created by the Creator, and modified by Mother Earth's forces. Mother Earth encompasses all life forms.

Animals, Plants, Water, Wind and Sun are seen as Life-giving and are considered sacred. They are not seen as natural resources. Minerals are a part of Mother Earth's being.

All life forms are interdependent. No matter how small, every life form is considered important, significant, and a contributing factor, of and to the environment. The hierarchy of existence on this planet is: the Creator, Mother Earth, Plants, Animals, and Man. The needs of animal and plant life forms come first, and are to be respected. Humanity is totally dependent on all life forms for its existence.

Indian spiritual values are based on the Law of Nature. Nature is the Indian people's greatest teacher. The Indian people understand the delicate balance of the food chain, of which they are a part. They study and know the interactions that take place within Nature. The people merge into these interactions, with as little disturbance as possible.

Mother Earth is not for sale. Mother Earth is a Life-Giving Force, and her gift of life is for everyone, not only for those who can afford it.

Any change on Mother Earth has an effect on all life forms. It is not man's place to modify Mother Earth. All Life forms adapt to Mother Earth's forces. Mother Earth's events, not human intervention, should direct the rate of succession. The supporting capacity of Mother Earth should be determined by climatic, geological, biological and/or behavioural factors and not by human intervention. Indian People do not attempt to manage Animal or Plant Life Forms. Indian People do not alter their environment to suit their needs. They adjust to the

environment. Traditionally, some mineral, animal and plant life forms, were exchanged for survival and ceremonial reasons. Hunting and Fishing were seen as survival, not recreation.

***Respect** is a key to the survival of all Animal, Plant and Human Life. The values, ethics and historical traditions of the Indian people are reflected in their ceremonies, rituals and revered attitudes towards animal and plant life forms. Conservation is based on Respect for all plant and animal life forms, and taking only what is needed.*

5.1.3.2 Aboriginal Peoples' Perspectives on Land Use Planning

When Métis and First Nation Peoples were asked about their concerns and issues regarding land use planning for the Pasquia/Porcupine area, some expressed concerns that land use planning and Aboriginal rights can not be separated, because both planning and rights are associated with the use of the land. The Canadian and Saskatchewan governments feel that land use planning and Aboriginal rights are separate issues and should be treated as such. It is not within the mandate of the Land Use Plan to interpret Aboriginal or Treaty rights outside of existing court decisions. Discussions on self-government or land jurisdiction issues need to be resolved in political and legal processes separate from the Land Use Plan.

Land use planning requires identification, acknowledgement, understanding and evaluation of all issues that are deemed important by resource users. SERM met with Métis and First Nations to learn about their concerns. The following summary attempts to describe what has been heard:

Prior to European contact, Indian cultures had a close relationship with animals and plants. Their spiritual beliefs are interconnected with all of nature. With the depletion of animals, and the restrictions from living on Indian reserves, the relationship with nature has suffered. Indian people still depend on animals and plants to supply a part of their requirements for food, medicine and clothing.

Decisions regarding wildlife are handled by local, provincial, and federal governments, and private land owners. Indian people have not been involved in the decision making.

Humanity has not taken the time to learn and understand the environment from its sources; learning is from books. Mankind has been taking without putting something back into Mother Earth. The abuse of plants and animals and the pollution of Mother Earth, must stop.

Aboriginal peoples are concerned about the well-being of their communities. Socio-economic standards of living vary among Aboriginal people, and these standards are typically lower than those of non-Aboriginal people. To recapture the health and vitality of their communities, Aboriginal people believe they must take control of their own lives. They need self-government, land, and its resources to do that.

The treaties, in the context of Canadian law, are the tools by which to gain their rights to the land. It was expressed that Treaty rights include: 1) traditional use of the land and its

resources (hunting, fishing, trapping, gathering), and 2) more control, by Aboriginal people, over the land and its resources. The traditional uses and increased control are seen as fundamental to the future well-being of Aboriginal communities. It is for this reason, that Aboriginal peoples seek to control their involvement by making decisions regarding the use of the land and its resources.

5.1.4 Relationships between Government and Aboriginal Peoples

The government enters into partnerships with Aboriginal and other impacted user groups for three main reasons:

1. to improve, develop and build the relationship between government and individual or groups of impacted users;
2. to achieve mutual goals; and
3. to jointly undertake tasks and projects.

Partnership agreements are based on Ministerial authority and deal with environment and renewable resource management, not with matters of jurisdiction, shared power or control by communities. They confer no exclusive use, control or rights over a partnership area.

Co-management is a tool SERM uses for effective environment and renewable resource management by involving groups in community-based, consensus decision-making. Inclusiveness is a principle of co-management; full representation of all resource interests must be at the co-management table. The co-management model is not a means of sharing jurisdiction or control with a local co-management board. It is not a step to Aboriginal self-government. Issues of determining, defining or clarifying Aboriginal rights, including self-government, are undertaken through legal and political forums.

There are four arrangements associated with Aboriginal communities in the planning area (Figure 4-4).

- 1) The Cumberland House Co-Management Board
- 2) The Cumberland House Development Corporation Agreement
- 3) The Sipanok Area Management and Development Agreement
- 4) Resource and Environmental Management Partnership Agreement (James Smith First Nation)

5.1.4.1 Cumberland House Co-Management Board

This co-management Board was formed in 1996, to look at cooperative management of the resources in the Cumberland House area. Its goal and mission is to integrate, to conserve, to protect and to enhance traditional renewable and non-renewable resources,

and to provide sustainable development in a responsible and co-operative manner for all people. Current initiatives of particular importance are moose, sturgeon and forest management.

The board is made up of thirteen members representing: Fishermen's Co-op, Trappers, Outfitters, Métis Society, Cumberland House Cree Nation, Cumberland House Development Corporation, Northern Village of Cumberland House, Ducks Unlimited, Off Reserve First Nations, Wild Rice Operators, Gatherers, Saskfor MacMillan and SERM.

5.1.4.2 Cumberland House Development Agreement

This is a development agreement that was negotiated among the Province of Saskatchewan, Cumberland House First Nation, and the Northern Village of Cumberland House, in 1989 to address improved socio-economic opportunities for the community. The Band and the Village created the Cumberland House Development Corporation. The Cumberland House Development Agreement involves the transfer of a total of \$13 million in annual grants over ten years, up to 50,000 acres of land within a 65 km radius from Pemmican Portage, the transfer of a \$4.6 million operating farm at Cumberland House, and various services.

5.1.4.3 Sipanok Area Management and Development Agreement

Historically, there has been a succession of fur lease agreements between the Province and Red Earth/Shoal Lake First Nations for the area since 1942. The present Sipanok Area Management and Development Agreement was endorsed by the Province and Red Earth/Shoal Lake Cree Nations, in September 1992. It is a 10-year agreement that replaces the 1979 Sipanok Management and Trapping Agreement. The agreement is being implemented through two groups:

1. A Co-Management Council (8 members):
 - < Provides representation of impacted users, sharing of information and provides advice to the Government.
 - < Council members include Red Earth First Nation, Shoal Lake First Nation, Government of Saskatchewan, Rural Municipality of Hudson Bay, Rural Municipality of Moose Range, Federation of Saskatchewan Indian Nations, Government of Canada, and a member of the public appointed by the Minister of SERM.
2. An Economic Development Board (3 members):
 - < Provides long range planning, annual reports, and sectoral sub-agreements.
 - < Shares information, and consults with other resource users.
 - < Reports to Council on all matters.
 - < Board members include Shoal Lake First Nation, Red Earth First Nation and

SERM.

The Sipanok area includes land from the southern portion of the Saskatchewan River Delta and from the northern portion of the Pasquia Hills (Figure 4-4). Portions of the Rural Municipalities of Hudson Bay and Moose Range are part of the area. The area encompasses traditional lands inhabited by Shoal Lake and Red Earth Cree Nations.

The objectives of the Agreement are:

- 1) to establish a framework for co-management;
- 2) to ensure consultation between parties;
- 3) to develop methods for First Nations' participation in resource inventory and allocation; and
- 4) to evaluate the co-management framework for wider application.

5.1.4.4 Resource and Environmental Management Partnership Agreement (James Smith First Nation)

This agreement establishes a partnership between James Smith Cree Nation and the Province. The partnership was signed in 1994. There is no expiry date; either party can withdraw with 30 days written notice.

Geographically, the agreement covers land both inside and outside the planning area. Inside the planning area, the land is situated north of the town of Hudson Bay (Figure 4-4).

Although the Partnership was requested by James Smith First Nation, it is recognized that the lands identified inside the Pasquia Hills are also used by Kinistin and Yellow Quill First Nations. The partnership does not limit these other First Nations or Métis peoples from entering into a similar partnership agreement.

The objectives of the agreement are to develop and implement cooperative environmental management of the renewable resources.

5.1.5 Data Collection on Traditional Land Use

5.1.5.1 Traditional Use Studies

Five traditional land use studies pertaining to the planning area are underway or just completed. Of the five, only the first one listed below is part of the land use planning process. The other four studies are independent of the plan.

- 1) The Pasquia/Porcupine Land Use Planning Team is consulting with Métis and First Nations to help collect geographic information on significant heritage sites in the planning area (e.g. burial sites, ceremonial grounds). Identification of

heritage sites is important to protect them from future land use activities such as forest harvesting or mining. Data collecting is an ongoing process and as new information becomes available, it will be added to the inventory list. To date, 6 ceremonial grounds and 18 burial sites have been identified.

- 2) Local people from Cote, Key and Keeseekoose bands have collected detailed information on traditional land use by Saulteaux First Nations. Most of this information is pertinent to the Pepaw Plains and surrounding areas. This information has been shared with Saskfor MacMillan.
- 3) Saskfor MacMillan has contracted Western Heritage Services Inc. (Saskatoon) to collect detailed information on traditional land use by First Nations and Métis throughout most of the planning area. Information from the Pepaw Plains is not part of this study.
- 4) Prince Albert Grand Council is funding a study in Cumberland House, to collect detailed heritage data pertaining to Cree Nations from Cumberland House.
- 5) Opaskwayak Cree Nation, from the Pas Manitoba, is working on a traditional land use study in the Pasquia/Porcupine area.

5.1.5.2 Preservation of Aboriginal Heritage Sites

Collection of heritage data is an ongoing process. To date, many heritage sites have been identified in the planning area. All sites are protected, to varying degrees, under *The Heritage Property Act*.

For the purposes of the land use plan, heritage sites are classified into two general categories: 1) highly sensitive and 2) sensitive. Proponents of any land development will be required to undertake a screening process, to determine which heritage sites are in the area of consideration.

Highly sensitive sites include sacred sites, burial grounds, ceremonial grounds, traditional gathering places, and some homestead sites. Buffer zones will be placed around these sites and they will be fully protected from any surface disturbances.

Sensitive sites may include ancient habitations and encampments, hunting stations, animal kill sites, quarry and stone tool manufacturing sites, and other localities showing evidence of past human activity, including historic settlement and land use. Such sites typically contain artifact and bone scatters, fire broken rock, and other domestic refuse. Palaeontological localities may also be considered sensitive heritage sites. Land use and development may be permitted in areas containing sensitive sites subject to the satisfactory completion of impact assessment and management studies.

5.1.6 Lands of Special Interest to Aboriginal Peoples

In addition to Indian Reserves, a number of lands are of special interest to First Nations. They are:

- C Birch River Settlement;
- C Cumberland House Development Corporation Properties;
- C Treaty Land Entitlement Selections;
- C Highly Sensitive and Sensitive Heritage Sites.

Birch River Settlement, south of Cumberland House, is a former reserve that was occupied at the end of the 19th century. Residents left the area because of flooding, and moved to neighbouring communities. Afterwards, Métis moved into the area for several decades, but they too abandoned it. The Métis portion of the former reserve has been set aside. Its status is still uncertain.

5.1.6.1 Saskatchewan Treaty Land Entitlements (TLE)

Treaties signed by the Federal Government and local Indian bands around the turn of the century provided for continuation of the Aboriginal lifestyle and included promises of a land base on which to live. Most bands were given land and reserves were established. Several bands, however, were not given the full amount of land originally promised. Today's governments are attempting to fulfil those promises through a treaty land entitlement program negotiated in the Saskatchewan Treaty Land Entitlement Framework Agreement.

In the Framework Agreement, signed in September of 1992, the federal and provincial governments, and 26 Treaty First Nations of Saskatchewan agreed to a process. In Saskatchewan, bands are able to buy up to 1.6 million acres of private and/or Crown lands to be designated as reserves. Bands may buy land anywhere in the province, including cities and towns. Most categories of Crown land are eligible for purchase. Because of their importance for all Saskatchewan residents, provincial parks, heritage properties, highways, ecological reserves, and other sensitive land areas will be made available only in exceptional circumstances.

All land deals will be negotiated on a 'willing seller/willing buyer' basis. The agreement provides money to the bands, to be paid out over a number of years, to purchase lands and minerals.

Classification of land ownership of transferred land will be decided by each band. The land may be held as federal land in trust for individual Bands, and fall under the same management as existing Reserve lands. Bands may also consider purchasing land in the name of the Band. In this instance the land would be considered an investment outside Reserve land and may not enjoy the same benefits as Reserve land.

Details about resource rights have yet to be resolved. Timber resources associated with land transactions are included in the purchase formula in the north, and will become a resource of the Band. Other resources, such as water, may fall under co-management agreements, details of which have yet to be determined. Provincial Crown minerals not needed for public purposes will be made available to entitlement bands purchasing the land surface.

In the Planning Area, two Bands have selected areas: 1) Peter Ballantyne No. 816.10 (Belanger Lake), and 2) Okanese No. 816.10 (Mann Lake). Final status of the selections will depend upon successful completion of the TLE process.

5.2 Euro-Canadian Interests

The majority of non-Aboriginal peoples who migrated to the planning area were of European descent. The first Euro-Canadians came in the late 1600s because of the fur trade. Later, in the early 1900s, the principal reasons for occupation and settlement changed from furs to forestry and homesteading.

In 1691, Henry Kelsey, an employee of the Hudson Bay Company, travelled with Cree Indians in the planning area and provided the first known written account of the area. In the 1700s lands within the planning area were part of a larger area known as Rupert's Land; rights to the natural resources were deeded to the Hudson Bay Company by the King of England. In 1869/70 the deed to Rupert's Land was surrendered by the Hudson Bay Company and transferred to the Dominion of Canada; at that time, the federal government gained responsibility for the natural resources. The Porcupine Forest Reserve was established in 1906 and the Pasquia Reserve in 1914. In 1931, control of all natural resources was transferred from the federal to the provincial government.

With the transfer of lands and minerals in 1931, a "lands branch" was formed under the provincial Department of Natural Resources. Over time, the administration of the province's resources transferred to different departments for administration. Saskatchewan Energy and Mines now administers the mineral rights in the province, Saskatchewan Agriculture and Food administers the Crown held agricultural lands in the province, and SERM administers special interest lands, parks and the Provincial forests including the Pasquia/Porcupine planning area.

5.2.1 The Fur Trade

The earliest fur trade posts in the planning area were established in the mid-1700s on the Saskatchewan and Red Deer Rivers, but were later abandoned. In the late 1760s, a network of new posts were established, and in the 1790s various alliances that had formed among these posts joined to form the North West Company. In 1774, the Hudson Bay Company established its first inland trading post in Cumberland House, which became the administrative centre for the Hudson Bay Company's inland trade until 1821. The Hudson Bay Company actively competed with the North West Company, but in 1821, The Hudson Bay Company and the North West Company united and operated under the Hudson Bay

Company name. All of the trading posts closed by the early 1900s, except for Cumberland House. In 1987 the Cumberland House post changed names to the North West Company Inc.

5.2.2 Transportation

Transportation in the early days was by horse, boat, dog sled and foot. Trails were established and later, when major roads were built, some of the old trails were utilized. Ancient beach ridges, located at the bases of the Pasquia and Porcupine Hills, which often formed the only high ground in the area, were used as travel lanes by Aboriginal peoples. Some of these ridges were later used for roads and railroads; Highway #9, north of Hudson Bay to Overflowing River, is an example of this.

Provincial highways were built in the 1940s and 1950s. Other roads (gravel) developed beginning in the 1940s, and development continued in response to increased commercial activities.

Cumberland House was an important depot on the trading route between Edmonton and Winnipeg, until completion of the railroad branch lines. York boats were used in the Cumberland House area during the 1800s to distribute goods further north along the Cumberland House waterways. In the 1880s, the Hudson Bay Company began to use sternwheeled boats on the Saskatchewan River between Winnipeg and Edmonton.

Since the early 1900s trains have been used to transport lumber and wood products. The Canadian Northern Railway Company (which was later called the Canadian National Railway Company) constructed rail lines in the planning area in the early 1900s. The line from Swan River, Manitoba to Melfort (through Erwood) was completed by 1905. The Hudson Bay line to The Pas was officially opened in 1910, and an extension of that line, to Port Churchill, was completed in 1929. The line from Hudson Bay to Sturgis was completed in 1928.

5.2.3 The Timber Industry

Since the early 1900s, the timber industry has been prominent in the planning area. When railroads were built, lumber and wood products were the largest part of the train freight going south.

The first lumber company began operations in the winter of 1901-02. Oxen and horses were used to skid and haul logs. Logs were driven down rivers in the spring to lumber mills. Such rivers included the Sipanok and Carrot Rivers in the north and the Red Deer, Little Swan, Etomami and Piwei to the south. Throughout the years, harvesting methods changed from selective logging to clearcutting. Harvesting equipment changed from horses to heavy equipment and from river transport to large trucks. The most commonly harvested tree species changed from white spruce to white spruce and aspen.

Many lumber companies of varying sizes operated in the planning area during the first half of the century. Key operators include The Pas Lumber Company, Simpson Timber, Saskatchewan Forest Products and MacMillan Bloedel. The Pas Lumber Company harvested from 1921 to 1954. Simpson Timber operated from 1965 to 1990; they built and operated a stud mill in Hudson Bay, as well as supplying Saskatchewan Forest Products with white spruce for their sawmill and plywood plant. An aspenite plant was built by Wizewood in 1960, it burned in 1963, and was purchased by MacMillan Bloedel in 1965. Saskatchewan Forest Products Corporation has operated a sawmill at Carrot River and a plywood plant at Hudson Bay since 1976. MacMillan Bloedel and the Saskatchewan Government formed a partnership (Saskfor MacMillan) in 1995 to harvest and mill trembling aspen for the production of oriented strandboard.

5.2.4 Agriculture

In Cumberland House, people were small-farming by the 1830s. Community farming was established there after World War II.

Settlers bordering the Pasquia and Porcupine Hills were homesteading by the 1880s. Many people depended on other activities in addition to agriculture such as hunting, trapping and lumbering.

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APPENDICES - SUMMARY

The appendices contain documents that provide backup information for a variety of topics and issues that are discussed in the management plan and the background section of the plan. The following is a list of the appendices:

Appendix 1: Common and Scientific Names of Plants and Wildlife Species

- < Plants and animals that are referred to in the Land Use Plan

Appendix 2: Forest Management Advisory Committee Consensus Items

- < Consensus items related to discussion of land use planning
- < Consensus items related to Forest Management Agreement issues

Appendix 3: Relevant Legislation

- < Provincial Legislation
- < Federal Legislation

Appendix 4: Provincial, National and International Agreements and Strategies

- < Conservation Strategy for Sustainable Development in Saskatchewan
- < Saskatchewan Long-term Integrated Forest Resource Management Plan
- < Saskatchewan's Forest Management Policy Framework
- < Forest Fire Protection Agreements
- < Canada-Saskatchewan Partnership Agreement in Forestry (PAIF)
- < National Forest Strategy and Canada Forest Accord
- < National Round Table on the Environment and the Economy
- < Canadian Biodiversity Strategy
- < Whitehorse Mining Initiative
- < UNCED Convention on Biological Diversity
- < UNCED Statement of Principles on Forestry
- < United Nations Framework Convention on Climate Change (1992)
- < Santiago Declaration
- < Surface Lease Agreements
- < Human Resource Development Agreements

Appendix 5: Proposed Representative Areas Within The Pasquia/Porcupine Planning Area

Appendix 6: Interim SERM Grazing Policy

- < Livestock Grazing in the Provincial Forest
- < Application for Grazing Permit

Appendix 7: Ecotourism

- < Draft Guidelines
- < Proposal/Application

Appendix 8: Snowmobiling

- < Trail Planning Process
- < Trail Development Principles
- < Snowmobile Trail Guidelines

Appendix 9: Birds of the Pasquia/Porcupine Hills

- < Species
- < Farm Status and Forest Status

Appendix 10: Summary of Public Input

GLOSSARY

adaptive management - management practices that are monitored, evaluated and adjusted (as required), based on current knowledge and understandings.

annual allowable cut (AAC) - an expression of the maximum volume of timber that may be harvested each year from an area of land.

aspen parkland - zone of transition between boreal forest and drier grassland to the south, characterized by patches of aspen grove and patches of grassland.

benchmark - something that serves as a standard by which others may be measured.

boreal forest - the Canadian boreal forest is part of a vast landscape of trees that encircles the Arctic circle. 1/3 of Canada is covered by boreal forest. A major role of the boreal forest is maintaining the health of the atmosphere. The boreal forest is dominated by spruce, fir, pine, larch, poplar, and birch.

biological diversity (or biodiversity) - the variety of different forms of life, including variety of genes, species, and ecosystems.

browse - leaves and twigs of trees or shrubs, used as food by plant eating animals.

calcareous - containing calcium carbonate.

ceremonial areas - areas of importance for traditional ceremonies of Aboriginal peoples.

clastic - composed of broken pieces of older rocks.

clearcutting - a method of harvesting timber in which all the trees are removed in a certain area of a forest, providing full sunlight.

co-management - is a tool SERM uses for effective environment and renewable resource management by involving groups in community-based recommendations, based on consensus. Inclusiveness is a principle of co-management; full representation of all resource interests must be at the co-management table. The co-management model is not a means of sharing jurisdiction or control with a local co-management committee.

conifer - trees that bear cones and have needle-like leaves.

cretaceous - period in geological history representing the end of the Mesozoic Era. The end of the Cretaceous is marked by the extinction of dinosaurs.

crown land - land under the tenure of the provincial or federal government.

deciduous - trees that drop their leaves.

development - The carrying out of any building, engineering, mining or other operations in, on or over land or the making of any material change in the use or intensity of use of any building or land.

dolomite - mineral or rock of calcium magnesium carbonate.

ecological integrity - the structure and function of the ecosystem are unimpaired by human caused stresses, the native species are present at viable population levels.

ecological land classification (ELC) - a system by which land units are identified and mapped, based on ecological features such as climate, soil, and vegetation.

ecological region (or ecoregion) - a relatively large area of land characterized by a distinctive regional climate as expressed by general patterns of vegetation.

ecosite - a relatively small area of land which is relatively homogeneous with respect to parent material, soil type, moisture and nutrient regime, and composition and productivity of vegetation.

ecosystem - an area of land or water, considered in relation to all of its components (soil, water, air, plants, animals, microbes) and the interactions among them. A forest stand is an ecosystem, if it is viewed as an interacting system of all of these components, and not just as a group of trees.

ecosystem health - a natural balance of physical, chemical, and biological components that make up the ecosystem.

ecotourism - is respectful, environmentally responsible travel to relatively undisturbed and uncontaminated natural areas, with the objectives of studying, admiring and enjoying the scenery, wild plants and animals, and cultural features.

even-aged - describes a forest stand in which trees are of approximately the same age.

exotic - describes a species not native to a given area, introduced from elsewhere.

extensive management - management of large areas with relatively low investment of time and money per unit area. Extensive forest management generally implies protection from fire and reliance on natural regeneration.

fertilization - application of fertilizers to increase productivity.

forbs - a non-grasslike herbaceous plant (lacking a woody stem).

Forest Management Agreement (FMA) - agreement between the Province of Saskatchewan and a forest company to give the company long-term access to timber as well as management responsibilities on a specified area of land.

forest fringe - zone along the southern edge of the boreal forest, extending from Meadow Lake to Prince Albert to Nipawin to Hudson Bay, which was originally forested but now has been partly cleared for agriculture.

geographic information system (GIS) - a computer system used to store and analyse map information.

green strip - band of vegetation of low flammability designed to retard the spread of fire.

hardwood - wood from a broad-leaved tree (e.g. poplar, birch), or a stand dominated by broad-leaved trees.

harvest volume schedule (HVS) - expression of the maximum timber volume that can be depleted each year by both harvest and fire. It is calculated as standing volume at or above rotation age, divided by rotation age, plus the long-run sustained yield of stands not yet mature.

integrated land and resource management - management of the whole ecosystem, which allows for a broad range of resource uses, and gives all affected parties the opportunity to be involved in management planning.

intensive management - management with relatively high investment of time and money per unit area; intensive

silviculture generally implies such things as intensive site preparation, use of genetically improved planting stock, weeding, thinning, or pruning.

kimberlite - geological formation in which diamonds may be found.

landscape - an area of land which includes a variety of interconnected ecosystems. For example, a hummocky area with aspen forest on the uplands and sedge meadows in the depressions.

long-run sustained yield (LRSY) - theoretical annual harvest level for a fully regulated forest, calculated by multiplying the total area by the average yield per unit area at rotation age.

mature - describes trees that are fully developed so that they are capable of reproducing. In the forest industry this term describes a tree or stand that is sufficiently developed to be harvested.

merchantable - describes a tree or stand that has attained sufficient size, quality, and/or volume to make it suitable (in economic terms) for harvesting.

mitigation - to reduce the severity of or eliminate negative impacts resulting from a particular activity

mixedwood - forest stand with both hardwoods and softwoods present in significant amounts.

mycorrhizal association - association of a fungus with the root of a plant, in which organic products from the plant nourish the fungus, and the fungus helps in uptake of soil nutrients by the plant.

nodular concretions - rounded or irregular masses of mineral material sharply separated from and harder than the beds in which they occur.

nonvascular plants - plants such as mosses, lichens, and algae, which have no tissue for conducting water from roots up to shoots.

not satisfactorily restocked (NSR) - describes productive forest land on which the forest has been cut or burned and not adequately regenerated.

ordovician - the second palaeozoic period, below Silurian and above Cambrian.

palaeozoic - geological era from the end of the Precambrian to the beginning of the Mesozoic. Contains the oldest forms of highly organized life (reptiles, seed-bearing plants, etc.)

partial cutting - any timber harvest in which only part of the stand is cut.

partnerships - in Saskatchewan Environment and Resource Management policy, 'partnerships' are formed between the department and stakeholders to work toward a common goal. Three kinds of partnerships, or combinations among them, are most often used:

- < consultative partnerships - where there is discussion on an issue, plus shared responsibility for accountability, commitment, integrity, and outcome.
- < task partnerships - where there is shared work in developing a product, program, or process.
- < sponsorships or contributory partnerships - where shared finances result in a shared product or program.

placer - a mineral deposit found on or just below the surface which is formed by the mechanical concentration of mineral particles from weathered debris. The concentrated minerals are usually heavy minerals such as gold.

planting - establishing a forest stand by setting out seedlings, transplants, or cuttings.

productive forest land (or timber-productive land) - land capable of producing merchantable stands of timber within 'a reasonable length of time'.

protected area - an area protected by legislation, regulation or land use policy to control human occupancy or activity (Aird, 1994).

RAN - Representative Areas Network is composed of lands and waters selected and designated to represent the natural ecological and biological diversity of the province and managed to retain that diversity. RANs act both as reservoirs of biological diversity and benchmarks for comparison with the more heavily utilized landscape.

regeneration - renewal of a forest area (i.e. establishment of new young trees) by natural or artificial means.

riparian zone - zone of vegetation found between aquatic (rivers, creeks, lakes, sloughs, potholes, hay meadows and springs) and terrestrial (upland) ecosystems.

rotation - the planned number of years between the regeneration of a forest stand and its final harvest.

scarification - loosening the topsoil or breaking up the forest floor, in preparation for regeneration by natural or artificial seeding.

seeding - establishing a forest stand by sowing of seeds.

silica flux - silicon dioxide mixed with metal, etc. to promote fusion in the smelting process.

silurian - palaeozoic period above Ordovician and below Devonian. Marked by the appearance of the first land plants and jawed fish.

silviculture - the theory and practice of controlling the establishment, composition, growth, and quality of forest stands to achieve management objectives.

site - an area of land characterized by the climatic, soil, and biological factors that determine its suitability and productivity for particular tree species and vegetation types. For example, a dry sand plain which supports jack pine-lichen vegetation with low productivity.

site preparation - treatment (mechanical, chemical, fire, or hand) that modifies the site to provide favourable conditions for natural or artificial regeneration.

softwood - wood from a conifer tree, or a stand dominated by conifers.

stakeholders - Stakeholders include all people, groups, or organizations that are directly influenced by actions of government or whose actions have an influence on the government.

stand - a patch of forest which is fairly uniform in species composition and distribution of tree heights and ages.

subsistence use - use of forest resources (e.g. fish and game, food and medicinal plants, fuelwood and building timber) by local people for personal consumption.

succession - the sequence of stages through which an ecosystem develops, following some disturbance which alters part or all of the previous ecosystem. For example, after a fire burns a mature forest, the ecosystem passes through a series of successional stages leading up to a new mature forest.

sustainable development - a general approach to combining economic development with environmental protection that ensures the ecological integrity of ecosystems, and that has been described as "...use of resources in a way that

satisfies the needs of today without compromising the ability of future generations to satisfy their needs”.

sustainable management - management to maintain and enhance the long-term ecological integrity of forest ecosystems, while providing economic, social, cultural and spiritual opportunities for the benefit of present and future generations.

till - stiff clay containing boulders, sand, etc.

traditional territories - traditional territories are those lands that were historically used by particular Aboriginal peoples prior to European settlement.

uneven-aged - describes a forest stand in which intermingling trees differ markedly in age.

zero impact mineral exploration - mineral exploration activities that do not significantly disturb the natural landscape. This includes such activities as: geological mapping, prospecting, surveying, flagged reference lines, geochemical sampling by hand (soil, stream sediment, water, lake sediment, rock), and airborne and hand-held ground geophysical surveying. Excluded activities would include: cut reference and grid lines, road or trail construction, trenching or stripping activities, geochemical sampling and geophysical surveying with tracked or wheeled equipment, and diamond drilling.

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