

COLD LAKE

SUBREGIONAL INTEGRATED RESOURCE PLAN

**Approved by Cabinet
on May 7, 1996**

**1996
Edmonton**

Publication No: I/429
ISBN: 0-86499-749-3

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Big Bend Subregional Integrated Resource Plan
Lakeland Subregional Integrated Resource Plan

PREFACE

This planning document was prepared by government agencies and public consultants in recognition of the need for improved management of Alberta's lands and resources. It applies only to public lands within the Cold Lake planning area, not to private or federal lands.

The plan presents the Government of Alberta's resource management policy for public lands and resources within the area. It is intended to be a guide for resource managers, industry and the public with responsibilities or interests in the area, rather than a regulatory mechanism. Resource potentials and opportunities for development are identified with a view to assisting in the economic progress of Alberta. The plan is sufficiently flexible so that all future proposals for land use and development may be considered. No legitimate proposals will be categorically rejected. Energy resource decisions are subject to the application of regulatory approval processes under the jurisdiction of the Minister of Energy. This plan may influence regulatory decisions, but will not result in the categorical approval or rejection of energy proposals.

The provincial government is committed to serving Albertans; should a proposal not be in keeping with the provisions of the plan, staff will work with the proponent to explore alternative means for accommodating the proposal in a more appropriate location, either in this planning area or on other public lands. The rejection of any proposal will be done only in writing by the Minister of Environmental Protection or his designate.

A detailed outline for implementation will be provided for this subregional plan in order to identify the necessary implementation actions and roles. This implementation outline will also provide for the periodic review of the plan so that it may accommodate changing needs and situations. Wherever possible, the private sector will be provided with the opportunity to be actively involved in the operational delivery of the plan.

Implementation is subject to the normal budgetary approval process. In establishing overall priorities, opportunities in other planning areas and areas currently outside the planning process will be considered.

While the plan identifies resource potentials and opportunities, the realization of these may require the dedication of major amounts of public funds. The plan will be used on the understanding that any actions required for implementation will only be undertaken as budgetary approvals are given in the normal way. The private sector will be given the first opportunity to provide any development required.

This plan has no legal status and is subject to revisions or review at the discretion of the Minister of Environmental Protection.

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1.0 INTRODUCTION

1.1 Planning Area

The Cold Lake planning area (Figures 1 and 2) is located in northeastern Alberta, and covers approximately 8400 km² (3244 sq. mi.), 45 percent of which is public land. The planning area contains four towns and one village, and includes portions of the Municipal District of Bonnyville #87, the County of St. Paul and the County of Vermilion River. It also encompasses portions of the Beaver, Sand and North Saskatchewan river watersheds, part of Forest Management Unit L01, and Elizabeth and Fishing Lake Metis settlements. As well, the Cold Lake, Kehiwin, Puskiakiwenin, Unipauheos and part of the Makaoo Indian reserves lie within the planning area. Overall, it is bounded as follows:

- in the east by the Saskatchewan border;
- in the south by the North Saskatchewan River;
- in the north by the southern boundary of the Cold Lake Air Weapons Range; and
- in the west by the Lakeland subregional integrated resource planning area, MD 87 and Highway 41.

This plan excludes Indian reserves and Metis settlements, and any other federal or private lands.

1.2 Plan History and Process

The Cold Lake plan was identified as a priority in the 1985-86 integrated resource planning program, mainly because of the development of heavy oil and oil sands resources in the area. It was initiated in January 1986.

An interdepartmental planning team was coordinated by Strategic and Regional Support Division of Alberta Environmental Protection. The planning team consisted of representatives from the management agencies of Alberta Environmental Protection (Land and Forest Service, Natural Resources Service - Parks, Natural Resources Service - Fish and Wildlife, Natural Resources Service - Water Resources), Alberta Agriculture Food and Rural Development

(Public Lands Branch), Alberta Energy (Mineral Resources Branch), Alberta Economic Development and Tourism, Alberta Community Development (Cultural Facilities and Historical Resources Division) and Alberta Energy and Utilities Board. Management agencies providing consultation services to the planning team included Municipal Affairs and Alberta Transportation and Utilities.

The planning team's first step was to prepare the terms of reference. That document was endorsed by the Resource Integration Committee (RIC) in February 1987. It describes the planning area, the plan purpose, the resource management concerns and issues, and briefly explains the planning process.

Once the terms of reference had been completed, the planning team began data collection and analysis. During that stage of the planning process, resources in the planning area were analyzed and evaluated in terms of their capability to sustain use, the current level of use and the demand for each resource, the potential for future development, and the objectives and policies of participating agencies.

After data collection and analysis were completed, the planning team began developing the policy that would accompany the plan. The Cold Lake Resource Management Policy, the first stage in producing the plan, was developed by the planning team, endorsed by the Northeast Boreal Environmental Resource Committee (April 1987) and the Resource Integration Committee (May 1, 1987) and distributed to interest groups for comment (May 1987). The policy included broad resource management objectives for the overall planning area, a designation of resource management areas and intent statements for each of these areas.

Interest groups responded with their views on the Cold Lake Resource Management Policy. The draft plan was prepared based on information received from the interest groups, further examination of resource information, the refinement of agencies' objectives and direction from senior government officials.

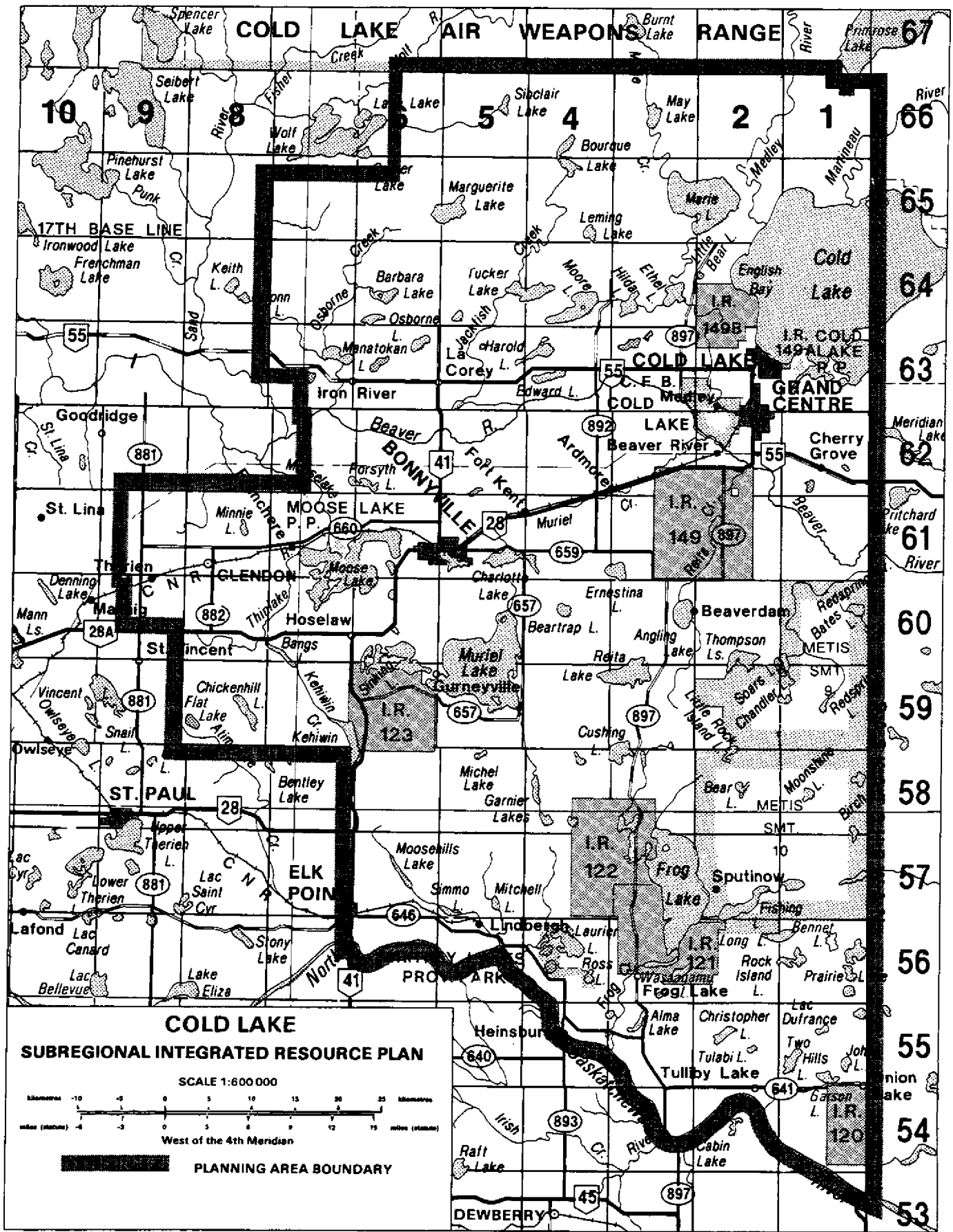


Figure 2. Cold Lake Planning Area.

The draft plan was reviewed by the public in March 1991. A round table meeting was held in St. Paul and three formal public reviews took place in Grand Centre, Bonnyville and Elk Point. The draft plan was revised using public input from these reviews, as well as from briefs and letters.

The draft plan was endorsed by several senior interdepartmental provincial government committees before approval by the Minister of Environmental Protection and Cabinet.

1.3 Plan Purpose

The purpose of this plan is to promote the coordinated management of public land and resources within the Cold Lake planning area to achieve maximum economic, environmental and social benefits for Albertans, now and in the future.

These benefits are achieved by allocating the various resources of the area, based on their capabilities and provincial government agency requirements, and by providing direction to these agencies by means of general and specific objectives and guidelines. All resource management conducted by provincial government agencies must conform to the plan.

The plan applies only to public land and natural resources in the planning area, and not to private land, Metis settlements, Indian reserves or other federal land. Private development on public land requires development permits from the local municipal authority, which can be issued only if the proposed development conforms with existing municipal land use by-laws or land use orders and related planning documents.

1.4 Plan Organization

Section 2.0 provides a framework of broad resource management strategies for the entire planning area, separated according to specific resource management headings. The natural resources in the Cold Lake area are described briefly according to their capability, current and future uses and demand. In addition, problem

areas are identified. Based on this information, broad resource management objectives and guidelines have been developed, which have general application throughout the planning area.

Section 3.0 identifies nine resource management areas (RMAs) in the Cold Lake area for more detailed management. An intent statement and detailed resource management objectives and guidelines are established for each RMA.

Section 4.0 provides a general discussion on administrative structures necessary for plan implementation, review and amendment.

A Glossary is included to assist with the more technical terms used in this document.

2.0 RESOURCE MANAGEMENT STRATEGY FOR THE COLD LAKE PLANNING AREA

The resource management strategy for the Cold Lake planning area consists of a broad management outline coupled with strategies for each resource, including primary intent statements and a set of broad resource management objectives and guidelines. Generally, the statements of primary management intent provide a policy framework that sets direction for resource management in the planning area.

A resource management objective states the desirable condition for a resource or resource use that can be achieved through management action. A resource management guideline describes a management action or a level of resource use that contributes to achievement of resource management objectives. The guidelines also ensure that specific resource objectives are integrated more efficiently and effectively within the area.

The broad management strategy for the Cold Lake planning area will focus on using the area's natural competitive advantage, building upon the significant resources that are its major strengths: energy, agriculture, forestry and recreation. More specifically, the plan provides for optimal development of oil sands

resources; that is, development in a manner that does not compromise the natural environment or other resource uses. Particular care is taken to protect attributes such as water, fisheries, wildlife and aesthetics, along with recreation facilities, that make the planning area valuable for wildland and water-based recreation.

The resource management strategy will be based on a 20-year time period. Consequently, planning for the subregion is shaped by the need to accommodate short-term gain within a framework of long-term management. This results in priority being placed on renewable resources and their long-term, sustained-yield management. This is particularly important for water resources, on which many of the resource objectives within the planning area are based. Shorter-term, nonrenewable resource development will be accommodated in the planning area while ensuring the integrity of the renewable resources is not compromised. A commitment has therefore been made to the fundamental principles of conservation, particularly as they relate to renewable resource use. Resource development may occur throughout the planning area, provided ecological diversity and healthy ecosystems are maintained, significant resources are protected and environmental degradation is minimized. These fundamental limitations override all development efforts and their individual or cumulative impact.

2.1 General Management

The following general objectives and guidelines are not specific to any particular resource. They apply to many resources or resource uses, and should be applied where appropriate.

General Management Objectives

1. To maintain the diversity and healthy operation of ecosystems.
2. To minimize environmental degradation.
3. To protect and conserve soil resources and prevent soil erosion in the watersheds.
4. To ensure an appropriate mix of reclamation

techniques are used, in recognition of the land's original productivity and diversity and its potential to provide multiple benefits.

5. To protect life, property and natural resources from wildfire.

General Management Guidelines

1. Environmental degradation will be minimized through ongoing education and promotion of environmental awareness, adoption of environmental standards and enforcement programs, and use of referral systems.
2. Land use activities and operations should be planned and located where environmental disturbance is minimal.
3. Surface land use disturbances should be reclaimed as soon as possible to minimize erosion and sedimentation.
4. Reclamation should reflect specific RMA intents and/or land allocations, as specified in this plan.
5. Air quality will be maintained in an acceptable state through continuous consultation, monitoring programs, and established regulations and standards, particularly for handling emissions from various oil sands sites.
6. Fire protection will be carried out in accordance with provincial legislation and Land and Forest Service policy. The review of resource and land development proposals or projects will include fire protection assessments through the Forest Protection Branch, Land and Forest Service as part of the internal referral systems of the provincial government. Assessments will identify high-value sites, and land and resource uses that could affect the fire hazard or require special forest protection efforts, and will address public safety aspects of developments in the Forest Protection Area. Land use-related projects and developments will be designed in consideration of the goal to minimize fire hazard and risk.

7. Spring burning of brush piles and other lower priority agricultural burning on public land will be minimized until "green-up" of the area occurs. Local municipalities will be encouraged to apply the same principle to private land. Prescribed burning as a management tool for range and habitat enhancement will be permitted, subject to existing referral processes.
8. The Public Lands Branch will inform municipalities in advance of authorized burning to help them be better prepared.
9. Alberta Transportation and Utilities will be consulted by the Land and Forest Service and the Public Lands Branch before authorization is given for burning adjacent to primary highways, or when consideration is given to extending the fire season beyond October. Local municipalities will be encouraged to apply the same principle to private land.

2.2 Agriculture

Historically, agriculture has been the mainstay of the region's economy, but oil sands development has contributed to diversifying that economy. Small grain and livestock operations are integral parts of the predominately mixed-farm economy. Public land provides an important source of grazing. There are 356 grazing dispositions in the planning area totalling 124 917 ha (308 670 acres) that provide 67 480 animal unit months of grazing. The Wolf Lake Provincial Grazing Reserve provides an additional 12 000 animal unit months of grazing.

General Management Intent

The management of agriculture resources will focus on the conservation of range, soils, water and vegetation for sustained forage production and limited grazing opportunities. Existing animal unit months of grazing will be maintained and limited opportunities to increase the number of animal unit months will be provided to grazing disposition holders. Opportunities for grazing expansion are restricted by limited availability of vacant public land.

Broad Resource Management Objectives

1. To maintain and, where possible, to increase the number of animal unit months of domestic grazing on existing grazing dispositions by using improved grazing management practices such as grazing systems and range improvement.
2. To maintain existing opportunities for growing of annual crops, and to consider conversion of existing improved grazing to annual crops.
3. To maintain good range condition.
4. To maintain proper levels of use for existing grazing areas.

Broad Resource Management Guidelines

1. Public Lands Branch staff, Alberta Environmental Protection staff and the grazing lessee will work together to complete range management plans on grazing dispositions. Each plan will focus on maintaining public rangelands in good condition through one or more of the following techniques:
 - (a) proper distribution of cattle through trail development, and strategic locations of water and salt;
 - (b) proper stocking rates;
 - (c) implementation of specific grazing systems;
 - (d) control of brush regrowth; and
 - (e) any other technique deemed feasible.
2. Range development plans should be prepared for all projects that have a significant impact on the range resource.
3. Existing range development plans will be honoured.

4. Domestic grazing in association with recreationally significant water bodies (RMAs A-D) will be managed to be compatible with the intent for these areas.
5. New grazing dispositions will be issued only where there is no major impact on recreation, timber, conservation, fish and wildlife objectives, sand and gravel removal, watershed protection or industrial development.
6. New cultivation dispositions will be issued only where existing improved grazing is converted to annual crops.
7. New applications for permanent dispositions on vacant public land will be limited to sale of fractional areas and land exchange proposals.

2.3 Ecological Resources

“Ecological resources” are special or representative ecological features or systems that have been identified within the planning area. In the context of this plan, the term refers to defined program areas managed by the Alberta government. In particular, this relates to the Ecological Reserves and Natural Areas programs. Ecological resources may also be given protection in provincial parks (e.g., Cold Lake Provincial Park, Whitney Lakes Provincial Park, Moose Lake Provincial Park). In the general sense, ecological resources and associated ecological processes not covered by the Ecological Reserves and Natural Areas programs (e.g., areas identified as potential provincial parks) are addressed where appropriate throughout this document. These resources may also be protected through operational guidelines applied to land use applications on a site-specific basis.

Ecological resources in the planning area are protected within one site designated as a Natural Area and five sites reserved as candidate Natural Areas. These are small sites intended for conservation of natural features and for educational and recreational uses. Mixedwood forests on the west end of Murray Island are protected as part of Cold Lake Provincial Park. The remainder of this island is part of

Saskatchewan’s Meadow Lake Provincial Park. The five candidate Natural Areas are also associated with the following lakes:

Muriel Lake (Six Lakes RMA):

- wetlands and mixedwood forests on islands in the lake which provide wildlife habitat, particularly for waterfowl.

Moose Lake (Six Lakes RMA):

- a high diversity of vegetation is represented by jack pine/lichen forests, marshes and mixedwoods on islands that may be used by American white pelicans.

Moore Lake (Nine Lakes RMA):

- mature mixedwood forest on Doris Island, which is the location of a historical great blue heron colony.

Frog Lake (Six Lakes RMA):

- mature mixedwood forest on islands in the lake; the forests house a resident great blue heron colony.

Moore Lake - Hilda Lake

- a creek and associated wetlands joining the two lakes, which are osprey nesting and great blue heron feeding sites. In high-water years, this area provides spawning habitat for fish.

General Management Intent

Significant ecological resources will be protected within the planning area.

Broad Resource Management Objective

1. To identify and protect both representative and unique areas of the natural environment that have significant recreational, scientific or educational value.

Broad Resource Management Guidelines

1. Sites will continue to be inventoried for their environmental significance (i.e., for recreational, scientific or educational value). Areas exhibiting suitable features may be placed under reservation after going through the normal referral process.

2. Areas under reservation will be managed to protect specific, identified features. Applications for development on these sites will be responded to by the appropriate agencies through the normal referral process.
3. The importance of each identified ecological resource area currently under reservation will be assessed. If considered significant, and after proper referral, sites will be established through Order in Council and detailed management plans will be prepared. Within these designated sites:
 - (a) No surface disturbance or alteration of ecological conditions will be permitted, with the following exceptions:
 - those related to passive non-facility recreational uses; and
 - actions required to protect the site or surrounding land (e.g., forest fire control).
 - (b) Existing commitments will be allowed to continue. Upon completion of a management plan, the compatibility of uses (e.g., unimproved grazing) will be reviewed and specific guidelines developed.
4. Surface access for petroleum and natural gas exploration and development will be permitted only in those ecological resource areas where the environmental integrity can be preserved.

2.4 Fisheries

The capability of the lakes, rivers and streams in the area for production of fish is generally good to excellent. The fishery is used for recreational, commercial and domestic purposes. Recreational fishing is the most significant use in terms of volume, economic value and numbers of participants, with pike and perch making up three-quarters of the total catch. There is little potential for expansion of the total harvest. Management will focus on maintaining the productive capacity of the habitat base, and allocating the allowable

harvest in an efficient and equitable manner. Secondary importance is placed on improving existing habitat. Lowest priority is given to new pond development and "put-and-take" stocked fisheries.

General Management Intent

Lakes and river systems in the Cold Lake area are recognized as major fishing destinations that attract many resident and non-resident anglers. Water bodies supporting viable domestic, recreational and commercial fish populations will be protected from negative impacts. Fish populations throughout the area will be maintained or enhanced, where possible, in recognition of demand and their significant recreation and tourism value. Nutrient loading of water resources will be minimized.

Broad Resource Management Objectives

1. To maintain all existing fish populations and total fishery production to at least their current levels, and to enhance them, wherever possible. At present, the area's fisheries provide 400 000 recreation days of angling, an estimated 10 000 kg of fish for domestic use and 100 000 kg of fish for commercial harvest.
2. To maintain and, where possible, increase the total quantity of fish habitat.
3. To maintain and enhance the existing variety and distribution of fishing opportunities, with emphasis on naturally reproducing populations.
4. To develop new fishing opportunities, where possible, to meet increasing demands.
5. To ensure proper timing and adequate volume of instream flows for fish.
6. To minimize the impact of agricultural, industrial and other uses on associated fish-bearing waters.
7. To maintain reasonable and appropriate free public access to fish resources.

Broad Resource Management Guidelines

1. Natural Resources Service - Fish and Wildlife will participate in the normal referral and planning processes, and will review local plans and specific development proposals to recommend operating conditions that will ensure protection of aquatic habitats.
2. Special emphasis will be placed on the retention of riparian habitats for erosion control, water quality maintenance, fish spawning and fish rearing. Creation of artificial beaches and removal of shoreline vegetation will be strongly discouraged.
3. Natural Resources Service - Fish and Wildlife will manage the fishery resource according to the principles of sustained-yield and equitable allocation. Lake-specific fishery management plans will be developed in response to conflicting demands for limited resources. Additional inventory and resource status information will be necessary to support this effort. Increases in fishing pressure could require regulatory changes (e.g., greater catch restrictions, reduced fishing seasons).
4. Natural Resources Service - Fish and Wildlife will assess the potential for habitat improvement, and will initiate or participate in habitat enhancement projects as appropriate. Emphasis will be placed on maintaining and improving existing self-sustaining fisheries. Examples of project types include riparian habitat restoration, control of nutrient loading, managed pike spawning marshes and ponds for rearing walleye.
5. Fisheries production will continue to rely primarily on naturally reproducing populations. Artificial stocking will be used where appropriate and as opportunities arise to reestablish lost populations or create new ones. The development of new ponds for stocked "put-and-take" fisheries will be of secondary importance.

2.5 Historical Resources

To date, 143 archaeological sites have been recorded in the Cold Lake planning area. This area is considered to have high potential for the discovery of additional sites. Forty-three, or approximately one-third, of these sites have been discovered in association with present or former lakeshore environments, thus reinforcing the high potential of such locations for the discovery of additional sites throughout the planning area. Areas along the banks of major river systems, such as the North Saskatchewan River, and their tributaries are also considered to have high historical resource potential.

The Cold Lake planning area does not include any palaeontologically sensitive zones. However, the Lea Park Formation (uniform over the area) and the Belly River Formation (southeast corner) could yield new discoveries. New discoveries of other vertebrate or invertebrate fossils in either of these units would be significant, since both these units are poorly known palaeontologically. Development-related activities in the planning area that result in excavation into either of these formations have potential for discovering palaeontological remains.

Historically, the planning area was a rich source of furs for trading posts in both the Saskatchewan and Churchill River districts during the late 1700s and early 1800s. The planning area is known to have contained at least five trading posts, including Shaw's House (established in 1789) on Moose Lake, Fort George-Buckingham House (established in 1792), and three posts on Cold Lake. The precise locations of the sites on Cold Lake have yet to be determined; however, all five sites are considered to be of major historical and archaeological significance.

General Management Intent

In addition to the many known and confirmed sites, considerable potential exists for finding additional historical resource sites within the planning area. The identification and protection of important sites will be recognized as a significant policy within the planning area,

although this generally will not involve the allocation of significant amounts of public land.

Broad Resource Management Objectives

1. To protect historical resources (historic, prehistoric, palaeontological and natural) from potential or actual impact related to development of other resources.
2. To manage historical resource sites for scientific, educational and interpretive purposes.

Broad Resource Management Guidelines

1. Any resource use in the Cold Lake area that results in land surface disturbance may require a Historical Resources Impact Assessment before development occurs.
2. The Community Heritage Services Section of Historic Sites and Archives Service will participate in the land use referral process by reviewing proposed development projects within those areas considered to have high potential for historical resources. These areas include virtually all lakes as well as streams and major tributaries in the planning area, and have been identified on a historical resources referral map for use by government agencies. Cultural Facilities and Historical Resources Division and the Land and Forest Service will develop a referral process for forestry activities.
3. The Cultural Facilities and Historical Resources Division will identify the types of development projects to be referred at development stage.
4. Identified historical resource sites will be evaluated, and protected and/or preserved as warranted.

2.6 Infrastructure

Highways 28, 28A and 41 are the major public roads that connect the Cold Lake area to Edmonton, while Highway 55 provides a linkage to Lac La Biche. Of note is the continued development of resource roads into the northern area to service expanded oil sands developments.

There is an established network of electrical transmission lines of 69 kV and greater in the planning area. There are also numerous distribution lines and 10 substations. No power plants are located in the study area. Placement of additional electrical transmission lines can be expected, particularly in the northern portion of the planning area where major project development is probable.

Three major pipeline systems exist within the planning area. There are also numerous pipelines for gathering secondary products, salt water and steam, and for gathering and distributing natural gas. As the oil sands projects and the resulting urban developments expand, the pipeline system will also expand to meet those needs. Additional pipeline facilities are expected to minimize the negative impacts of trucking on the road system and on surrounding residents.

General Management Intent

The development of infrastructure to support resource and community development will be supported throughout the area. This development will be coordinated, wherever possible, to optimize its application for a wide range of resource uses. The negative impacts of this development will be minimized or mitigated.

Broad Resource Management Objectives

1. To locate transportation and utility corridors on environmentally suitable lands, while providing for other compatible resource uses with a minimum of disturbance to the conservation needs of the region.
2. To develop a regional road system capable of serving a wide range of user needs.

3. To provide adequate infrastructure necessary to service the complete system of recreational lakes, as consistent with RMA intents.
4. To optimize the potential benefits for a broad range of resource uses through coordinated development of regional infrastructure.
5. To meet access requirements associated with resource development while recognizing other resource values.
6. To provide at least one public access point to identified lakes (RMAs A, B, D, F).
5. All infrastructure developments must recognize environmental and wildlife constraints.
6. The aesthetic integrity will be maintained along both sides of primary access routes to, and within, major recreation and tourism development areas.
7. Additional settlement and service needs associated with resource developments will be directed to existing urban areas.

Broad Resource Management Guidelines

1. Location of major infrastructure routes/corridors will be based on the most environmentally and economically efficient option. To minimize costs, priority is placed on development options located close to existing infrastructure.
2. Transportation, energy transmission and utility functions should be combined into multiple-use corridors wherever possible to minimize environmental impact and disruption of other land and resource uses. This approach also applies to linear facilities such as power lines, roads and rail lines, as well as site-specific facilities such as airports, municipal water reservoirs, sewage lagoons and solid waste disposal landfills.
3. Multiple-purpose access should be considered where possible in the development of operational activities. Access development will depend on resource development requirements, and will be subject to constraints and opportunities posed by other resources and resource users.
4. Existing access should be used as much as possible in the development of operational activities.
8. Alberta Transportation and Utilities and/or local authorities may assume control over certain private industrial roads. The roads to be considered are those with operational and maintenance difficulties as a result of extensive public use. Alberta Transportation and Utilities and/or local authorities will respond to applications forwarded by road owners on an individual basis, but will only consider multiple-purpose roads.
9. Public access will be identified for lakes where existing access is not obvious (RMAs A, B, D and F). Cooperative arrangements will be sought with adjacent disposition holders and landowners, and municipal governments.

2.7 Mineral Resources¹

The Cold Lake Subregional Integrated Resource Plan area contains some of the most significant crude bitumen reserves in the province, particularly with regard to the extent and quality of the resource, the number and size of existing in situ recovery projects, and the potential for future developments throughout the entire area. Approximately 95 percent of the planning area is underlain by oil sands reserves in the Mannville Group, the majority of which have potential for some form of resource development. At present, there are three commercial oil sands schemes in the area, with current productive capacities of 400

¹ Mineral resources include coal, oil sands, oil and gas, quarriable and metallic minerals, salt and all other naturally occurring minerals, except sand, gravel, clay, marl and peat (see Surface Materials).

to 18 000 m³/d. There are also over 15 experimental oil sands projects of varying sizes. The Cold Lake deposit is estimated to contain 34 x 10⁹ m³ (over 200 billion barrels) of crude bitumen.

While some 25 natural gas fields have been established in or partially in the planning area, they play a much smaller role in the economy of the region. The gas in the area is sweet and dry, and requires little processing. The total remaining reserves in the 25 fields are approximately 18 billion cubic metres, or about 1 percent of Alberta's remaining reserves. At present there are no conventional oil pools or coal resources identified within the planning area.

General Management Intent

The energy resources of the Cold Lake area, particularly the oil sands resources, are of major importance to the economic well-being of the region and the province. They will, in the near future and over the long term, contribute significantly to the energy self-sufficiency of Canada. For this reason, exploration and development of these resources will be encouraged throughout the planning area, while recognizing the need to manage conflicts with surface activities to provide optimal regional and provincial benefits.

Broad Resource Management Objectives

1. To provide the opportunity for a wide range of mineral resource developments, with particular emphasis on oil sands.
2. To encourage the economic, orderly and efficient exploration and development of mineral resources so as to maximize resource recovery.
3. To encourage the development of procedures and techniques that will minimize conflicts between mineral developments and other resources.

Broad Resource Management Guidelines

1. Mineral resource activities will take place throughout the planning area, focusing on the

development of oil sands and natural gas reserves. Unless otherwise specified, mineral resource exploration and development will normally be permitted within the boundaries of RMAs, provided the proponent satisfactorily addresses the specific resource objectives and requirements identified for that RMA. Some restrictions exist in areas with important environmental, recreational, historical, fisheries and wildlife resources.

2. Mineral resource exploration and development will continue to be subject to the current regulatory review process (e.g., Provincial Geophysical Guidelines). Specific restrictions, modifications or prohibitions established in this plan will be recognized.

2.8 Recreation

The planning area is characterized by a variety of high-quality lakes, rivers, streams and wildland areas that have high potential for water-based and dispersed recreation opportunities. The proximity of these resources to the Lakeland area allows for a wide range of recreation opportunities extending from Lac La Biche to Cold Lake and into Saskatchewan.

Moose and Muriel lakes receive the greatest amount of current use. It is recognized that Moose Lake, in particular, is approaching its capacity for recreation development. Cold Lake, on the other hand, has experienced less development and exhibits greater potential. Cold Lake is provincially significant for its high quality beaches, excellent water quality, recreational fishery and wildlife viewing opportunities.

General Management Intent

Opportunities for recreation will be provided throughout the planning area, within a framework of renewable resource management. Special emphasis will be placed on water-based recreational uses. Measures will be taken to preserve the quality of recreational water bodies from recreation development and activities, and other resource development impacts, and to protect future recreation facilities from the negative impacts

of water level fluctuations. To the greatest extent possible, future recreation developments will be coordinated with other forms of resource development to minimize associated costs.

Broad Resource Management Objectives

1. To manage the recreational resource for the public enjoyment of the natural values and aesthetic qualities of the environment.
2. To identify areas, with high aesthetic qualities, for recreation and tourism activities.
3. To identify recreation opportunities that could be developed and/or maintained by the public or private sectors, and nonprofit or community organizations.
4. To develop the widest possible range of water-based and land-based recreation.
5. To provide opportunities for extensive and intensive forms of recreation throughout the planning area.
6. To maintain or expand existing public recreational facilities in response to demand.
7. To encourage the private sector, municipal governments and community organizations to provide recreation facilities in response to demand.
8. To maintain or increase levels of recreational use, where suitable.
9. To protect a suitable recreational land base for the provision of future recreation opportunities within the planning area.
10. To ensure public access to public land and water bodies for recreation.

Broad Resource Management Guidelines

1. Plans, such as an area structure plan or lakeshore management plan, will eventually be prepared for all recreationally significant lakes (RMAs A to D). A conceptual design plan will be developed for each lake based on

the management intent and objectives of the resource management area, and on an assessment of the capability and carrying capacity of the lake and shoreland. Through these plans, locations will be identified for potential recreation facilities and programs, and possible opportunities will be considered for commercial development. Areas with conservation/habitat value will be identified, inventoried and protected. All interested departments and agencies will be involved in preparing these plans and setting priority among the lakes. These plans may be coordinated by either Alberta Environmental Protection or Municipal Affairs.

2. A portion of the higher-quality lake-front areas will be retained in a natural state for public use. The amount of lake front will vary from lake to lake, and will be determined in either the area structure plan or lakeshore management plan.
3. Recreational developments will be designed so they do not negatively impact the natural environment, including important aesthetic qualities. Riparian (shoreline) areas will be protected in recognition of their importance for erosion control, water quality maintenance, fish production and wildlife habitat. Creation of artificial beaches and removal of shoreline vegetation will be discouraged strongly. Exceptions may be considered only if a clear benefit to the public can be demonstrated.
4. No high-quality lake front will be leased or sold (including sale of existing leases) for any type of private use that would make it unavailable to the public.
5. Private sector developments that are complementary to recreation development initiated by the public sector will be encouraged.
6. Recreational users will be monitored for conflicts among different types of recreation and for negative impacts on natural resources. These impacts will be mitigated and conflicting recreational uses will be managed through a variety of methods.

7. Proposals for commercial recreation developments will be assessed through the Alberta Tourism and Recreation Leasing process.
8. Alberta Environmental Protection and Municipal Affairs will monitor inventories of cottage lots and vacancy rates on public and private land. Until the number of lots approved for development is substantially reduced, public land will not be leased or sold for the purposes of cottage subdivision. When the reduction occurs, lots may be made available on public land at Marie and Muriel lakes in accordance with general municipal plans approved by the municipality, and area structure plans. Approval of additional subdivisions on private land will be monitored and the number will be added to the approved lot total as they become available.
9. Surface access for mineral exploration or development will not be permitted in provincial parks, provincial recreation areas, and certain other areas under reservation by Natural Resources Service - Parks. They will strengthen existing reservations where appropriate.
10. Any new recreational off-highway vehicle trails should avoid active portions of registered traplines and be developed in consultation with the trapper.
11. Off-highway vehicle use restrictions (for both frozen and unfrozen ground conditions) will be imposed, as required, near areas of industrial activity, reclamation sites and environmentally sensitive areas.
12. Hunting is considered a compatible activity throughout the planning area, and will be managed based on normal guidelines and regulations. Site-specific restrictions may be applied for active industrial or recreational areas.
13. The resources that make the lakes in RMAs A to D a valuable recreation resource (beach, water, aesthetics, fisheries) will be maintained. This will be accomplished

through existing regulations, ongoing referral processes, and by working cooperatively with municipalities to control the nature and extent of developments within each RMA. Compatible resource management activities, in association with these lakes, will be modified to ensure these resources are not jeopardized.

14. Through ongoing promotion of the Use Respect Program, recreational users of public land under grazing disposition will be encouraged to cooperate with grazing disposition holders. All users should attempt to notify the disposition holder of their intention to these lands. In addition, all users should take appropriate measures to prevent damage to forage, livestock or improvements on such land.
15. Grazing disposition holders will be encouraged to allow recreational users to have both foot and non-motorized access to leased public land at all times. Motorized recreational access should be allowed only on selected roads and trails.

2.9 Surface Materials

The majority of aggregate resources in the Cold Lake area are located on public land. The total resource in the Cold Lake area is estimated to be 24 million m³ of gravel and 116 million m³ of sand. Of this, 12 million m³ of gravel occur in three deposits in the Elk Point area, and 3 million m³ occurs in two deposits in Improvement District 18 north of Glendon. Coarse aggregate material is not plentiful in this area.

General Management Intent

The demand for sand and gravel resources in the area is extremely high and exceeds known supplies. Areas capable of supplying additional sand and gravel resources will be given a high priority for that use.

Broad Resource Management Objectives

1. To provide for the development of sand, gravel, clay and marl.

2. To protect aggregate resources from sterilization.

Broad Resource Management Guidelines

1. Surface materials will be managed on a site-specific basis through existing referral systems, except as otherwise specified in this document.
2. To prevent sterilization, the Public Lands Branch and the Land and Forest Service will place protective notations on all land containing known and significant (class 1 to 3) sand and gravel deposits.
3. For removal of gravel, the use of surface material licences and/or short-term leases will be encouraged because of the shortage of this resource.
4. Operators will be encouraged to reclaim land, where opportunities are available, to suitable fish or wildlife habitat (e.g., creation of water bodies).

2.10 Timber

The Cold Lake planning area contains a portion of the L01 Forest Management Unit. There are significant timber resources in the north, with isolated pockets intermixed with private lands and grazing leases in the White Area. Harvesting is done by approximately 40 local resident operators with a total coniferous annual allowable cut of 6979 m³ for the area. This annual cut has been completely allocated.

Fire management and prescribed burning programs are designed to maintain this amount of timber and the related resource values of forested areas. The Land and Forest Service endeavours to integrate these programs with all land and resource development objectives, and to make them responsive to site-specific conditions.

The Land and Forest Service monitors the situation and implements appropriate measures to prevent or reduce the risk of insect or disease epidemics and resultant fire hazards within the forest protection area.

General Management Intent

Significant interest has been expressed for current and future use of the area's timber resources. Areas exhibiting capability for forest production will be allocated to the forest land base for long-term, sustained-yield management. The coniferous land base will be managed principally for local timber requirements. The deciduous land base will be managed as part of a major timber development area using both coniferous and deciduous species.

Broad Resource Management Objectives

1. To manage the forest land base for sustained-yield timber management.
2. To meet current and long-term timber supply requirements for local use and commercial developments.
3. To manage coniferous timber for local use as Miscellaneous Timber Use areas in the Green Area and as woodlots in the White Area.
4. To provide a viable sustained-yield land base for deciduous timber development in the Green Area.
5. To manage prime forest capability sites to optimize fibre production to meet increases in demand.
6. To protect the forested areas from damage, including destruction by fire, insects, disease or other causes.
7. To maintain existing and future silvicultural treatment areas for the protection of public investment in forest management.

Broad Resource Management Guidelines

1. Timber management plans will be prepared for areas identified for sustained-yield timber management. With the approval of this document, timber management plans will now be initiated. Plans will be developed through consultation with the Land and Forest Service, Natural Resources Service - Fish and

Wildlife and Alberta Economic Development and Tourism.

2. Areas of important wildlife habitat and environmental value will be recognized, and harvesting programs and other forest management activities will be modified accordingly. Natural Resources Service - Fish and Wildlife will have the opportunity to participate in the review of all timber harvesting plans.
3. Forest land productivity will be maintained through reforestation in accordance with Timber Management Regulations under the Forest Act RSA, F-18, 1980.
4. Intensive forest management areas and silvicultural treatment areas will be protected (e.g., through protective notations, referral process) if they are not under active timber disposition. Grazing and agricultural dispositions will not be permitted on these lands.
5. Timber harvesting will be conducted using principles and techniques contained in the Alberta Timber Harvest Planning and Operating Ground Rules. Recreation resources, wildlife habitat and environmental values will be recognized and may require harvest techniques to be modified, when necessary, through consultation with the Land and Forest Service, Natural Resources Service - Fish and Wildlife and Alberta Economic Development and Tourism.
6. Timber management will be integrated with mineral resource developments.
7. A combination of selective and limited clear-cutting will be permitted within steeper, well-defined valleys.
8. Where topography is too steep and unstable, logging will not be permitted using present harvesting systems. These stands will be specified in operating plans.
9. An effective, timely survey and reporting system for insect and disease infestations and related fire hazards will be developed, and

appropriate action will be taken to protect the forest resource.

2.11 Tourism

The water-based recreation resources, along with significant historical, natural and man-made attractions, contribute to making the region an important destination area for tourists, particularly those from Edmonton and elsewhere in Alberta. Recreational use of the fish and wildlife resources is also an important part of creating tourism activity in the subregion. Visitors rely primarily on the region's numerous campgrounds and private cottages for accommodations. The development of new tourism attractions and services in the region, particularly by the private sector, will contribute to the growth of year-round tourism.

General Management Intent

The planning area, in conjunction with the Lakeland Subregional Integrated Resource Plan and recreation developments on the Saskatchewan side of Cold Lake, provides a major tourism destination area for Albertans. The water-based theme that predominates will be maintained and the development of additional tourism resources will be encouraged. The roles that fish and wildlife resources and their management play in the subregion are recognized as important to present and future tourism development. Recreational developments are expected to be undertaken by any of the following: private sector, government agencies, municipalities or nonprofit groups.

Broad Resource Management Objectives

1. To encourage the provision of a diverse range of high-quality private and public tourism facilities, attractions, campgrounds, fixed-roof accommodations and services capable of meeting increasing demands for leisure and business-related tourism opportunities on a year-round basis.

2. To develop the Cold Lake/Lakeland area as a provincial tourism destination area in a manner consistent with sound environmental land management.
3. To ensure the area's attracting power (based on lakes and their land and water-based attributes and, in particular, fisheries and wildlife resources) is maintained.
4. To identify locations where increases in visitor traffic are desirable and compatible with existing and proposed land uses.

Broad Resource Management Guidelines

1. Alberta Economic Development and Tourism will:
 - (a) participate, as required, in providing information, advice and assistance in deciding how to allocate public lands and resources that are important to the subregion's tourism sector;
 - (b) assist the private sector in selecting sites for proposed tourism developments, in conjunction with other government departments and municipalities;
 - (c) provide information to the private sector that are interested in upgrading existing tourism facilities and services or developing new ones. Market-demand information and promotion advice will be provided, wherever possible; and
 - (d) act as a liaison between the private sector and the responsible government agencies, where required, in regard to tourism development opportunities.
2. The private sector will be encouraged to provide a significant proportion of new facility development, which is expected to be directed at a wide variety of available development options ranging from private campgrounds to four-season resorts. These developments, including those by nonprofit groups and similar organizations, will be compatible with the recreation intent of the area, and will be operated as public facilities.

Most developments will be on a long-term lease basis with the land remaining provincial public land.

3. Tourism development proposals will be assessed through the Alberta Tourism and Recreation Leasing process.
4. Environmental impacts from tourism developments will be minimized by grouping tourism developments into development nodes, where feasible. These areas will be identified in completed lakeshore management plans, area structure plans or through existing referral systems.
5. Tourism developments should be directed toward expanding the attraction of the destination area by targeting market gaps and by offering alternative opportunities. Developments should not focus on resources already used to capacity (e.g., fisheries) as the primary attracting power.
6. Private sector recreation/tourism developments on land reserved by Natural Resources Service - Parks will be considered if the proposal is compatible with future provincial park developments.
7. Industrial tours and development of interpretive programs and facilities related to oil sands development will be encouraged.

2.12 Water Resources

The Cold Lake planning area is drained in the north by the Cold Lake-Beaver River system, and in the south by the North Saskatchewan River system. The water quality of the lakes indicates they are naturally productive and still close to their natural condition. The water quality in the rivers is generally good, particularly in the north, though the quality of the North Saskatchewan River fluctuates. The greatest demand for use of the region's water resources continues to come from the growth in oil sands development. There are water-control structures in the planning area on Moose Lake, Manatokan Lake, Ethel Lake, Tucker Lake, Jessie Lake, Barreyre Lake, Charlotte Lake and Maloney Lake.

In 1985, the province adopted a long-term plan for management of the surface water and groundwater resources in the Cold Lake and lower Beaver River basins. The water management plan recognized the conflicts that were occurring between withdrawal and instream uses. It also predicted very large water withdrawals for future oil sands development. The water management plan was designed to provide an adequate quantity and quality of water to meet the long-term domestic, municipal, industrial, agricultural, recreation, fisheries, and wildlife requirements in the basins.

One element of the water management plan was to provide a long-term industrial water supply to oil sand plants in the region by a privately owned and operated pipeline from the North Saskatchewan River. The intent was to build the pipeline by 1991 based on the then current projections of water requirements and availabilities. Discharge of water originating from the North Saskatchewan River to local surface water bodies would not be permissible under current water management policy.

In 1989, a task force of three Ministers was formed to determine the timing for the construction of the pipeline. As the growth in demand for industrial water was much less than anticipated, construction of the pipeline did not proceed as originally planned. Further studies were done, including a two-year assessment of alternatives by a ministerially-appointed public Task Force completed in 1994. These studies concluded that the pipeline remained the safest and best long-term water supply alternative; however, current industrial water demand did not warrant the expense of pipeline construction.

Industry is now using a combination of water sources, including deep saline groundwater, surface water from Cold Lake, and potable groundwater. In addition, further investigation and monitoring is being done on the long-term suitability of the saline and potable groundwater sources.

Other components of the water management plan have been implemented since 1985. Water recycling and conservation have been encouraged. Surface discharge of in situ oilsands recovery or

upgrading process wastewater has not been allowed under the water management plan.

The water management plan provides criteria for the control of withdrawals, from surface water and groundwater sources, to be applied in processing licence applications. Minimum lake levels are specified for several lakes.

Withdrawals are not allowed on May, Manatokan, Muriel, Reita and Tucker lakes because of conservation, fisheries, wildlife and recreation reasons. Withdrawals are also not allowed from Minnie Lake as a result of recommendations made in the 1986 Minnie Lake Water Stabilization Study.

The Cold Lake Subregional Integrated Resource Plan focuses on land allocation and management. It also addresses water management as necessary to minimize impacts on water resources and to maintain habitat and opportunities for use, particularly recreation. The water management plan and this integrated resource plan overlap in area, and are intended to complement one another. Strategic planning for the management of the water resources of the Cold Lake-Beaver River basin will be reflected in future reviews of the Cold Lake Subregional Integrated Resource Plan.

General Management Intent

Water resources in the planning area will be managed in accordance with the principles in the Cold Lake-Beaver River Long-Term Water Management Plan. Surface and groundwater resources will be protected from excessive withdrawals for industrial water supplies. Alberta's interjurisdictional water quantity and quality obligations to Saskatchewan, as described in the Master Agreement on Apportionment (1969) and in the Prairie Provinces Water Board water quality guidelines, will be met. Water quality will be maintained for consumptive and recreational purposes.

Broad Resource Management Objectives

1. To provide water for both consumptive and nonconsumptive uses.

2. To manage the water in the area in support of overall economic, environmental and social objectives of the province.
3. To maintain water quality and at least the minimum quantity and flow regimes needed to meet long- and short-term domestic, municipal, agricultural, industrial, recreational, fish and wildlife demands and apportionment obligations to Saskatchewan.
4. To maintain or improve water quality by minimizing erosion, siltation and nutrient loading that are a consequence of human activities.
5. To minimize the impact of existing and future facility and cottage developments on water bodies and shorelines.

Broad Resource Management Guidelines

1. Water resources will be managed in accordance with the principles in the Cold Lake-Beaver River Long-Term Water Management Plan, recognizing that an update of this plan has been requested. Areas not covered by that plan, but within the Cold Lake Subregional Integrated Resource Plan area, will be managed in accordance with the appropriate water resource management strategies developed for these areas.
2. Alberta Environmental Protection will monitor water yield and quality to ensure the water resource is maintained in an acceptable state.
3. Land or resource uses that may alter quality, quantity and flow regime of surface water or groundwater will be assessed by Alberta Environmental Protection. Negative impacts on the water resource will be avoided or minimized.
4. Impacts to recreationally significant water bodies (in RMAs A to D) as a result of grazing activities will be minimized in accordance with agricultural management guidelines.

2.13 Wildlife

The Cold Lake planning area contains an abundant array of water bodies and wetlands within the Aspen Parkland and the Boreal Mixedwood ecoregions, and an extensive transition zone between the two. The resulting diverse habitats support an exceptionally varied and productive wildlife resource base.

The planning area contains several species presently considered economically important (e.g., moose, white-tailed deer and mule deer, black bear, furbearers, waterfowl and upland game birds). The area also contains a number of rare and sensitive species such as woodland caribou, river otter, bald eagle, osprey, barred and great gray owls, sandhill cranes, American white pelican and western grebe.

Nongame bird life is exceptionally diverse, including a number of species found nowhere else in Alberta. Certain portions of the planning area represent the most important migratory bird habitat in the Prairie Provinces. Eight nationally important and 16 provincially important wetland sites have been identified for migratory birds, many of which are used by colonial nesters. In addition, the mixedwood forests are part of an internationally important breeding area for migratory woodland birds.

Public use of these resources is also diverse, including:

- recreational uses - hunting, bird-watching, photography, nature appreciation;
- domestic uses - subsistence hunting; and
- commercial uses - guiding and trapping.

Although there are consumptive use pressures on the relatively few economically important species, the greatest threat to wildlife is habitat loss or change. The potential for improving or maintaining wildlife habitat is considerable, but is highly dependent on land use practices.

General Management Intent

The wildlife resource in the planning area is particularly diverse and contributes significantly to the area's high tourism value.

It presently provides important domestic, recreational and commercial opportunities, and will continue to be managed to optimize these benefits. In addition, wildlife in the planning area represent an ecological resource of great value. Long-term population displacements or removal of significant habitat will be discouraged.

Broad Resource Management Objectives

1. To minimize damage to wildlife habitat and, where possible, to enhance the quality, diversity, distribution and extent of productive habitat. Priorities are as follows:
 - 1) wetlands and riparian habitats in the White Area;
 - 2) upland tree cover in the White Area;
 - and 3) habitat diversity in the Green Area.
2. To protect wildlife species considered sensitive to disturbance or environmental change, and to promote the increase in distributions of species considered vulnerable, threatened or endangered.
3. To promote and develop opportunities for the sustained use of wildlife. In particular, there is a significant opportunity for the expansion of tourism-related uses of wildlife resources (e.g., ecotouring, bird-watching, photography and nature interpretation facilities).
4. To maintain and, where possible, to enhance the diversity, abundance and distribution of wildlife resources for domestic, recreational and commercial benefits, as follows:
 - (a) Ungulates: To increase the wintering moose population from its currently depressed level of 550 animals to a new, sustainable level of 750 animals (the wintering population formerly averaged 1000 animals). To maintain current wintering populations of 3000 white-tailed deer and 300 mule deer. These ungulate populations will provide 8500 recreation days of sport hunting (moose: 3000; white-tailed deer: 5000; mule deer: 500), and undetermined domestic and nonconsumptive benefits.

- (b) Bird Game: To maintain the current average populations of bird game to provide 23 500 recreation days of sport hunting (upland game: 20 000; waterfowl: 3500), and undetermined domestic and nonconsumptive benefits.

- (c) Black Bear: To maintain the current fall population of 400 black bears, and encourage greater harvests to increase recreational benefits beyond the current level of 500 recreation days of sport hunting, and also minimize nuisances.

5. To maintain opportunities for trapping at present levels.
6. To minimize the costs associated with nuisance wildlife control (e.g., livestock and crop depredation).

Broad Resource Management Guidelines

1. Natural Resources Service - Fish and Wildlife will participate in the normal referral and planning processes. They will review local plans and specific development proposals to recommend operating conditions that will ensure protection of wildlife habitats.
2. Natural Resources Service - Fish and Wildlife will assess the potential for habitat improvement and develop habitat enhancement programs as appropriate. Wildlife habitat enhancement will focus on managing wetlands and riparian areas for a variety of species, and on maintaining an appropriate mix of cover and feeding areas for moose and deer. Techniques could include such things as nesting habitat management, water management, habitat protection (e.g., fencing), prescribed burning and browse regeneration.
3. Pressures on wildlife populations resulting from consumptive activities (e.g., hunting, trapping) or nonconsumptive activities that result in disturbance, habitat loss or abandonment could require more stringent regulations. These could include reduced hunting seasons and harvest limits, or more restrictive land use practices.

- Conflicts among trappers and other users will be reduced through consultation with trappers during detailed operational planning of resource development.

3.0 RESOURCE MANAGEMENT AREAS

Nine Resource Management Areas (RMAs) have been identified in the Cold Lake planning area (Figure 3). An RMA is an area of common resource management intent. For each RMA, there is a management intent that ranks the resource management priorities for that area. Specific resource management objectives and guidelines were developed for each RMA within the context of the broad resource management strategy (primary intent and broad resource management objectives and guidelines in Section 2.0), which applies to the entire planning area. Management objectives express the short- and medium-term approach toward achieving the broader objectives identified for the entire planning area. Management guidelines express the way in which management objectives are going to be achieved, and also are intended to ensure effective integration of resource management objectives.

It should be noted that RMAs A to D are important components of the broader recreational strategy that seeks to maintain and develop recreationally significant lakes within the planning area. The broad recreational intent is to provide for a full range of recreation activities while conserving the environmental and aesthetic qualities that make the resource an attraction. As a consequence, a comprehensive approach has been taken that focuses on the management of the recreational water bodies. It is based on the capability and inherent qualities of individual lakes, and allocates certain lakes for particular levels of development and types of recreational use, as influenced by known or expected demand.

As new mineral development is expected to occur throughout the planning area, it is not reflected explicitly as a basic intent for any of the identified resource management areas. The intents established for the RMAs focus on significant renewable resources. The importance of

nonrenewable resources, and in particular oil sands, is implicit in all RMAs unless otherwise stated. This importance is reflected in the management intent for the plan.

Changes made to the Green/White Area boundary affect RMA E (La Corey-Moose Hills-Tulliby Lakes) and RMA G (Mostoos Uplands). These changes were made to better reflect the capability and suitability of the land base for different activities and uses. Lands transferred to the Green Area were marginally suited for grazing and better suited to timber and wildlife habitat. This area is also used for heavy oil development, which is more compatible with timber uses than with livestock grazing. Lands transferred to the White Area are better suited for grazing purposes than timber uses. There has been a net increase in Green Area of 27¼ sections (see Figure 4).

For each RMA, a brief introduction gives descriptive information about the RMA and the significant resources within it. This is followed by the statement of the management intent for the RMA. Specific resources within each RMA are then addressed alphabetically through statements of specific RMA objectives and guidelines. The broad objectives and guidelines (Section 2.0) apply throughout, unless otherwise noted. If a resource category is not addressed within an RMA, no additional specific objectives or guidelines apply.

3.1 Six Lakes Resource Management Area

This RMA consists of the following lakes, including islands and land within approximately 800 m of the lakeshore:

- Cold Lake
- Marie Lake
- Moose Lake
- Muriel Lake
- Whitney Lakes
- Frog Lake

Each of these lakes, with the exception of Frog Lake, is a major destination for intensive recreation. They have significant recreation and tourism potential. Their physical carrying capacities are large and they have significant existing development with direct access to each lake. Each supports sport fisheries.

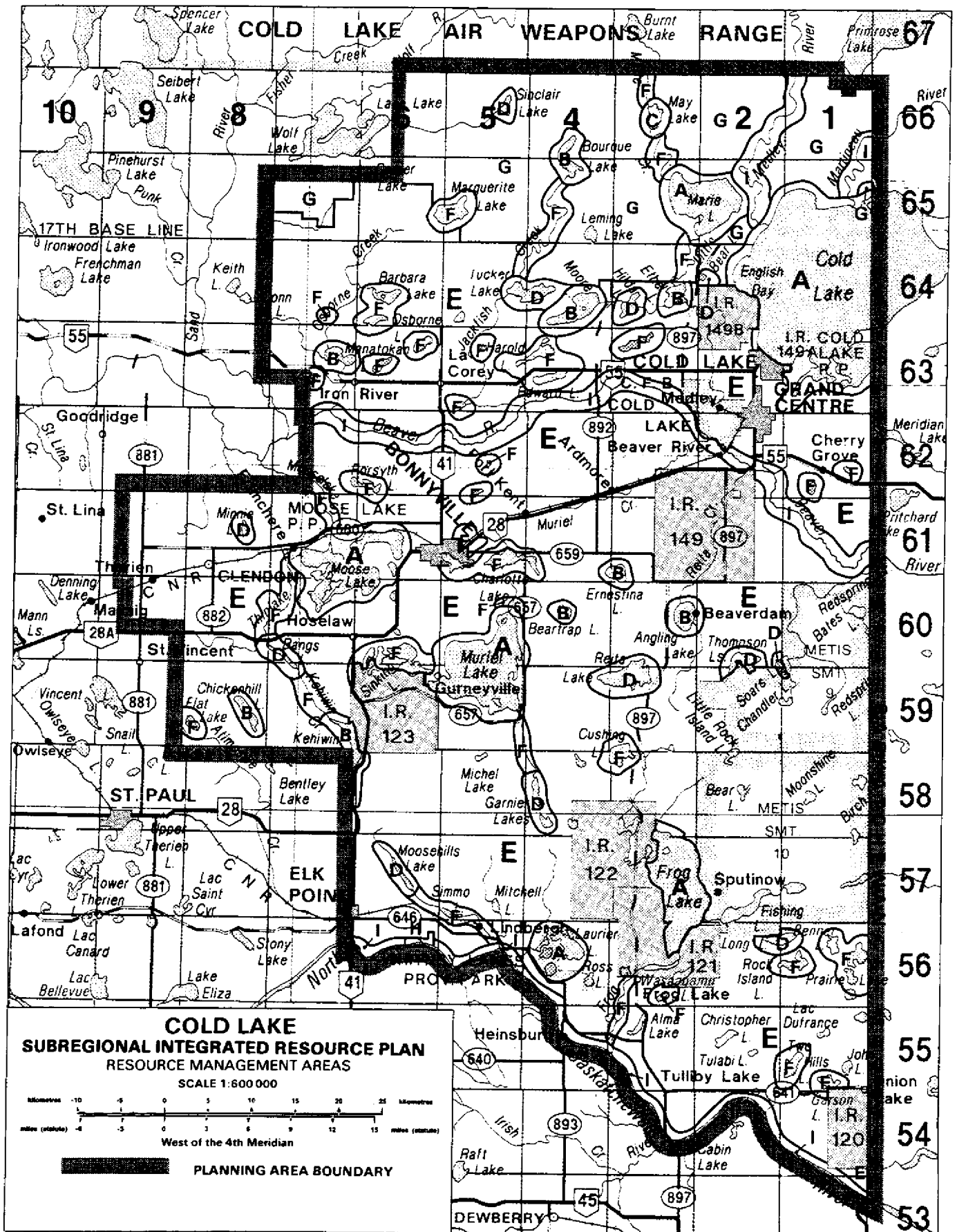
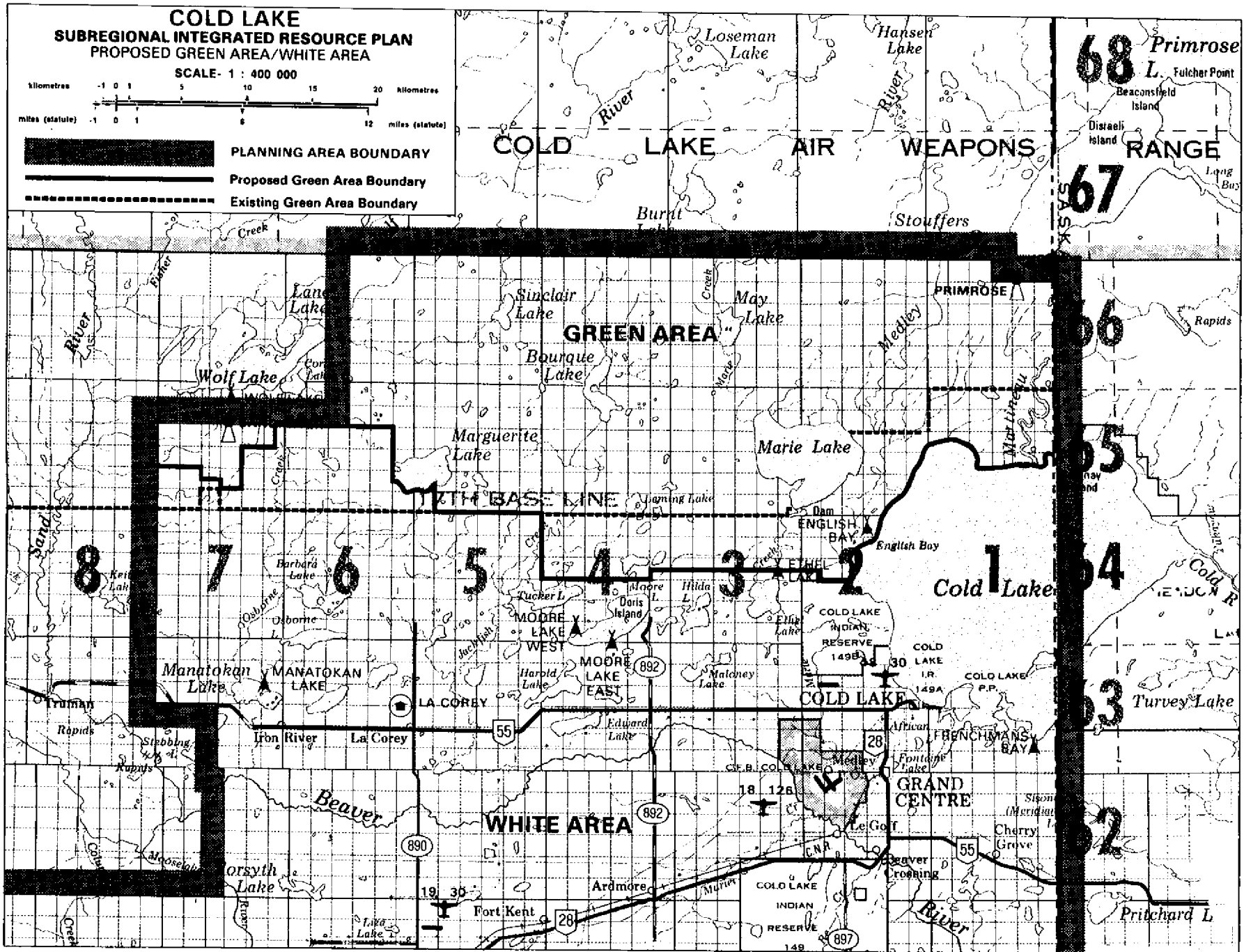


Figure 3. Resource Management Areas.

Figure 4. Green/White Area Boundary Changes.



Cold Lake is the largest lake in the planning area (37 249 ha) and a very important recreation destination. Cold Lake Provincial Park, English Bay and French Bay provincial recreation areas, municipal parks and boat launch areas are located at Cold Lake. Marie Lake has considerable potential but, as yet, has no developed public campgrounds. Moose Lake has less potential for new recreational developments than the other lakes in this RMA. It is included here because it is already an important recreation destination, with Moose Lake Provincial Park, two provincial recreation areas, and three municipal parks as well as institutional camps. Muriel Lake supports a provincial recreation area, municipal park and private campsite. Whitney Lakes is smaller (138 ha) than the other lakes in this RMA, and consequently has a lower recreation capability. It has, however, direct access and supports Whitney Lakes Provincial Park.

Frog Lake is unique in this RMA. The recreation capability of this lake is high; however, there is virtually no public land available at Frog Lake -- it is almost completely surrounded by the Frog Lake Indian Reserve and the Fishing Lake Metis Settlement. Consequently, the potential for development on public land is low. Frog Lake has been included in this RMA in recognition of the lake's recreational capability. The only objectives and guidelines that apply to Frog Lake are those that specifically refer to it.

Management Intent

To manage these lakes as major recreation destination areas for a wide range of water-based and upland recreation activities. Emphasis will also be placed on protection of the recreational and ecological values that contribute to the attractiveness of these lakes. Major recreation developments may include a range of fully serviced facilities, four-season resorts, serviced auto access camping areas, group camping and day-use areas, cottaging, trail systems, marinas and any other recreation developments with a major tourism focus. Private and commercial developments will be encouraged where appropriate.

Note: All general and resource-specific Broad Resource Management Objectives and Guidelines found in Section 2.0 apply throughout this RMA, unless explicitly stated. In addition, the following objectives and guidelines specifically apply in this RMA.

Agriculture

Management Objective

1. To maintain the animal unit months of grazing available on existing grazing dispositions at the current level, insofar as this is compatible with the primary management intent for this RMA.

Management Guidelines

1. No new agricultural dispositions will be issued in this RMA.
2. Existing grazing dispositions will be examined by the Public Lands Branch and Natural Resources Service - Fish and Wildlife to determine if their use is compatible with the management intent of the area, or if management problems exist in association with recreational water bodies or wetland habitat.
3. Livestock management problems will be corrected using grazing management techniques such as fences, salt placement, distribution trails, prescribed burning and alternative water sources. If Natural Resources Service - Fish and Wildlife and the Public Lands Branch determine that applied management techniques do not work, then deletions of land from the disposition will be considered at the renewal date of that disposition. All management techniques will be thoroughly evaluated before such deletions are considered.
4. The grazing lessee will be consulted and fully involved in implementing any conservation measures.

Ecological Resources

Management Objectives

1. To protect the wetlands and mixedwood forests on the islands in Muriel Lake (Twp. 59, Rge. 5, W4M).
2. To protect the jack pine/lichen forests, marshes and mixedwoods of the islands in Moose Lake (Twp. 60 and 61, Rge. 7, W4M).
3. To protect the mixedwood forests of Murray Island, part of Cold Lake Provincial Park, in conjunction with Meadow Lake Provincial Park in Saskatchewan.
4. To protect the mixedwood boreal forests on the north shore of Cold Lake, part of Cold Lake Provincial Park.
5. To protect the significant wetlands on the south shore of Cold Lake, part of Cold Lake Provincial Park.
6. To protect the mature mixedwood forest on the islands in Frog Lake (Twp. 57, Rge. 3, W4M) so as to provide habitat for great blue herons, bald eagles and double-crested cormorants.

Management Guideline

1. Natural Resources Service - Parks will consult with appropriate Saskatchewan government representatives to establish a cooperative management agreement for Murray Island.

Fisheries

Management Objectives

1. To maintain and, where possible, to enhance the diversity and productivity of fish populations. Emphasis will be placed on the maintenance of fish habitat.
2. To maintain the Long Bay/Centre Bay area on Cold Lake as a particularly important fish spawning, rearing and feeding area.

Historical Resources

Management Guidelines

1. The Community Heritage Services Section of Historic Sites and Archives Service will participate in the land use referral process for resource developments proposed on land within 400 m of all lakes in this RMA.

Infrastructure

Management Guidelines

1. All access development will take place in a manner consistent with the protection of high recreational values, and should be integrated with existing or proposed recreational facility or access plans. Permanent access should be designed to accommodate recreational vehicles. The Land and Forest Service, Natural Resources Service - Parks, Public Lands Branch, Alberta Economic Development and Tourism and Alberta Transportation and Utilities should be consulted to determine the location and standards for access development.
2. Wherever possible, access should be developed during the late fall and winter to avoid peak periods of recreational use.
3. Major transportation and utility corridors will normally not be permitted. These facilities may be considered if they can be demonstrated to be fully compatible with the intent of the RMA.

Mineral Resources

Management Objective

1. To permit minerals development where conflicts with other resources and with the environment can be adequately mitigated.

Management Guidelines

1. Surface access for mineral exploration or development will not be permitted within the portion of this RMA that is covered by the

French Bay Provincial Recreation Area. This area is suitable for future recreation development.

Exploration

2. (a) Geophysical exploration may be allowed on the surface of the lakes or within 45 m of the high-water mark around lakes in this RMA, provided nondestructive techniques (e.g., air guns from boats, hand laying of geophones, no clearing or construction of lines) are employed.
- (b) Proponents of the above activities must demonstrate that their operations will not negatively impact attributes (beach, water, fisheries, wildlife, recreational facilities and aesthetics) that make the lakes and their surrounding land valuable recreational resources.
- (c) Proponents of geophysical activities from the water's surface, or of evaluation drilling within 100 m of the high-water mark, are advised to hold public meetings to inform local residents of the nature and extent of their exploration operations.
3. Seismic lines may not be constructed within 45 m of recreation facilities, although nondestructive techniques, such as hand laying of geophones, may be considered.
4. Seismic lines to be constructed within 45 m to 100 m of the high-water mark of the lakes, or within 45 m to 100 m of existing recreation facilities, must be hand-cut to a width no greater than 1.5 m.
5. In addition to the above guidelines, companies carrying out exploration on lakes are required to comply with the Provincial Geophysical Guidelines as a minimum standard for exploration approvals on water-covered areas.

Development

6. No permanent minerals facilities, including an individual well, will be constructed on the

surface of the lakes, or from natural or man-made islands or other man-made structures located within the high-water mark of the lakes.

7. No permanent minerals facilities, including an individual well, will normally be constructed within 300 m of the high-water mark of the lakes. A lesser distance may be permitted provided the proponent designs, constructs and operates the facility so there will be no negative impact on the attributes (beach, water, fisheries, wildlife, recreational facilities and aesthetics) that make the lakes and their surrounding land valuable recreational resources.

At distances greater than 300 m from the high-water mark of the lakes, development will be allowed, provided it does not compromise the management intent of the RMA.

8. Where minerals and recreation development capabilities overlap, minerals development will be allowed to proceed if there are no immediate recreation development plans, and provided that recreation development capabilities will not be permanently lost.
9. Proposals for mineral development will be discussed with the Land and Forest Service and Natural Resources Service - Parks to determine how to best integrate construction of the infrastructure. Construction will be done in a manner that minimizes the impact on key recreational land and optimizes the potential for future recreation developments.

Recreation

Management Objectives

1. To provide a wide range of recreation services oriented to both local residents and to destination tourism markets.
2. To protect and preserve the resources on which these recreation opportunities and markets depend, including the lakes, lakeshores, fisheries, and aesthetic and visual qualities.

3. To protect areas of environmental significance associated with these lakes, including waterfowl habitat in the Long Bay/ Centre Bay complex of Cold Lake, and Island Bay of Moose Lake.

Management Guidelines

1. Recreation developments, such as the following, will be planned and designed to meet the management intent of the RMA:
 - (a) highly serviced auto access camping and day use areas;
 - (b) boat launches;
 - (c) group camping and day use areas;
 - (d) trail systems;
 - (e) education/interpretation programs; and
 - (f) commercial development.
2. In light of existing recreation developments around Moose Lake, limited development of new sites will be permitted. New recreation developments will be encouraged on other lakes in this RMA. Redevelopment of existing sites on Moose Lake will also be permitted.
3. Areas with high capability for intensive recreation and tourism development will be identified and inventoried, and their development will be promoted.
4. Public access will be identified for lakes without obvious existing access routes. Cooperative arrangements will be sought with adjacent disposition holders and landowners, and the municipal governments.
5. When the supply of approved cottage lots on both public and private land is reduced in the planning area, lots may be made available on public land on Marie and Muriel lakes. Any subdivision must be in accordance with the approved land use plans of the appropriate local municipal authority.

6. A joint Alberta/Saskatchewan provincial park will be given consideration.
7. The recreational capability of Frog Lake is recognized as being extensive. The Frog Lake Indian Reserve and the Fishing Lake Metis Settlement will be encouraged to develop this lake's recreation potential.

Surface Materials

Management Objective

1. To continue to develop the existing sand and gravel deposit on Moose Lake until the deposit is depleted.

Management Guidelines

1. Production of the existing sand and gravel deposit on Moose Lake will be continued until depleted.
2. The Moose Lake site will be reclaimed in a manner that will further enhance the recreational intent for the lake and the fish and wildlife habitat potential of the individual site.
3. A minimum buffer of 50 m from the high-water mark of the lakes in this RMA will be maintained.

Timber

Management Objective

1. To harvest the timber in a manner that minimizes impact on these areas, and maintains their aesthetic, environmental and recreational integrity.

Management Guidelines

1. Selective timber harvesting within 100 m of the high-water mark of the lakes may be permitted provided that it results in no negative impact on the attributes (beach, water, fisheries, wildlife, recreational facilities, tourism facilities and aesthetics)

that make the lakes and their surrounding land valuable recreational resources.

2. Harvesting programs and other forest management activities will be modified as necessary to recognize important recreation and tourism areas, their access routes, aesthetics, and fish and wildlife habitat. Timber harvesting will be restricted to landscape logging techniques.
3. Timber sales will be limited to short-term dispositions such as commercial timber permits, local timber permits and deciduous timber permits.
4. Development of new access routes will be limited. New access trails that are required will have short lines-of-sight and minimal clearing. Debris from trail clearing should be spread over the trail and flattened after timber removal is completed.
5. No mill sites will be allowed in the RMA.
6. Logging will be restricted to winter only, with the exception of salvage activities associated with industrial development.
7. Fire prevention and suppression measures will be planned and applied so as to protect intensive recreation areas, in a manner that minimizes the visual impact of these measures.

Tourism

Management Objective

1. To encourage tourism development on these lakes, based on resource availability and tourism and recreation market demand.

Management Guidelines

1. The private sector will be encouraged to take a lead role in providing tourism development.
2. The level of tourism development will be determined based on the land area available, and on the social and environmental carrying capacities of the land area and the lakes.

Water Resources

Management Objective

1. To manage water in recognition of the recreation intent of these lakes.

Management Guidelines

1. As required by the Cold Lake-Beaver River Long-Term Water Management Plan, surface water withdrawals (maximum net depletion) will be limited on three lakes in this RMA as follows: Cold Lake (20 000 dam³/year), Moose Lake (3000 dam³/year), and Marie Lake (1200 dam³/year).

Surface water withdrawals may be allowed from other lakes, subject to detailed studies to demonstrate that preferred lake levels and downstream flows will be maintained. No withdrawals will be allowed from Muriel Lake.

Wildlife

Management Objectives

1. To maintain and, where possible, to enhance the diversity and productivity of wildlife populations. Emphasis will be placed on the maintenance of wildlife habitat. The following areas are recognized as being especially important:
 - (a) Cold Lake: Long Bay/Centre Bay area and associated lands important for bird production, including western grebes and bald eagles.
 - (b) Marie Lake: Undisturbed backshores for osprey nesting.
 - (c) Moose Lake: Island Bay for nesting and foraging habitat for various bird species.
 - (d) Muriel Lake: Undisturbed backshores for osprey nesting and marsh areas for waterfowl habitat, especially the four major islands and the marshy bays on the east and south shores that support nesting habitat for a wide variety of bird species.

- (e) Frog Lake: Islands that provide nesting habitat for bald eagles, double-crested cormorants, western grebes, herring gulls, ring-billed gulls and California gulls.

3.2 Nine Lakes Resource Management Area

This RMA consists of the following lakes, including islands, and land within approximately 800 m of the lakeshore:

- Angling Lake
- Beartrap Lake
- Bourque Lake
- Chickenhill Lake
- Ernestina Lake
- Ethel Lake
- Kehiwin Lake
- Manatokan Lake
- Moore Lake

These lakes have sport fisheries, but are minor destinations relative to the lakes in Six Lakes RMA. The nine lakes can, however, support intensive recreation. They have moderate recreation potential and most have moderate recreation carrying capacity. In some cases, the full capacity for development has been reached. The inclusion of these lakes recognizes their existing development which is supported by direct access.

Management Intent

To manage these lakes as minor destination areas for water-based recreation activities consistent with the specific capabilities and attractions of each lake. Emphasis will also be placed on the protection of the recreational and ecological values that contribute to the attractiveness of these lakes. Minor recreation developments envisioned include small-scale, low-intensity semi-serviced auto access camping areas, as well as day-use areas, trail systems and boat launches.

Note: All general and resource-specific Broad Resource Management Objectives and Guidelines found in Section 2.0 apply throughout this RMA, unless explicitly stated. In addition, the following objectives and guidelines specifically apply in this RMA.

Agriculture

Management Objective

1. To maintain the animal unit months of grazing available on existing grazing dispositions at the current level, insofar as it is compatible with the primary intent of this RMA.

Management Guidelines

1. No new agricultural dispositions will be issued in this RMA.
2. Existing grazing dispositions will be examined by the Public Lands Branch and Natural Resources Service - Fish and Wildlife to determine if their use is compatible with the management intent of the area, or if management problems exist in association with recreational water bodies or wetland habitat.
3. Livestock management problems will be corrected using grazing management techniques such as fences, salt placement, distribution trails, prescribed burning and alternative water sources. If Natural Resources Service - Fish and Wildlife and Public Lands Branch determine that applied management techniques do not work, then deletions from the disposition will be considered at the renewal date of that disposition. All management techniques will be thoroughly evaluated before such deletions are considered.
4. The grazing lessee will be consulted and fully involved in implementing any conservation measures.

Ecological Resources

Management Objectives

1. To maintain the mature mixedwood forest on Doris Island in Moore Lake (NE 3, SE 10, SW 11 Twp. 64, Rge. 4, W4M) to provide nesting habitat for great blue herons and bald eagles.

2. To protect the integrity of the creek joining Hilda and Moore lakes and the associated wetlands (NE 7, LS 11 and 12 of Section 7, Twp. 64, Rge. 3, W4M and NE 11, LS 9, 10, 11 and 12 of Section 12, Twp. 64, Rge. 4, W4M).

Fisheries

Management Objectives

1. To maintain and, where possible, to enhance the diversity and productivity of fish populations. Emphasis will be placed on the maintenance of fish habitat.
2. To maintain the water body in NW 7 of Twp. 58, Rge. 6, W4M and its connecting stream as important fish production habitat for Kehiwin Lake.

Management Guideline

1. Stocking programs will be continued at Happy Hollow Lake (just north of Moore Lake).

Historical Resources

Management Guidelines

1. The Community Heritage Services Section of Historic Sites and Archives Service will participate in the land use referral process for resource developments proposed on land within 400 m of all lakes in this RMA.

Infrastructure

Management Guidelines

1. All access development will take place in a manner consistent with the protection of high recreational values, and should be integrated with existing or proposed recreational facility or access plans. Permanent access should be designed to accommodate recreational vehicles. The Land and Forest Service, Natural Resources Service - Parks, Public Lands Branch, Alberta Economic Development and Tourism and Alberta

Transportation and Utilities should be consulted to determine the location and standards for access development.

2. Whenever possible, access should be developed during the late fall and winter to avoid peak periods of recreational use.
3. Major transportation and utility corridors will normally not be permitted. These facilities may be considered if they can be demonstrated to be fully compatible with the intent of the RMA.

Mineral Resources

Management Objective

1. To permit minerals developments where conflicts with other resources and with the environment can be mitigated adequately.

Management Guidelines

Exploration

1. (a) Geophysical exploration may be allowed to occur on the surface of the lakes or within 45 m of the high-water mark around lakes in this RMA, provided nondestructive techniques (e.g., air guns from boats, hand laying of geophones, no clearing or construction of lines) are employed.
(b) Proponents of the above activities must demonstrate that their operations will not negatively impact attributes (beach, water, fisheries, wildlife, recreational facilities and aesthetics) that make the lakes and their surrounding land valuable recreational resources.
(c) Proponents of geophysical activities from the water's surface, or of evaluation drilling within 100 m of the high-water mark, are advised to hold public meetings to inform local residents of the nature and extent of their exploration operations.

2. Seismic lines may not be constructed within 45 m of recreation facilities, although nondestructive techniques, such as hand laying of geophones, may be considered.
3. Seismic lines to be constructed within 45 m to 100 m of the high-water mark of lakes, or within 45 m to 100 m of existing recreation facilities, must be hand-cut to a width no greater than 1.5 m.
4. In addition to the above guidelines, companies carrying out exploration on lakes are required to comply with the Provincial Geophysical Guidelines as a minimum standard for exploration approvals on water-covered areas.

Development

5. No permanent minerals facilities, including an individual well, will be constructed on the surface of the lakes, or from natural or man-made islands or other man-made structures located within the high-water mark of the lakes.
6. No permanent minerals facilities, including an individual well, will normally be constructed within 300 m of the high-water mark of the lakes. A lesser distance may be permitted provided the proponent designs, constructs and operates the facility so there will be no negative impact on the attributes (beach, water, fisheries, wildlife, recreational facilities and aesthetics) that make the lakes and their surrounding land valuable recreational resources.

At distances greater than 300 m from the high-water mark of the lakes, development will be allowed, provided it does not compromise the management intent of the RMA.

7. Where minerals and recreation development capabilities overlap, minerals development will be allowed to proceed if there are no immediate recreation development plans, and provided that recreation development capabilities will not be permanently lost.

8. Proposals for mineral development will be discussed with the Land and Forest Service to determine how to best integrate construction of the infrastructure. Construction will be done in a manner that minimizes the impact on key recreational land, and optimizes the potential for future recreation developments.

Recreation

Management Objective

1. To develop these lakes as minor recreation and tourism destinations, focusing on the specific attractions of each lake.

Management Guidelines

1. Recreation developments, such as the following, will be planned and designed to meet the management intent for the RMA:
 - (a) auto access camping and day use areas;
 - (b) boat/canoe launches; and
 - (c) trail systems.
2. Where possible, the specific attractions of individual lakes should be recognized, and the resources developed and/or promoted appropriately.
3. Public access will be identified for lakes without obvious existing access routes. Cooperative arrangements will be sought with adjacent disposition holders and landowners, and the municipal governments.

Surface Materials

Management Guideline

1. A minimum buffer of 50 m from the high-water mark of the lakes will be maintained.

Timber

Management Objective

1. To harvest the timber in a manner that minimizes impact on these area, and maintains their aesthetic, environmental and recreational integrity.

Management Guidelines

1. Selective timber harvesting within 100 m of the high-water mark of the lakes may be permitted provided that it results in no negative impact on the attributes (beach, water, fisheries, wildlife, recreational facilities, tourism facilities and aesthetics) that make the lakes and their surrounding land valuable recreational resources.
2. Harvesting programs and other forest management activities will be modified as necessary to recognize important recreation and tourism areas, their access routes, aesthetics, and fish and wildlife habitat. Timber harvesting will be restricted to landscape logging techniques.
3. Timber sales will be limited to short-term dispositions such as commercial timber permits, local timber permits and deciduous timber permits.
4. Development of new access routes will be limited. New access trails that are required will have short lines-of-sight and minimal clearing. Debris from trail clearing should be spread over the trail and flattened after timber removal is completed.
5. No mill sites will be allowed in the RMA.
6. Logging will be restricted to winter only, with the exception of salvage activities associated with industrial development.
7. Fire prevention and suppression measures will be planned and applied so as to protect intensive recreation areas, in a manner that minimizes the visual impact of these measures.

Tourism

Management Objectives

1. To encourage a limited amount of development at each of the lakes by the private sector or by the public sector, to service identified tourism and recreation market demand.
2. To promote less intensive tourism developments, which support the tourism management objectives and developments associated with the Six Lakes RMA, and contribute to the overall attractiveness of the subregion as a tourism destination.

Water Resources

Management Objectives

1. To manage water in recognition of the recreational intent of these lakes.
2. To manage the water resource, including withdrawals (i.e., net depletions), to ensure that lake levels and downstream flow requirements for recreation, domestic and municipal use, fisheries and wildlife are met.

Management Guidelines

1. As required by the Cold Lake-Beaver River Long-Term Water Management Plan, surface water withdrawals (maximum net depletion) will be limited on two lakes in this RMA as follows: Angling Lake (900 dam³/year) and Ethel Lake (700 dam³/year).

Surface water withdrawals may be allowed from other lakes, subject to detailed studies to demonstrate that preferred lake levels and downstream flows will be maintained. No withdrawals will be allowed from Manatokan Lake.

Wildlife

Management Objectives

1. To maintain and, where possible, to enhance the diversity and productivity of wildlife populations. Emphasis will be placed on the maintenance of wildlife habitat. The following areas are recognized as being especially important.
 - (a) Angling Lake: Marshy area near the northeast shore, which supports a western grebe colony.
 - (b) Kehiwin Lake: The forested valley surrounding Kehiwin Lake, which provides white-tailed deer wintering habitat, and the water body in NW 7 of Twp. 58, Rge. 6, W4M, which is a significant waterfowl production area.
 - (c) Manatokan Lake: The marsh areas in the eastern portion of the lake, which serve as significant waterfowl production and staging habitats.
 - (d) Moore Lake: Doris Island, which provides nesting habitat for bald eagles and great blue herons.
 - (e) Ethel Lake: Marshy area on the south shore, which supports a western grebe colony.
 - (f) Bourque Lake: Undisturbed backshores, which provide nesting habitat for bald eagles and ospreys.

Management Guideline

1. Water levels in Manatokan Lake will be managed to maintain significant waterfowl habitat.

3.3 May Lake Resource Management Area

This RMA consists of May Lake, including islands, and land within approximately 800 m of the shore. May Lake is a designated Trophy

Fishing Lake with limited access. The lake is surrounded by public land and there is no development. May Lake has greater potential for preservation than for recreational development.

Management Intent

To manage this lake to provide wildland, water-based recreation opportunities with an emphasis on the recreational fishery. To maintain the high ecological and recreational values of this lake, a strong emphasis will be placed on their protection. No formal access will be provided and only minimal facilities are envisioned. The trophy status of May Lake is recognized and recreation objectives will be integrated with fisheries objectives to maintain its unique status.

Note: All general and resource-specific Broad Resource Management Objectives and Guidelines found in Section 2.0 apply throughout this RMA, unless explicitly stated. In addition, the following objectives and guidelines specifically apply in this RMA.

Agriculture

Management Objective

1. There are presently no agricultural developments in this RMA and no development will be permitted.

Management Guideline

1. No agricultural dispositions will be issued in this RMA.

Fisheries

Management Objectives

1. To maintain and, where possible, to enhance existing aquatic habitat suitable for the productivity of fish populations.
2. To manage May Lake as a trophy fishery to provide a high-quality angling experience based on trophy-sized northern pike.

Management Guideline

1. May Lake will be assessed and appropriate measures taken to ensure it is maintained as a trophy lake fishery.

Historical Resources

Management Guideline

1. The Community Heritage Services Section of Historic Sites and Archives Service will participate in the existing land use referral process for resource developments proposed on land within 400 m of May Lake.

Infrastructure

Management Objective

1. To restrict public motorized ground access within 800 m of May Lake.

Management Guidelines

1. No new or upgraded public access will be provided. For environmental purposes, industrial roads will require gates.
2. Motorized public access to existing trails and roads will be restricted, where necessary, by constructing and locking gates or using any other techniques deemed feasible to manage general public access.
3. Major transportation and utility corridors will not normally be permitted, unless they can be demonstrated to be fully compatible with the intent of the RMA.

Mineral Resources

Management Objective

1. To permit minerals development where conflicts with other resources and with the environment can be mitigated adequately.

Management Guidelines

Exploration

1. (a) Geophysical exploration may be allowed on the surface of May Lake, or within 45 m of the high-water mark around the lake, provided nondestructive techniques (e.g., air guns from boats, hand laying of geophones, no clearing or construction of lines) are employed.
(b) Proponents of the above activities must demonstrate that their operations will not negatively impact attributes (beach, water, fisheries, wildlife, and aesthetics) that make the lake and its surrounding land a valuable recreational resource.
(c) Proponents of geophysical activities from the water's surface, or of evaluation drilling within 100 m of the high-water mark, are advised to hold public meetings to inform local residents of the nature and extent of their exploration operations.
2. Seismic lines may not be constructed within 45 m of existing recreation facilities and developments, although nondestructive techniques like hand laying of geophones may be considered.
3. Seismic lines to be constructed within 45 m to 100 m of the high-water mark of the lake, or within 45 m to 100 m of existing recreation facilities must be hand-cut to a width no greater than 1.5 m.
4. In addition to the above guidelines, companies carrying out exploration on the lake are required to comply with the Provincial Geophysical Guidelines as a minimum standard for exploration approvals on water-covered areas.

Development

5. No permanent minerals facilities, including an individual well, can be constructed on the surface of the lake, or from a natural or man-

made island or other man-made structure located within the high-water mark of the lake.

6. No permanent minerals facilities, including an individual well, will normally be constructed within 300 m of the high-water mark of the lake. A lesser distance may be permitted provided the proponent designs, constructs and operates the facility so there will be no negative impact on the attributes (beach, water, fisheries, wildlife, recreational facilities and aesthetics) that make the lake and its surrounding land a valuable recreational resource.

At distances greater than 300 m from the high-water mark of the lake, development will be allowed, provided it does not compromise the management intent of the RMA.

7. Proposals for mineral development will be discussed with Natural Resources Service - Fish and Wildlife and the Land and Forest Service to determine how to best integrate construction of the infrastructure. Construction will be done in a manner that minimizes the impact on the key fisheries resource and May Lake's trophy lake status.

Recreation

Management Objectives

1. To provide and maintain the opportunity for an exceptional fishery in a wildland setting.
2. To limit access and development in order to maintain the resource values of the lake and surrounding area.
3. To minimize random camping.

Management Guidelines

1. Recreation developments, such as the following, will be planned and designed to meet the management intent of the RMA:
 - (a) day use areas; and
 - (b) overnight remote camping.

2. The Land and Forest Service may develop this site and provide any necessary servicing.

Surface Materials

Management Objective

1. No development will be permitted. Broad Resource Management Objectives do not apply.

Timber

Management Objective

1. To harvest the timber in a manner that minimizes impact on these areas, and maintains their aesthetic, environmental and recreational integrity.

Management Guidelines

1. Selective timber harvesting within 100 m of the high-water mark of the lake may be permitted provided that it results in no negative impact on the attributes (beach, water, fisheries, wildlife, recreational facilities, tourism facilities and aesthetics) that make the lake and its surrounding land a valuable recreational resource.
2. Harvesting programs and other forest management activities will be modified as necessary to recognize important recreation and tourism areas, their access routes, aesthetics, and fish and wildlife habitat. Timber harvesting will be restricted to landscape logging techniques.
3. Timber sales will be limited to short-term dispositions such as local timber permits and deciduous timber permits.
4. Existing trails will be used, wherever possible, to provide access to timber resources.
5. Development of new access routes will be limited. New trails will have short lines-of-sight and minimal clearing. Debris from trail clearing should be spread over the trail and flattened after timber removal is completed.

- 6. No mill sites will be allowed in the RMA.
- 7. Logging will be restricted to winter only, with the exception of salvage activities associated with industrial development.
- 8. Fire prevention and suppression measures will be planned and applied so as to protect recreation areas, in a manner that minimizes the visual impact of these measures.

- Garnier Lakes
- Hilda Lake
- Little Bear Lake
- Long Lake
- Sinclair Lake
- Soars Lake
- Thompson Lakes
- Tucker Lake

These lakes support sport fisheries and are destinations for extensive recreation. They are suitable for recreational fishing and a broad range of non-recreation activities. Although these lakes are locally significant, it is not desirable to direct development to them since their recreation capability is low.

Tourism

Management Objective

- 1. To support the continuation of the May Lake trophy fishery as an important component of the overall appeal of the planning area for tourism.

Water Resources

Management Objective

- 1. To manage water in recognition of the recreational and trophy fishery intent for this lake.

Management Guideline

- 1. As required by the Cold Lake-Beaver River Long-Term Water Management Plan, no water withdrawals will be allowed from May Lake.

Wildlife

Management Objective

- 1. To maintain and, where possible, to enhance the diversity and productivity of wildlife populations. Emphasis will be placed on the maintenance of wildlife habitat.

3.4 Twelve Lakes Resource Management Area

This RMA consists of the following lakes, including islands, and land within approximately 800 m of the lakeshore:

- Bangs Lake
- Moosehills Lake
- Reita Lake
- Minnie Lake

Management Intent

To manage these lakes to provide water-based recreation opportunities with an emphasis on the recreational fishery, while permitting a broader range of non-recreational activities. Emphasis will be placed on protecting the recreational and ecological values that contribute to the attractiveness of the lakes. Formal access may be developed. Limited development of recreation programs and facilities such as camping, day use areas, parking, boat/canoe launches and trail systems are envisioned.

Note: All general and resource-specific Broad Resource Management Objectives and Guidelines found in Section 2.0 apply throughout this RMA, unless explicitly stated. In addition, the following objectives and guidelines specifically apply in this RMA.

Agriculture

Management Objective

- 1. To maintain the animal unit months of grazing available on existing grazing dispositions at the current level, insofar as this is compatible with the primary management intent for this RMA.

Management Guidelines

- 1. No new agricultural dispositions will be issued in this RMA.
- 2. Existing grazing dispositions will be examined by Public Lands Branch and

Natural Resources Service - Fish and Wildlife to determine if their use is compatible with the management intent of the area, or if management problems exist in association with recreational water bodies or wetland habitat.

3. Livestock management problems will be corrected using grazing management techniques such as fences, salt placement, distribution trails, prescribed burning and alternative water sources. If Natural Resources Service - Fish and Wildlife and Public Lands Branch determine that applied management techniques do not work, then deletions of land from the disposition will be considered at the renewal date of that disposition. All management techniques will be thoroughly evaluated before such deletions are considered.
4. The grazing lessee will be consulted and fully involved in implementing any conservation measures.

Ecological Resources

Management Objective

1. To protect the integrity of the creek joining Hilda and Moore lakes and the associated wetlands (NE 7, LS 11 and 12 of Section 7, Twp. 64, Rge. 3, W4M; and NE 11, LS 9, 10, 11 and 12 of Section 12, Twp. 64, Rge. 4, W4M).

Fisheries

Management Objective

1. To maintain and, where possible, to enhance the diversity and productivity of fish populations. Emphasis will be placed on the maintenance of fish populations.

Management Guideline

1. Stocking programs will be continued on Little Bear Lake.

Historical Resources

Management Guideline

1. The Community Heritage Services Section of Historic Sites and Archives Service will participate in the land use referral for resource developments proposed on land within 400 m of the lakes in this RMA and their tributaries.

Infrastructure

Management Guidelines

1. Recreational access may be developed or upgraded to these lakes in response to public demand.
2. All access development will take place in a manner consistent with the protection of high recreational values, and should be integrated with existing or proposed recreational facility or access plans. Permanent access should be designed to accommodate recreational vehicles. The Land and Forest Service, Natural Resources Service - Parks, Alberta Economic Development and Tourism, and Alberta Transportation and Utilities should be consulted to determine the location and standards for access development.
3. Whenever possible, access should be developed during the late fall and winter to avoid peak periods of recreational use.
4. Major transportation and utility corridors will be allowed only where they are demonstrated to be fully compatible with the intent of the RMA.

Mineral Resources

Management Objective

1. To permit minerals development where conflicts with other resources and with the environment can be mitigated adequately.

Management Guidelines

Exploration

1. (a) Geophysical exploration may be allowed on the surface of the lakes or within 45 m of the high-water mark around lakes in this RMA, provided nondestructive techniques (e.g., air guns from boats, hand laying of geophones, no clearing or construction of lines) are employed.

(b) Proponents of the above activities must demonstrate that their operations will not negatively impact attributes (beach, water, fisheries, wildlife, recreational facilities and aesthetics) that make the lakes and their surrounding land valuable recreational resources.

(c) Proponents of geophysical activities from the water's surface, or of evaluation drilling within 100 m of the high-water mark, are advised to hold public meetings to inform local residents of the nature and extent of their exploration operations.
2. Seismic lines may not be constructed within 45 m of existing recreation facilities and developments, although nondestructive techniques like the hand laying of geophones may be considered.
3. Seismic lines to be constructed within 45 m to 100 m of the high-water mark of the lakes, or within 45 m to 100 m of existing recreation facilities, must be hand-cut to a width no greater than 1.5 m.
4. In addition to the above guidelines, companies carrying out exploration on lakes are required to comply with the Provincial Geophysical Guidelines as a minimum standard for exploration approvals on water-covered areas.

Development

5. No permanent minerals facilities, including an individual well, will be constructed on the surface of the lakes, or from natural or man-

made islands or other man-made structures located within the high-water mark of the lakes.

6. No permanent minerals facilities, including an individual well, will normally be constructed within 300 m of the high-water mark of the lakes. A lesser distance may be permitted provided the proponent designs, constructs and operates the facility so there will be no negative impact on the attributes (beach, water, fisheries, wildlife, recreational facilities and aesthetics) that make the lakes and their surrounding land valuable recreational resources.

At distances greater than 300 m from the high-water mark of the lakes, development will be allowed, provided it does not compromise the management intent of the RMA.

7. Where minerals and recreation development capabilities overlap, minerals development will be allowed to proceed if there are no immediate recreation development plans, and provided that recreation development capabilities will not be permanently lost.
8. Proposals for mineral development will be discussed with the Land and Forest Service to determine how to best integrate construction of the infrastructure. Construction will be done in a manner that minimizes the impact on key recreational land and optimizes the potential for future recreation developments.

Recreation

Management Objectives

1. To maintain recreation opportunities and to provide a reasonable level of public access through public and private access points in order to satisfy local and regional demand, particularly for day use.
2. To develop public camping where the potential may exist.

Management Guidelines

1. Recreation developments, such as the following, will be planned and designed to meet the management intent for this RMA:
 - (a) day use areas;
 - (b) boat/canoe launches;
 - (c) trail systems; and
 - (d) parking.
2. Minimal camping facilities may be provided if demand warrants. However, the priority for campground construction remains with RMAs A and B.
3. Public access will be identified for lakes with no obvious existing access routes. Cooperative arrangements will be sought with adjacent disposition holders and landowners, and the municipal governments.

Surface Materials

Management Guideline

1. A minimum buffer of 50 m from the high-water mark of the lakes will be maintained.

Timber

Management Objective

1. To harvest the timber in a manner that minimizes impact on these areas, and maintains their aesthetic, environmental and recreational integrity.

Management Guidelines

1. Selective timber harvesting within 100 m of the high-water mark of the lakes may be permitted, provided that it results in no negative impact on the attributes (beach, water, fisheries, wildlife, recreational facilities, tourism facilities and aesthetics) that make the lakes and their surrounding land valuable recreational resources.

2. Harvesting programs and other forest management activities will be modified as necessary to recognize important recreation and tourism areas, aesthetics, and fish and wildlife habitat. Timber harvesting will be restricted to landscape logging techniques.
3. Timber sales will be limited to short-term dispositions such as commercial timber permits, local timber permits and deciduous timber permits.
4. Development of new access routes will be limited. New access trails that are required will have short lines-of-sight and minimal clearing. Debris from trail clearing should be spread over the trail and flattened after timber removal is completed.
5. No mill sites will be allowed in the RMA.
6. Logging will be restricted to winter only, with the exception of salvage activities associated with industrial development.
7. Fire prevention and suppression measures will be planned and applied so as to protect intensive recreation areas, in a manner that minimizes the visual impact of these measures.

Tourism

Management Objective

1. To support the development and management of these lakes as local day use sites, as an important component of the regional tourism infrastructure.

Management Guidelines

1. Proposals for tourism development will be encouraged to demonstrate environmental compatibility and recognition of the management intent of this RMA.

Water Resources

Management Objectives

1. To manage water in recognition of the recreational intent of these lakes.
2. To manage the water resource, including withdrawals (i.e., net depletions), to ensure that lake levels and downstream flow requirements for recreation, domestic and municipal use, fisheries and wildlife are met.

Management Guideline

1. As required by the Cold Lake-Beaver River Long-Term Water Management Plan, surface water withdrawals may be allowed from lakes within this RMA, subject to detailed studies to demonstrate that preferred lake levels and downstream flows will be maintained. No withdrawals will be allowed from Reita Lake or Tucker Lake.

Wildlife

Management Objectives

1. To maintain and, where possible, to enhance the diversity and productivity of wildlife populations. Emphasis will be placed on the maintenance of wildlife habitat. The following areas are recognized as being especially important:
 - (a) Hilda Lake: Wooded habitat along the north shore, which provides osprey nesting habitat.
 - (b) Reita Lake: Area of emergent vegetation near the northeast shore, which provides nesting habitat for western grebes.
 - (c) Moosehills Lake: The forested valley surrounding this lake, which provides white-tailed deer wintering habitat.
 - (d) Bangs Lake: The forested valley surrounding this lake, which provides white-tailed deer wintering habitat, and an area of tree cover near the north end

of the lake which provides nesting habitat for a great blue heron colony.

- (e) Thompson Lakes: Black tern nesting habitat in the southwestern and south-central portions of the lake.

3.5 La Corey-Moose Hills-Tulliby Lake Resource Management Area

This RMA includes all White Area lands in the planning area, except those covered by the lake-based and river-based RMAs. It consists of the Lac La Biche Plain in the north and west and along the North Saskatchewan River, and the Thickwood Hills Uplands in the centre and along the eastern edge of the RMA. Both are primarily composed of glacial moraine. The Lac La Biche Plain is very gently undulating with some moderately rolling areas, while the Thickwood Hills Uplands are moderately rolling to hummocky and are highest southwest of Muriel Lake.

This RMA is part of the Boreal Forest Ecoregion with a transition to Aspen Parkland in the south. The natural vegetation is similar to that in the Mostoos Uplands RMA (RMA G): a mixture of spruce, pine, aspen and balsam poplar, with more of the latter two species in the south. Northern areas are wetter with more muskeg. Most of the land in this RMA is currently either used for agriculture, or located next to existing farmland and suitable for grazing or cultivation. The majority of this land is under grazing disposition or is privately owned. In particular, large amounts of the land in townships 61 to 63 and near the North Saskatchewan River has been cleared. Still, this RMA contains significant habitat for moose, white-tailed deer and woodland birds, especially in the centre and southeast. Excellent wetland habitat is scattered throughout, in addition to that found in the lake-based RMAs. Wildlife habitat is a vulnerable resource in this RMA in the face of the agricultural development that has taken place.

Oil sands underlie most of this RMA and a substantial portion of the area is under lease.

Management Intent

To conserve a healthy ecosystem, and in so doing maintain and enhance a land base for improved and unimproved grazing, and conserve and enhance wildlife resources, particularly moose populations.

Note: All general and resource-specific Broad Resource Management Objectives and Guidelines found in Section 2.0 apply throughout this RMA, unless explicitly stated. In addition, the following objectives and guidelines specifically apply in this RMA.

Agriculture

Management Objectives

1. To maintain the forage base currently estimated to provide 67 000 animal unit months of grazing and to consider increases above this level through range improvement, improved grazing management, prescribed burning and rejuvenation of improved lands.
2. To ensure the full capacity of 12 000 animal unit months of grazing in the Wolf Lake Provincial Grazing Reserve is available.
3. To respond, on demand, to new grazing applications.

Management Guidelines

1. Fields for improved grazing will generally be limited to a maximum of 24.3 ha (60 ac.). However, where larger fields are justifiable, irregular perimeters will be incorporated to reduce line-of-sight.
2. Generally, on lands without existing range development plans, 50 percent of existing tree cover greater than 6 m will be maintained on any range improvement project, including those within areas shown as important wildlife habitats in Figures 5 and 6. Where unusual circumstances warrant (e.g., if normal development guidelines will not ensure the maintenance of important wildlife wintering areas or movement corridors), pasture development may be further

restricted; however, in most cases a minimum of 15 percent of the disposition area may be cleared.

3. Within the Wolf Lake Provincial Grazing Reserve, other forms of resource development may be considered provided there is no net loss of animal unit months of grazing.
4. Sale of partial quarter sections that are adjacent to private land, or farm development leases with cultivation, will be considered. Land exchange proposals involving private and public land will also be considered.

Fisheries

Management Objectives

1. To support the Broad Fisheries Management Objectives wherever possible. Emphasis will be placed on the following:
 - (a) maintaining habitat suitability in locally important streams for spawning and food production areas for fish;
 - (b) minimizing introduction of nutrients and sources of erosion that could negatively impact fish-bearing waters; and
 - (c) developing new fishing opportunities, where appropriate.

Historical Resources

Management Guideline

1. The Community Heritage Services Section of Historic Sites and Archives Service will participate in the land use referral process for resource development placed on land within areas outlined on the historical resources referral map (see Broad Resource Management Guidelines). This includes virtually all lakes as well as streams and major tributaries in this RMA.

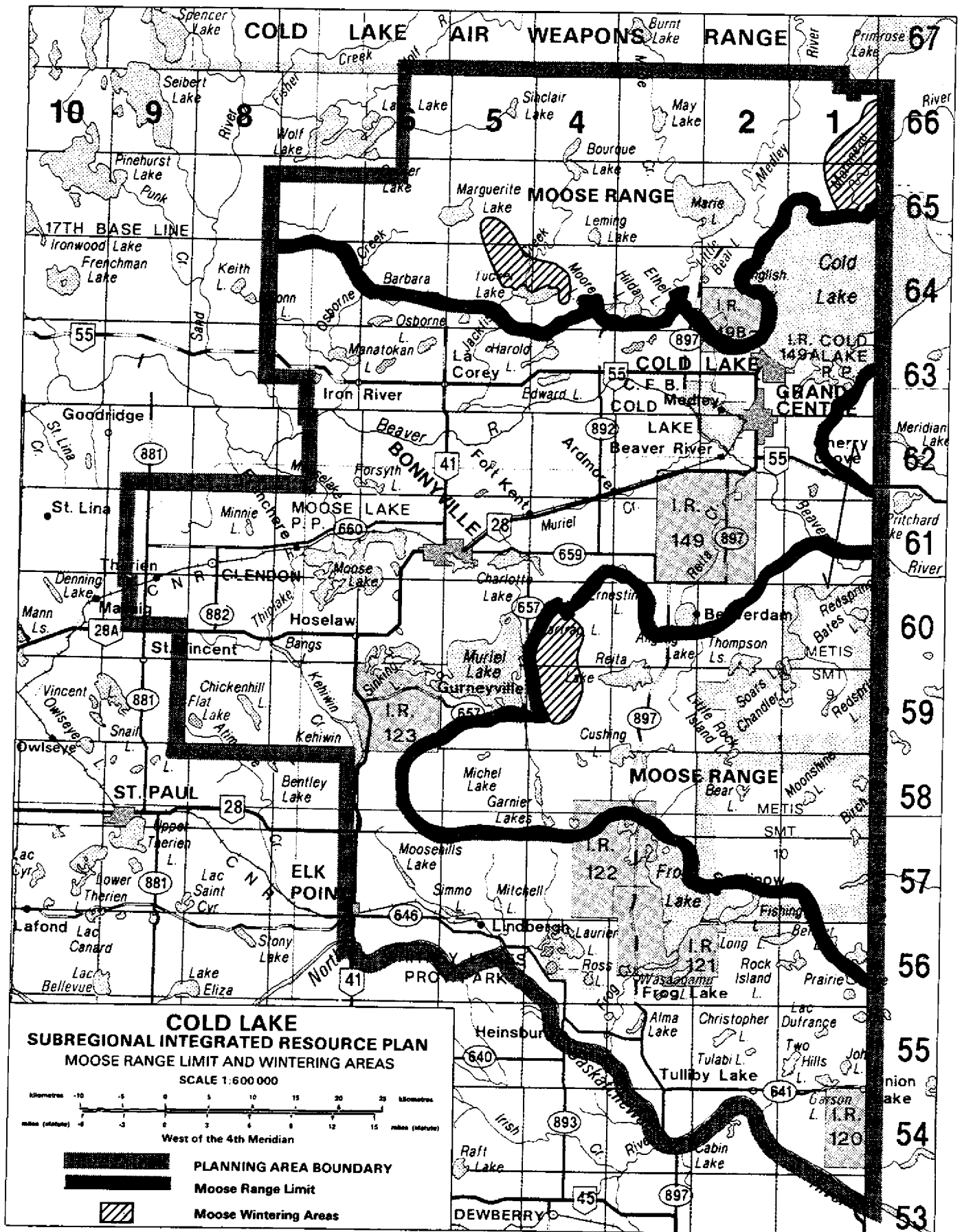


Figure 5. Moose Range Limit and Wintering Area.

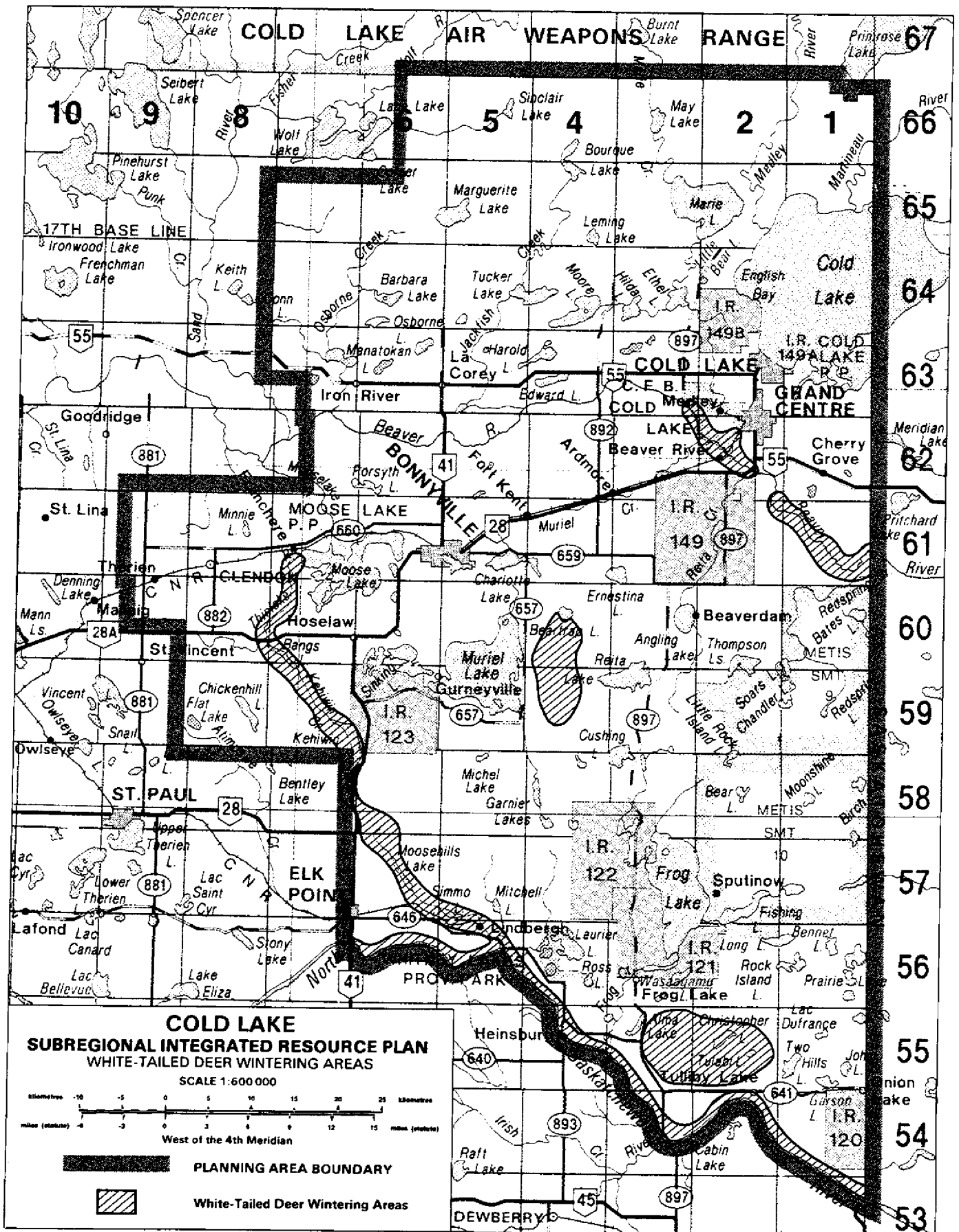


Figure 6. White-tailed Deer Wintering Area.

Infrastructure

Management Guideline

1. Development of public access will consider the needs of the agricultural communities.

Mineral Resources

Management Objective

1. To provide opportunities and encouragement for the economic, orderly and efficient exploration and development of mineral resources.

Management Guideline

1. All seismic holes beneath lakes, or within 45 m of the high-water mark, will be plugged.

Recreation

Management Objective

1. To provide access to public land for dispersed consumptive and nonconsumptive recreation opportunities, with minimum facility development. In particular, there is considerable potential for the Wolf Lake Provincial Grazing Reserve to be used as a significant recreational destination area, based primarily on wildlife resources.

Management Guidelines

1. Locations suitable for access and for small staging areas will be identified and developed in cooperation with leaseholders and private landowners.
2. The recreational and wildlife value of Wolf Lake Provincial Grazing Reserve will be maintained and enhanced whenever possible.

Timber

Management Objectives

1. To provide a perpetual supply of primary forest products for local residents through the establishment of community farm woodlots,

where compatible with other resource uses.

2. To protect and manage the deciduous timber resource in areas of sustained-yield management to ensure a future wood supply for industry.
3. To maintain existing and future silvicultural treatment areas in order to protect the public investment that has been made in forest management.
4. To remove deciduous and coniferous timber from land identified for sale or lease for agricultural use. Where possible, this will be done before the land is leased or sold.

Management Guidelines

1. Harvesting operations will normally be restricted to winter. However, where site conditions permit and existing roads are adequate, summer operations may be permitted subject to referral by interested agencies.
2. Existing access will be used wherever possible. New access trails that are required will have short lines-of-sight and minimal clearing. Debris from trail clearing should be spread over the trail and flattened after timber removal is completed.
3. Miscellaneous Permits pertaining to new mill sites will be assessed individually. Existing mill sites will be used where possible.
4. Timber sales will be limited to short-term dispositions such as commercial timber permits, deciduous timber permits and local timber permits.
5. Areas proposed for agricultural development, from which the deciduous timber can be harvested on a one-time basis, will be identified by the Land and Forest Service and Public Lands Branch. When a market exists, the merchantable deciduous timber will be harvested (including areas for range improvement) before the lands are placed

under disposition. Harvesting of the timber will not delay the disposition of the land for more than two years.

6. The coniferous timber from public land proposed for agricultural development will be scheduled for removal through the annual review of local timber permit and commercial timber permit demand and supply. This timber will be cleared within two to five years of notice, consistent with existing policy.
7. Areas of coniferous and deciduous timber that are to be managed on a sustained-yield basis will be designated through consultation at the regional level.

Tourism

Management Objective

1. To support wildlife management activities that maintain or increase consumptive and/or nonconsumptive wildlife tourism opportunities within the RMA.

Management Guidelines

1. Alberta Economic Development and Tourism will assist in making the local tourism industry aware of the value of consumptive and nonconsumptive wildlife tourism opportunities within the planning area. Tourism opportunities will reflect the need to incorporate sound wildlife management techniques, which will provide related tourism opportunities over the long term.
2. Alberta Economic Development and Tourism will assist in developing wildlife management strategies by providing advice and information concerning potential tourism benefits (e.g., increased markets and economic activity) that may result from wildlife management initiatives.

Wildlife

Management Objectives

Ungulates:

1. To maintain current wintering populations of 2600 white-tailed deer and 300 mule deer.
2. To increase the wintering moose population from its currently depressed level of 350 animals to a new, sustainable level of 500 animals. The wintering populations formerly averaged 650 animals.
3. To maintain general habitat suitability for moose within the area shown in Figure 5.
4. To maintain important moose winter habitat in the area shown in Figure 5.
5. To maintain general habitat suitability for white-tailed deer and mule deer throughout the RMA, and to place special emphasis on maintaining important winter habitat for white-tailed deer as shown in Figure 6.

Birds:

6. To maintain a mosaic of natural wetland and upland habitats adequate to support the exceptional variety of bird species using the area for staging and/or nesting.
7. To maintain current average populations of bird game to provide approximately 19 200 recreation days of sport hunting (upland game: 16 000; waterfowl: 3200), and undetermined domestic and nonconsumptive benefits.

Black Bear:

8. To maintain the current fall population of 100 black bears (while still encouraging greater harvests, which would increase recreational benefits beyond the current level of 150 days of sport hunting), and to minimize nuisances.

Furbearers:

9. To maintain opportunities for trappers to harvest furbearing species.

Management Guideline

1. Special consideration must be given to maintaining suitable habitat for moose in their wintering and general habitat areas. In particular, range improvements for domestic grazing will be limited, in accordance with Agriculture Guideline #2 for this RMA. Wherever possible, development of infrastructure (e.g., roads, pipelines and power lines) will avoid disrupting moose wintering areas.

3.6 Many Lakes Resource Management Area

This RMA consists of lands within approximately 800 m of many smaller lakes and streams throughout the planning area (Figure 3). These lakes and streams have little or no sport fish capability and only low capability for recreation development. The adjacent lands are, however, suitable for extensive recreational uses, such as hunting, bird-watching, and educational or scientific research. These areas have high capability for wildlife production, and some include particularly important wildlife habitat (e.g., waterfowl nesting and staging areas) or populations.

The water bodies and associated uplands in this RMA represent some of the most valuable migratory bird habitat in Alberta, with several sites of national or provincial significance. This RMA includes the most important areas requiring conservation protection that are not included in any other lake-based or river-based RMA.

Management Intent

To conserve critical wildlife habitat and populations, and sensitive watersheds and associated ecosystems.

Note: All general and resource-specific Broad Resource Management Objectives and Guidelines found in Section 2.0 apply throughout this RMA,

unless explicitly stated. In addition, the following objectives and guidelines specifically apply in this RMA.

Agriculture

Management Objective

1. To maintain and, where possible, to increase the animal unit months of grazing available, insofar as this is compatible with the primary management intent for the RMA.

Management Guidelines

1. New grazing dispositions on vacant public land will be considered where there are no major conflicts with other resources.
2. Mechanical clearing of rangelands may take place where soils are capable of producing native or tame species of perennial forage, and where such activity is feasible and compatible with the primary management intent.
3. Prescribed burning and herbicide application proposals will be considered on a site-specific basis.
4. Livestock management problems will be corrected using grazing management techniques such as fences, salt placement, prescribed burning and alternative water sources. If Natural Resources Service - Fish and Wildlife and the Public Lands Branch determine that applied management techniques do not work, then deletions of land from the disposition will be considered at the renewal date of that disposition. All management techniques will be thoroughly evaluated before such deletions are considered.
5. The grazing lessee will be consulted and fully involved in implementing any conservation measures.

Fisheries

Management Objectives

1. In supporting the Broad Fisheries Management Objectives, emphasis will be placed on:
 - (a) maintaining habitat suitability in locally important streams for spawning and food production areas for fish;
 - (b) minimizing introduction of nutrients and sources of erosion that could negatively impact fish-bearing waters; and
 - (c) developing new fishing opportunities, where appropriate.

Historical Resources

Management Guideline

1. The Community Heritage Services Section of Historic Sites and Archives Service will participate in the land use referral process for resource developments proposed on land within 400 m of the lakes and streams of this RMA.

Infrastructure

Management Guidelines

1. New roads and other linear developments will not be permitted within 100 m of the high-water mark of lakes.
2. New roads and other linear developments paralleling a stream will not be permitted within 100 m of the valley breaks.

Mineral Resources

Management Objective

1. To permit minerals development where conflicts with other resources and with the environment can be mitigated adequately.

Management Guidelines

Exploration

1. (a) All seismic holes beneath lakes, or within 45 m of the high-water mark, will be plugged.
 - (b) Seismic lines within 45 m of the high-water mark of the lakes must be hand-cut to a width no greater than 1.5 m.
 - (c) No exploration activity will be permitted within 100 m of the high-water mark during the waterfowl nesting period (approximately April 15-July 15) and staging period (approximately August 15-October 15).
 - (d) Existing access to lakes must be used for exploration activities. If none is available, new access will be allowed but must be dog-legged to minimize visual impact.
 - (e) Evaluation drilling from the lake surface, or within 100 m of the high-water mark around the lakes, will be permitted only during winter months and under the condition that the evaluation well is drilled and abandoned before spring breakup.
 - (f) Proponents of the above activities must demonstrate that their operations will not negatively impact sensitive watersheds, wildlife or habitat.
 - (g) Proponents of geophysical activities from the water's surface, or of evaluation drilling within 100 m of the high-water mark, are advised to hold public meetings to inform local residents of the nature and extent of their exploration operations.
2. Seismic lines may not be constructed within 45 m of recreation facilities, although nondestructive techniques like the hand laying of geophones may be considered.

3. Seismic lines to be constructed within 45 m to 100 m of recreation facilities must be hand-cut to a width no greater than 1.5 m.
4. In addition to the above guidelines, companies carrying out exploration on lakes are required to comply with the Provincial Geophysical Guidelines as a minimum standard for exploration approvals on water-covered areas.

Development

5. No permanent minerals facilities, including an individual well, can be constructed on the surface of lakes, or from a natural or man-made island or other man-made structure located within the circumference of the lakes.
6. No permanent minerals facilities, including an individual well, will normally be constructed within 300 m of the high-water mark of a lake. A lesser distance may be permitted provided that the proponent designs, constructs and operates the facility such that there will be no negative impact on sensitive watersheds, wildlife or habitat.

At distances greater than 300 m from the high-water mark of the lakes, development will be allowed, provided it does not compromise the management intent of the RMA.

7. Proposals for mineral development will be discussed with the Land and Forest Service and Natural Resources Service - Fish and Wildlife to determine how to best integrate construction of the infrastructure. Construction will be done in a manner that minimizes the impact on waterfowl habitat.

Recreation

Management Objectives

1. To provide opportunities for extensive forms of recreation such as bird-watching, hunting, and for educational and scientific research.
2. To provide primitive access for hunting and nature-oriented activities.

Management Guideline

1. Public access will be identified for lakes that have no obvious existing access. Cooperative arrangements will be sought with adjacent disposition holders and landowners, and municipal governments.

Timber

Management Objective

1. To harvest the timber in a manner that minimizes impact on these areas, and maintains their aesthetic, environmental and recreational integrity.

Management Guidelines

1. Timber harvesting will be restricted to selective cutting within a 100 m buffer from the top of the river bank or from the high-water mark of lakes.
2. Harvesting programs and other forest management activities will be modified as necessary in order to recognize areas important for wildlife habitat, recreation and tourism areas and their access routes, and aesthetics.
3. Timber will not be harvested where topography is too steep and unstable to permit logging using present harvesting systems. These locations will be specified in operating plans.
4. A combination of selective and limited clear-cutting will be permitted within valleys.
5. Timber sales will be limited to short-term dispositions such as commercial timber permits, local timber permits and deciduous timber permits.
6. Existing access will be used wherever possible. New access trails that are required will have short lines-of-sight and minimal clearing. Debris from trail clearing should be spread over the trail and flattened after timber removal is completed.

7. No mill sites will be allowed in the RMA.
8. Logging will be restricted to winter only, with the exception of salvage activities associated with industrial development.
9. Fire prevention and suppression measures will be planned and applied so as to protect intensive recreation areas, in a manner that minimizes the visual impact of these measures.

Tourism

Management Objectives

1. To identify potential opportunities for organized nonconsumptive use of wildlife, directed at specific tourism markets (bird watchers, etc.) and educational institutions (colleges, high school, etc.).
2. To increase the length of stay of visitors by marketing the nonconsumptive recreation opportunities of these lakes.
3. To provide assistance and direction, in conjunction with the respective resource agencies, to local communities and interest groups wishing to develop and promote a wide range of nonconsumptive wildlife uses as local tourism attractions.

Water Resources

Management Objectives

1. To manage water resources as an integral component of wetland habitat.
2. To manage the water resource, including withdrawals (i.e., net depletions), to ensure that lake levels and downstream flow requirements for recreation, domestic and municipal use, fisheries and wildlife are met.

Management Guidelines

1. Water may be managed to maintain important wetland and waterfowl habitats.

2. Land uses that negatively impact affect water quantity or quality will be assessed by Natural Resources Service. Measures will be taken to prevent a loss in the quality or quantity of waterfowl habitat.

Wildlife

Management Objectives

1. To maintain wetlands (and associated upland nesting cover) for waterfowl production and staging.
2. To maintain tree-covered valleys for ungulate wintering.
3. To maintain nesting habitat on Marguerite Lake and Osbourne Lake for sandhill cranes.
4. To maintain habitat for colonial-nesting birds (such as eared grebe, black tern, common tern, Franklin's gull, ring-billed gull) at Forsyth Lake, Edward Lake, Jessie Lake, Maloney Lake, Harold Lake and Charlotte Lake.
5. To maintain significant muskrat habitat in Bennet Lake, Prairie Lake and the unnamed lake in Section 23, 24 and 25, Twp. 56, Rge. 1, W4M.
6. To promote public awareness and appreciation of the exceptional wildlife values associated with these water bodies.

Management Guidelines

1. Land clearing and development will be minimized to maintain sufficient habitat for ungulate cover, furbearer feeding and waterfowl nesting.
2. Temporary industrial activities will not be permitted during waterfowl nesting (approximately April 15-July 15) and staging periods (approximately August 15-October 15) within 100 m of the high-water mark of lakes.

3. Water levels in Manatokan Lake will be managed to maintain significant waterfowl habitat in the large marsh east of Manatokan Lake.

3.7 Mostoos Uplands Resource Management Area

This RMA includes all of the Green Area lands in the planning area, except those included in lake-based or river-based RMAs. It contains part of the Mostoos Hills Uplands, which consist of undulating to moderately rolling morainal materials with extensive organic deposits. It is covered by boreal mixedwood forest, composed of spruce, pine, aspen and balsam poplar, widely interspersed with muskeg. The coniferous and deciduous timber will be harvested extensively.

Most of this RMA is moderate to good habitat for moose and white-tailed deer. Good wetland habitat, whether permanent or transitory, is scattered throughout. Most of the terrestrial furbearer habitat in the planning area is found in this RMA.

Oil sands underlie almost the entire RMA, and almost all of the area is under lease.

Management Intent

To provide for the optimal use of resources by providing for a wide range of resource activities such as energy exploration and development, sustained-yield timber harvesting, wildlife management, watershed management and extensive forms of recreation.

Note: All general and resource-specific Broad Resource Management Objectives and Guidelines found in Section 2.0 apply throughout this RMA, unless explicitly stated. In addition, the following objectives and guidelines specifically apply in this RMA.

Agriculture

Management Objective

1. There will be no new agricultural dispositions issued within this RMA.

Fisheries

Management Objectives

1. In supporting the Broad Fisheries Management Objectives, emphasis is placed on the following:
 - (a) maintaining habitat suitability in locally important streams for spawning and food production areas for fish;
 - (b) minimizing introduction of nutrients and sources of erosion that could negatively impact fish-bearing waters; and
 - (c) developing new fishing opportunities, where appropriate.

Mineral Resources

Management Objective

1. To provide opportunities and encouragement for the economic, orderly and efficient exploration and development of mineral resources.

Management Guideline

1. All seismic holes beneath lakes, or within 45 m of the high-water mark, will be plugged.

Recreation

Management Objectives

1. To provide access to support dispersed recreation activities.
2. To provide trails or areas for year-round use of all-terrain vehicles, and for horseback riding and cross-country skiing.

Timber

Management Objectives

1. To provide a perpetual supply of coniferous timber for use by local residents through establishment of Miscellaneous Timber Use areas.

2. To manage and protect the deciduous timber resource (e.g., through a deciduous timber allocation, and deciduous timber permits).
3. To intensively manage the prime forest capability sites (within the Cold Lake planning area) to maintain the coniferous annual allowable cut of 6979 m³ to meet wood supply demands.
4. To maintain existing and future silvicultural treatment areas for the protection of public investment in forest management.

Management Guidelines

1. Coniferous timber sales will be limited to short-term dispositions such as local timber permits and commercial timber permits.
2. Harvesting operations will normally be restricted to winter. However, where site conditions permit and existing roads are adequate, summer operations may be permitted subject to referral by interested agencies.
3. Existing access will be used wherever possible. New road developments will be assessed in relation to the needs of the logging community. New access trails that are required will have short lines-of-sight and minimal clearing. Debris from trail clearing should be spread over the trail and flattened after timber removal is completed.
4. Approval of miscellaneous permits pertaining to new mill sites will be assessed on an individual basis. Existing mill sites will be used where possible.

Tourism

Management Objective

1. To support wildlife management activities that maintain or increase consumptive and/or nonconsumptive wildlife tourism opportunities within the resource management area.

Management Guidelines

1. Alberta Economic Development and Tourism will assist in making the local tourism industry aware of the value of consumptive and nonconsumptive wildlife tourism opportunities within the planning area. Tourism opportunities will reflect the need to incorporate sound wildlife management techniques, which will provide related tourism opportunities over the long term.
2. Alberta Economic Development and Tourism will assist in developing wildlife management strategies by providing advice and information concerning potential tourism benefits (e.g., increased markets and economic activity) that may result from wildlife management initiatives.

Wildlife

Management Objectives

Ungulates

1. To maintain the current wintering population of 400 white-tailed deer.
2. To increase the wintering moose population from its currently depressed level of 200 animals to a new, sustained level of 250 animals. The wintering population formerly averaged 350 animals.
3. To maintain general habitat suitability for moose, white-tailed deer and woodland caribou throughout the RMA, and to place special emphasis on maintaining important moose winter habitat, as shown in Figure 5.

Birds

5. To maintain a mosaic of habitats adequate to support the exceptional variety of bird species using the area.
6. To maintain current average populations of bird game to provide 4300 recreation days of sport hunting (upland game: 4000; waterfowl: 300), and undetermined domestic and nonconsumptive benefits.

Black Bear

7. To maintain the current fall population of 300 black bears while still encouraging greater harvests, which would increase recreational benefits beyond the current level of 350 days of sport hunting and also minimize nuisances.

Management Guidelines

1. Habitat suitability for moose will be maintained, within the context of forest management activities, by retaining an appropriate configuration of movement corridors, winter cover and feeding areas. Range improvements for grazing purposes will be limited.
2. Habitat suitability for other species will be maintained by ensuring an appropriate diversity of habitat types, with special emphasis on the retention of habitats that could become limited.
3. Security of habitat for moose and woodland caribou, and other species sensitive to harassment or excessive hunting, will be maintained by minimizing disturbance from industrial and infrastructural developments (e.g., roads, pipelines, power lines).

3.8 Fort George-Buckingham House Resource Management Area

In 1792, the North West Company and the Hudson's Bay Company established rival fur trading posts side by side on the banks of the North Saskatchewan River a few kilometres east of Elk Point. Fort George and Buckingham House were both fur and provision posts, trading not only in beaver and other valuable furs from animals in the nearby woodland, but also in meat from the teeming buffalo herds of the grassland. Pemmican was the staple for the canoe and boat brigades that carried trade goods up and furs down the North Saskatchewan River. By 1800, the furbearing animals were depleted and the two companies abandoned these posts for others elsewhere on the river.

Fort George-Buckingham House is one of the few provincial fur trade sites identified by Alberta Community Development's Cultural Facilities and Historical Resources Division as being suitable for on-site interpretation of the fur trade theme. The site was selected for its geographic location and accessibility, land-base capability, proximity to other historic resources, archaeological potential, aesthetics and relatively pristine state.

Management Intent

To protect the Fort George-Buckingham House historical resource site as an area that best exemplifies the theme of fur trade development in the province. Formal development of the combined sites at Fort George and Buckingham House is envisioned with a focus on interpretation of the Fur Trade Era.

Note: All general and resource-specific Broad Resource Management Objectives and Guidelines found in Section 2.0 apply throughout this RMA, unless explicitly stated. In addition, the following objectives and guidelines specifically apply in this RMA.

Agriculture

Management Objective

1. There are no agricultural developments in this RMA and none will be permitted. The Broad Resource Management Objectives do not apply.

Fisheries

Management Objective

1. To ensure that development and management of lands within this RMA do not produce negative impacts to fish or fish habitat in the North Saskatchewan River.

Management Guidelines

1. The Broad Management Guidelines do **not** apply, with the exception of Guideline #1; that is, Natural Resources Service - Fish and

Wildlife will participate in the normal referral and planning processes, and will review local plans and specific development proposals to provide operating conditions that will ensure protection of aquatic habitats.

Historical Resources

Management Objectives

1. To protect the Fort George-Buckingham House historical site from either physical or visual impact related to any future development in the area, and to preserve this site for future generations.
2. To develop the Fort George-Buckingham House historical site for interpretive purposes.
3. To consolidate land parcels to ensure long-term protection of the site.

Management Guidelines

1. Cultural Facilities and Historical Resources Division will continue to identify, purchase and consolidate land in the vicinity of this site.
2. Cultural Facilities and Historical Resources Division will prepare a development plan for this site.
3. Written approval from the Minister of Community Development is required before any alterations are done to, or any objects removed from, properties within RMA H that are currently designated under the Historical Resource Act.

Mineral Resources

Management Objective

1. There are no minerals objectives for this RMA. The Broad Resource Management Objectives do not apply.

Management Guideline

1. No surface access for mineral exploration or development will be permitted. The Broad Resource Management Guidelines do not apply.

Timber

Management Objective

1. There are no timber objectives for this RMA. The Broad Resource Management Objectives do not apply.

Management Guideline

1. No timber harvest will be permitted. The Broad Resource Management Guidelines do not apply.

Tourism

Management Objective

1. To support the creation of a potential provincial tourism destination as a result of the development and interpretation centred on the Fur Trade Era historical theme.

Management Guidelines

1. Alberta Economic Development and Tourism will contribute to the future development of these historic resources by identifying associated opportunities (e.g., infrastructure, facilities and services requirements) that are necessary for tourism development.
2. Alberta Economic Development and Tourism will encourage local and regional tourism authorities to recognize the tourism value associated with the development of the historic resource.
3. Alberta Economic Development and Tourism will assist in coordinating private-sector and public-sector tourism initiatives that are consistent with the management intent of this RMA.

Wildlife

Management Objective

1. To maintain and, where possible, to enhance the diversity and productivity of wildlife populations. Emphasis will be placed on the maintenance of wildlife habitat.

Management Guidelines

1. The Broad Resource Management Guidelines do not apply.
2. Natural Resources Service - Fish and Wildlife will seek opportunities to maintain wildlife and associated habitat within the context of development of the historical resources.

3.9 River Corridors Resource Management Area

This RMA includes the following rivers and the land within approximately 800 m of their banks:

- North Saskatchewan River
- Martineau River
- Medley River
- Beaver River

These are the most important rivers in the planning area and all provide important habitat for white-tailed deer and moose. Otherwise, they differ considerably from one another.

The North Saskatchewan River is the largest river in the Cold Lake area, with an average annual flow of 230 m³/s. Its valley is moderately deep (more than 61 m in some places), relatively narrow and well-treed. The Beaver River is much smaller, with an average annual flow of 27 m³/s, but flows through a valley that is nearly as deep as that of the North Saskatchewan. The Beaver River meanders much more and its flows vary widely from year to year, with frequent flooding. It has several reaches with shallow or permanent wetlands. Much of the land along these rivers is privately owned.

The Medley and Martineau rivers are even smaller. Both lie entirely in the Green Area. Some parts of their floodplains are poorly

drained; these floodplains include permanent and shallow wetlands and pockets of good habitat for terrestrial furbearers. The Medley River is subject to intense beaver activity, which regulates its streamflow.

The Beaver and Medley rivers are sources of aggregate material.

Management Intent

To provide for a wide range of resource activities while maintaining important fish and wildlife habitat, recreational values and sensitive riparian land. Multiple-use management will be practised consistent with the conservation of environmentally sensitive resources. Riparian land will be protected where erosion, slumping and flooding occur, or where buffers are required to address water quality concerns.

Note: All general and resource-specific Broad Resource Management Objectives and Guidelines found in Section 2.0 apply throughout this RMA, unless explicitly stated. In addition, the following objectives and guidelines specifically apply in this RMA.

Agriculture

Management Objective

1. To maintain the animal unit months of grazing available on existing grazing dispositions at the current level, insofar as it is compatible with the primary management intent for this RMA.

Management Guidelines

1. No new grazing dispositions will be issued in this RMA.
2. Tame hay production along the Beaver and North Saskatchewan rivers will be continued where it is presently occurring as part of a viable farm operation, and where there is no conflict with higher priority land uses.
3. No new dispositions for continuous crop-growing will be issued.

4. Existing grazing dispositions that are cancelled, with the lands reverting to vacant status, will be reviewed by concerned agencies to determine whether these lands should be reallocated.
5. Livestock management problems will be corrected using grazing management techniques such as fences, salt placement and alternative water sources. If the Public Lands Branch determines that applied management techniques do not work, then deletions of land from the disposition will be considered at the renewal date of that disposition. All management techniques will be thoroughly evaluated before such deletions are considered.
6. The grazing lessee will be consulted and fully involved in implementing any conservation measures.
7. Requests for renewals of existing grazing dispositions will be referred to concerned agencies.

Ecological Resources

Management Objective

1. To protect the wetlands and mixedwood forest along the Martineau River, which are currently identified as part of a candidate provincial park.

Fisheries

Management Objective

1. To provide an opportunity for trout fishing in the Medley River.

Management Guideline

1. Stocking of trout in the Medley River will be continued.

Historical Resources

Management Guideline

1. The Community Heritage Services Section of Historic Sites and Archives Service will participate in the land use referral process for resource developments proposed on land adjacent to the North Saskatchewan River, Beaver River, Medley River and Martineau River.

Infrastructure

Management Guidelines

1. River crossings and shoreline access points will be minimized to lessen point sources of sedimentation.
2. New roads or other linear developments paralleling a stream will not be permitted within 100 m of the valley breaks.

Mineral Resources

Management Objective

1. To permit minerals development where conflicts with other resources and with the environment can be mitigated adequately.

Management Guideline

1. Mineral resource activities will be subject to the current referral process and standard operating conditions.

Recreation

Management Objectives

1. To provide opportunities for corridor recreation on major river systems in the area.
2. To maintain the natural character of the environment along the Martineau River.
3. To provide local access for fishing and picnicking at existing river crossings, integrating it with the corridor recreation concept.

Management Guidelines

1. Recreation developments, such as the following, will be planned and designed to meet the management intent of the RMA:
 - (a) water access points (15-25 units);
 - (b) boat/canoe launches; and
 - (c) parking.
2. Industrial and intensive agricultural activity will be located and conducted in a manner that minimizes visual intrusion and environmental degradation of the river corridors.
3. Sites suited to local access and day uses will be identified and their development will be promoted.
4. The wildland nature of the Martineau River valley will be maintained for non-motorized, dispersed recreation uses to complement the recreation and tourism developments envisaged for the north shore of Cold Lake. There will be no development for intensive recreation, and no trails will be developed for motorized recreation.

Surface Materials

Management Objective

1. To provide for the development of regionally significant aggregate deposits.

Management Guidelines

1. Surface materials will be managed on a site-specific basis through existing referral systems. Notwithstanding, minimum buffers on the Medley and Martineau rivers will be a 30-m strip in stable, depositional areas, with a 60-m strip in active, erosional areas.
2. Surface material removal within 30 m (in stable areas) or 60 m (in erosional areas) may be considered for other streams, provided it can be done within the overall management

intent of the RMA. In addition, an operating plan must be submitted that thoroughly addresses concerns related to the following: (a) sedimentation, (b) river hydrology, (c) wildlife, (d) fish habitat and (e) reclamation.

Timber

Management Objective

1. To harvest the timber in a manner that minimizes impact on these areas, and maintains their aesthetic, environmental and recreational integrity.

Management Guidelines

1. Timber harvesting will be restricted to selective cutting within a 100-m buffer from the top of the river bank.
2. Harvesting programs and other forest management activities will be modified as necessary in areas of important wildlife habitat and aesthetics, as well as recreation and tourism areas and their access routes.
3. Timber harvesting will not be allowed on islands located in the North Saskatchewan River.
4. Timber sales will be limited to short-term dispositions such as commercial timber permits, local timber permits and deciduous timber permits.
5. Existing access will be used wherever possible. New access trails that are required will have short lines-of-sight and minimal clearing. Debris from trail clearing should be spread over the trail and flattened after timber removal is completed.
6. No mill sites will be allowed in the RMA.
7. Logging will be restricted to winter only, with the exception of salvage activities associated with industrial development.

8. Fire prevention and suppression measures will be planned and applied to protect intensive recreation areas, in a manner that will minimize the visual impact of these measures.

Tourism

Management Objective

1. To facilitate, where possible, the recreational use of the rivers as a regional tourism attraction. This will be done in conjunction with local communities, resource agencies and the private sector.

Water Resources

Management Objectives

1. To maintain water quality and minimum flow volumes sufficient for recreational and fisheries purposes.
2. To meet the Master Agreement on Apportionment (1969) requirement to pass 50 percent of the mean annual natural flows of the North Saskatchewan and Beaver rivers to Saskatchewan.
3. To meet the Prairie Provinces Water Board water quality guidelines for the Beaver River at the Saskatchewan border.
4. To meet the Prairie Provinces Water Board water quality guidelines for the North Saskatchewan River at the Saskatchewan border.

Management Guideline

1. As required by the Cold Lake-Beaver River Long Term Water Management Plan, water withdrawals for domestic, municipal, agricultural and industrial purposes are expected to be met from local surface and groundwater sources within the Cold Lake and Beaver River basins. All major water withdrawals for oil sands plants will be subject to maximum available net depletion volume limits in order to maintain preferred water quantities and qualities for local water sources.

Wildlife

Management Objectives

1. To maintain the integrity of important ungulate winter habitat.
2. To maintain the value of the Martineau River as a staging area for bald eagles.
3. To maintain wooded islands in the North Saskatchewan River as unique wildlife habitats, primarily for nongame species.

Management Guidelines

1. Special emphasis will be given to maintaining tree cover for thermal protection, hiding cover and movement corridors for ungulates.
2. Activities that disturb wildlife may be restricted during critical periods (January through March for ungulates; March, October and November for bald eagles).
3. Timber removal will not be permitted on islands, except as directly related to habitat management.

4.0 PLAN MANAGEMENT

General administrative procedures and mechanisms required for plan implementation, monitoring and amendment are outlined in this section.

General Administration

The Cold Lake Subregional Integrated Resource Plan will be implemented within the terms of appropriate legislation, regular programs and activities of the government, including operational plans, specific development projects and referral processes. Direction specific to the resource management areas assist in assessing applications for land use activities on public land. Existing systems for referral and interdepartmental review will apply to the plan.

Resources will continue to be administered by the departments responsible, in line with the provisions of the plan including resource management guidelines, and any subsequent operational plans.

Government management agencies participating in the Cold Lake Subregional Integrated Resource Plan have several responsibilities in ensuring the effective delivery of this plan. It will be their responsibility to deal with conflicts or concerns with respect to implementation or interpretation of any of the plan's provisions. These responsibilities are outlined by subject area below.

Referral Systems: Participating government management agencies will ensure that existing referral systems of the Alberta government are adequate to encompass all affected or concerned agencies.

Plan Monitoring: The Cold Lake Subregional Integrated Resource Plan will be reviewed annually by the Northeast Boreal Environmental Resource Committee with the following purposes:

- to assess the relevancy of the stated resource objectives in light of changing conditions;
- to assess the resource management guidelines and referral procedures;
- to assess agency operational plans to ensure their consistency with the Cold Lake resource management area intents, objectives and guidelines; and
- to recommend amendments to the Cold Lake Subregional Integrated Resource Plan and future actions required to maintain or promote government resource management activities in the planning area.

An annual report will be prepared by the Northeast Boreal Environmental Resource Committee. The report will highlight the previous year's activities in the planning area. It will also indicate what accomplishments are anticipated in the planning area during the following year. The report may be deferred if there is a lack of activity or progress on

government resource management objectives in the planning area.

On a periodic basis (approximately every five years), an overall assessment of this integrated resource plan will be conducted by the Northeast Boreal Environmental Resource Committee. The five year assessment is a comprehensive review to determine whether the plan requires changes and to determine the extent of changes required to update the plan. If the plan no longer found to be current, a major plan review will occur.

A major plan review will be initiated by the Northeast Boreal Environmental Resource Committee when the plan becomes outdated because of significant changes and new priorities. A major plan review would include the following:

- a comprehensive assessment of all aspects of the plan including, but not limited to, resource management objectives and guidelines, resource management area boundaries and intents;
- a public review on the same basis as the public involvement program for development of new integrated resource plans; and
- a statement recommending amendments to the plan and future actions required to maintain or promote government resource management activities in the planning area.

Amendment Procedures:

Changes to the planning area boundary, intents, the broad resource management objectives and guidelines, and the resource management area boundaries and intents that would result in significant changes to the allowed resource uses or priorities will require major amendment to the Cold Lake Subregional integrated Resource Plan. An amendment to the plan may be required as a result of an annual report, five-year assessment, a major plan review, government request or a request from an individual, group or organization outside the government.

Proposed amendments to the Cold Lake Subregional Integrated Resource Plan from outside the government should be made by formal

request. These applications can be directed to the Northeast Boreal Environmental Resource Committee.

Opportunities for public review of proposed amendments to the Cold Lake Subregional Integrated Resource Plan will be provided before changes are approved by the government. A decision on requests to amend an integrated resource plan will be endorsed by the Minister of Environmental Protection or his designate. Amendments that entail a major policy decision or change to the basic intent of the plan may be forwarded by the Minister to Cabinet.

GLOSSARY

Aggregate: Any unconsolidated surficial material, generally restricted to sand and gravel but may include clays.

Animal Unit Month: A measure of forage or feed required to maintain one animal unit (i.e., a mature cow of 455 kg/1003 lb.) with or without an unweaned calf for a period of 30 days.

Annual Allowable Cut: The total volume of timber that may be harvested in one year under sustained yield management, as stipulated in the pertinent Forest Management Plan approved by the Minister.

Archaeological Resource: “. . . a work of man that (i) is primarily of value for its prehistoric, cultural or scientific significance, and (ii) is or was buried or partially buried in land in Alberta or submerged beneath the surface of any watercourse or permanent body of water in Alberta.” As defined by Alberta Community Development.

Carrying Capacity (Range): The maximum number of animals that can graze annually on a given range for a specific period of time, without inducing a downward trend in forage production, forage quality or soil.

Commercial Timber Permit: A timber permit authorizing the cutting of coniferous timber where a surplus annual allowable cut exists in a Forest Management Unit. Permits are short-term, normally one to two years, with the possibility of extension.

Alberta Tourism and Recreational Leasing Process: An interdepartmental referral process (coordinated by Alberta Environmental Protection in conjunction with Alberta Economic Development and Tourism) to review commercial recreation or tourism development proposals involving the leasing of public land.

Community Farm Woodlots: Reserves of public land within the White Area set aside to establish a continuous supply of forest products for local community needs, to be managed on a sustained-yield basis. Dispositions are limited to small-scale timber permits.

Consumptive Use: Activities that directly deplete the resource; e.g., hunting, logging and mining. (See nonconsumptive use.)

Deciduous Timber Allocation: Timber disposition guaranteeing the holder a constant annual allowable cut expressed in terms of area of pure deciduous stands.

Disposition: A disposition governs the allocation of land or resource use, and may be short- or long-term. The most common forms are lease, licence, permit or agreement.

Domestic Grazing: Domestic grazing is the consumption of forage by livestock.

Endangered Species: Any indigenous species of flora or fauna whose existence is threatened with immediate extirpation throughout all, or a significant portion of, its range.

Environmental Resource Committee (ERC): A group of regional directors representing each of the involved divisions of Alberta Environmental Protection and other agency representatives on an occasional and “as needed” basis. The ERC reviews planning documents and has the primary responsibility for implementing approved IRPs.

Environmental Values: Value held by society toward any component or quality of the biological or natural physical environment perceived as meriting protection, preservation or retention.

Extensive Recreation: Nonfacility-oriented recreation covering a large area. Examples are cross-country skiing and trail biking. The label "extensive" does not relate to either numbers or impacts.

Forest Management Unit: An area of forested land within the Green Area to be managed for sustained timber yield. Forest Management Units are established by the Minister of Environmental Protection.

Grazing Disposition: An authorization issued by Alberta Environmental Protection for the purpose of domestic livestock grazing on public land. It is normally in the form of a lease, licence or permit.

Green Area: The Green Area, established in 1948 by the Alberta Order in Council 213/48, consists of the forested lands and covers slightly over 53 percent of the province. Public land in the Green Area is managed for multiple use, including forest production, watershed protection, fish and wildlife management, recreation and industrial development. Permanent settlement, except on legally subdivided lands, and agricultural uses, other than grazing, have been excluded.

Historic Resource: "... any work of nature or man that is primarily of value for its palaeontological, archaeological, prehistoric, historic, cultural, natural, scientific or aesthetic interest including, but not limited to, a palaeontological archaeological, prehistoric, historic or natural site, structure or object." As defined by Alberta Community Development.

Historic Site: "... any site which includes or is comprised of an historical resource of an immovable nature or which cannot be disassociated from its context without destroying some or all of its value as an historical resource and includes a prehistoric, historic or natural site or structure." As defined by Alberta Community Development.

Historical Resources Impact Assessment: Projects normally initiated in conjunction with development programs that are anticipated to cause ground surface disturbance within the province of Alberta. The objectives of such projects are as follows: to locate all historical resource sites to be affected by the development program; to evaluate the worth of such sites relative to Alberta historical resources as a whole; to determine the nature of the impact of the development program on individual sites; and to propose conservation procedures for those sites to be affected by the development. As recognized by Alberta Community Development.

Important Habitat: Habitat which is of some particular significance to a fish or wildlife population during at least part of the year. Examples include ungulate wintering areas, dancing grounds for sharp-tailed grouse, and nesting and staging areas for waterfowl.

Improved Grazing: Grazing lands that have had productivity enhanced by clearing and establishing of tame forage species and/or by various range management projects such as bush regrowth control, crossfencing, and drainage.

In Situ Recovery: Refers to methods to extract the fuel component of a deposit without removing the deposit from its bed.

Intensive Recreation: Facility-oriented recreation covering a small area. Examples are campgrounds and boat-launches. The label "intensive" does not relate to either numbers or impacts.

Lakeshore Management Plan: A means by which direction is provided for the control of land use and activities on the land immediately surrounding a lake. Plans traditionally consider both socio-economic and biophysical factors in attempting to achieve the best possible balance between varying, and frequently competing, demands on the resource.

Local Timber Permit: As authorized under the Timber Management Regulation, a permit issued normally to local residents that allows for the cutting of timber to a maximum volume of 750 m³ of coniferous roundwood or 1500 m³ of deciduous roundwood.

Mineral Development: All activities and infrastructure associated with recovery, processing, upgrading or refining of mineral resources.

Mineral Exploration: Those activities that are associated with the discovery and assessment of mineral resources (e.g., exploration drilling and geophysical assessments).

Natural Areas: A Natural Area is one type of legislatively protected area in Alberta, set aside by Alberta Environmental Protection under the authority of the Wilderness Areas, Ecological Reserves and Natural Areas Act. Natural Areas have, as their primary objective, the maintenance of their natural features while allowing for appropriate public use.

Nonconsumptive Use: Any activity that does not deplete the resource directly, e.g., bird-watching, nature photography. (See consumptive use.)

Off-Highway Vehicle: Motorized vehicle used for cross-country travel on land, water or snow. This category includes 4-wheel drive vehicles, 2-wheel drive vehicles, all-terrain vehicles, motorcycles, track vehicles and snow vehicles. Off-highway vehicles do not include helicopters, motorboats, airplanes or mountain bikes (Off-Highway Vehicle Act).

Oil Sands: This term refers to the following: sands and other rock material containing crude bitumen; the crude bitumen contained in those sands and other rock materials; and any other material substances other than natural gas, in association with that crude bitumen or the sands and other rock materials referred to previously, and includes a hydrocarbon substance declared to be oil sands under Section 7(2) of the Oil Sands Conservation Act.

Operational Plans: Provincial government resource management agencies prepare long- and short-range plans for the management of resources under their jurisdiction. These specific resource management plans generally deal exclusively with the resource(s) for which a management responsibility has been delegated. Wildlife management plans, timber management plans, range management plans and recreation management plans are examples.

Order in Council: A regulation made by the provincial cabinet under the authority of the lieutenant-governor.

Palaeontological Resource: “. . . a work of nature consisting of or containing evidence of extinct multicellular beings and includes those works or classes of works of nature designated by the regulations as palaeontological resources.” As defined by Alberta Community Development.

Public Land: Public land is land of the Crown in the right of Alberta administered under the Public Lands Act.

Quota: Coniferous or deciduous timber rights expressed as a percent share of the annual allowable cut for a given Forest Management Unit. Quotas are the allocations of quantities of timber within specified areas to individual companies for a period not exceeding 20 years. Quotas may be renewed.

Reclamation: Post-disturbance modification of the landscape to a desired state that ensures land capability is achieved which is equivalent to the pre-disturbed landscape. This usually entails maintaining a productive and balanced ecological state resistant to environmental deterioration and consistent with aesthetic values.

Referral System: The referral system was established in keeping with the Alberta Government's philosophy of the one window approach as a mechanism through which full formal review would be provided of all land use applications for activities requiring a lease, licence, permit or agreement.

Riparian Habitat: A vegetation zone influenced by groundwater, sub-irrigation (areas where a high-water table reaches and/or saturates the root zone) or surface water, and which provides important habitat for fish and a majority of wildlife species. This vegetation is often a transition zone between aquatic and terrestrial habitat.

Sterilization: The rendering of a resource inaccessible or undevelopable through the restriction of surface access to that resource or through the fragmentation of that resource.

Sustained-Yield Timber Management: The balancing of timber growth and harvesting production to ensure Timber Management continued forest productivity at a given level of management without impairing productivity of the land.

Threatened Species: Any indigenous species of fauna or flora likely to become endangered if the factors affecting its vulnerability do not become reversed.

Timber Development: An area set aside for major development opportunities for forest Area industry growth. Within a TDA, various timber companies are invited to compete for the right to manage timber on a sustained-yield harvesting basis under long term tenure. A successful award of a TDA is formalized through a Forest Management Agreement (or Agreements) or other disposition means.

Ungulates(Hoofed animals): The following ungulates occur in the planning area: moose, mule deer, white-tailed deer and woodland caribou (occasional).

Unimproved Grazing: Grazing lands that have no or minimal modifications to enhance range productivity or which have no or minimal capacity for enhancement.

Vulnerable Species: Any indigenous species of flora or fauna that is particularly at risk because of low or declining numbers, occurrence at the fringe of its range or in restricted areas, or for some other reason, but is not a threatened species.

White Area: The White Area is the settled region of the province and includes approximately 36.5 percent of the land in Alberta.