PEERLESS–GRAHAM LAKES

RESOURCE MANAGEMENT PLAN

Prepared For
ALBERTA FOREST SERVICE
by
RESOURCE PLANNING BRANCH

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INTRODUCTION

The need to develop an integrated resource management plan for the Peerless-Graham Lakes area was first identified as far back as 1971, by the Forest Land Use Branch. In February, 1972, the Human Resources Development Agency (HRDA) transferred $35,000.00 to the Department of Lands and Forests (Alberta Forest Service). However, because of the late transfer of funds and the lack of time for the co-ordination of such a project, it was decided that the project be temporarily postponed.

After further discussion and review of background information, it was decided in late 1973 that the Management Plan for the Peerless-Graham Lakes commence in the upcoming (1974-75) fiscal year.

Early in 1974 it was decided by the Lands and Forests Committee overseeing the project that the Multiple Use Planning Section should be the "lead agency" for developing the plan for the area. At the beginning of the '74-'75 fiscal year, co-ordination of the project was begun by the Multiple Use Planning Section.

The purpose of the Peerless-Graham Lakes Study was to develop a detailed, integrated resource management plan for the area. In addition to this, it was to act as a pilot project for this type of planning in the future.

CHAPTER 1

WATER

LAKE CLASSIFICATION AND RECOMMENDATIONS

A lakes classification and use recommendation system has been developed for the Peerless-Graham Lakes Management Area in order to provide a means of integrating various uses which may occur on or adjacent to the lake. It was necessary to develop a system because of the wide variety of recreational experiences which the various lakes have to offer. Recreation is a major resource use of the management area and certain constraints are required of the other resources in order to provide the best recreational value for the lakes. In order to achieve this, a classification system with corresponding recommendations for each of the lake classifications was developed.

CLASSIFICATION SYSTEM

The classification system was developed using the following criteria.

(A) STATE OF PRESENT ACCESS: Present access involved road access by means of vehicles such as cars, trucks, 4 wheel drives but excluding A.T.V.'s. Mainly secondary roads, all weather roads, and dry weather roads were considered. Siesmic lines and old wagon trails etc., or access which required A.T.V.'s and air access, were excluded. The state of access which a lake currently has, was felt to be of importance, since it provided an indicator to the current and potential development limitations which exist for the lake. Within this area, all lakes which currently have vehicle access as set out above, received recreational use. Therefore, the means and existence of access was felt to be important in classifying the lakes.

(B) EXISTENCE OF PRIVATE OR PUBLIC DEVELOPMENT: The existence of public or private development is an indicator of development potential and limitations for the lakes. Public development includes provincial parks, public recreational areas, historical sites (developed) and natural areas. Private

development includes commercial (private) recreational development, private cottages, subdivisions, and native settlements, reserves, or colonies. The existence, location and extent of these developments, whether private or public, will be an indicator to the future development for the lake.

(C) QUALITY AND DIVERSITY OF SHORELINE AND BACKSHORE FOR RECREATION:

The quality and diversity of the shoreline to support recreation, was determined by assessing the C.L.I. recreation inventory and the lakeshore survey. The C.L.I. data and class system was the basic source, but further refinement and understanding of the lakes was provided by the lakeshore survey.

The basic assumption used was that the higher the quality of the classes, the greater the potential for that lakeshore to support a better recreational experience or activity. The diversity of the different classes available for a lake was also an important determinant. A lake with a diversity of higher quality lakeshore classes was given a higher consideration than a lake which had lower quality and diversity of classes. There were four categories set up to determine the placement of lakes. These are described in Table 1 below.

TABLE 1

VALUE	CLASS RATING	DIVERSITY
High	Class 1, 2, 3	All classes, with only 1 or 2 lower classes, comprise the C.L.I. shoreline class ratings
Good	Class's 1,2,3,4,5.	All class types may occur but majority of classes include class 3, 4.
Fair	Class 3, 4, 5.	Majority of classes.
Poor	Class 3,4,5,6.	Majority of classes with a large number of class 4,5, and 6

When the lakes were selected and evaluated by their C.L.I. ratings, updated and additional information from the lakeshore surveys was included. Decisions for the placement of the lakes were, in many cases, subjectively made but they were felt to be justified because of the greater amount of individual knowledge and information which was known about the lakes. It would be difficult to confidently apply this system to a general area since additional detailed information would be lacking.

(D) QUALITY AND DIVERSITY OF RECREATIONAL ACTIVITIES: This criteria is closely correlated to number (C) in that a high rating for (C) will generally produce a high rating for (D). However, within this criteria an assessment is made as to the capability of the lake to support all potential recreational activities. Not just shoreline potential activities but water based activities are also considered. These include swimming, boating, canoeing, fishing, water skiing, and ice fishing, and are assessed for the lakes by considering wind and wave conditions, water temperature data, offshore water depth, beaching areas, algae conditions and weed beds. The abilities of the individual lakes have been evaluated by means of a 4 level rating system, high, good, fair, and poor. These ratings correspond closely with the ratings for the shoreline capabilities in criteria "c". The high rating is one which has a wide variety of possible recreational activities as well as high diversity and quality of the activities. The remaining ratings score progressively lower in the diversity and quality of the recreational activities possible. This system may appear subjective but it should be remembered that this system is developed for the Peerless-Graham Lakes management area and the lakes within its study boundaries. These lakes are being compared relative to each other and have been researched to a high degree at the same level of information.

(E) FISHING POTENTIAL: This criteria could be included within the activities of criteria (D) but it was felt that since most of the current and projected

recreational activity would be fishing, it should be evaluated separately. The fishing potential of each lake was reviewed not only for its sports fishing potential, but also for commerical and domestic fishing. The information for determining the value of a lake was researched from fish and wildlife information, commercial records and personal knowledge of the fishing within the different lakes by both personnel and recreational survey information. The value of the fisheries was based on a 4 level rating system, corresponding to high, good, fair and poor. Again, the lakes were rated relative to each other and not on a provincial or regional basis. Therefore, a lake rated as having a high fisheries potential could be considered only as a fair or good fisheries elsewhere within the province.

There was no attempt to evaluate the lakes as to their productivity on a yield basis such as lb/acre or on a creel evaluation such as "number of fish per hour."

The next step in the classification system was to compare the criteria with the values determined for the different lakes within the study area. This resulted in basically four lake types being determined. The types, criteria and associated lakes are outlined in Table II. (See Also Map I)

Once the different lake types had been established according to the criteria, and the different lakes within the study area had been placed in the appropriate type, recommendations on the activities and related land uses for each type were prepared. These recommendations were drawn up to provide for development of the various lakes recreation capabilities and at the same time provide constraints on associated land uses were necessary. These recommendations were to form guidelines around which more detailed restrictions and recommendations could be drawn up for each of the different resources. More detailed discussions on the recommendations per resource are available within each resource chapter.

TABLE II

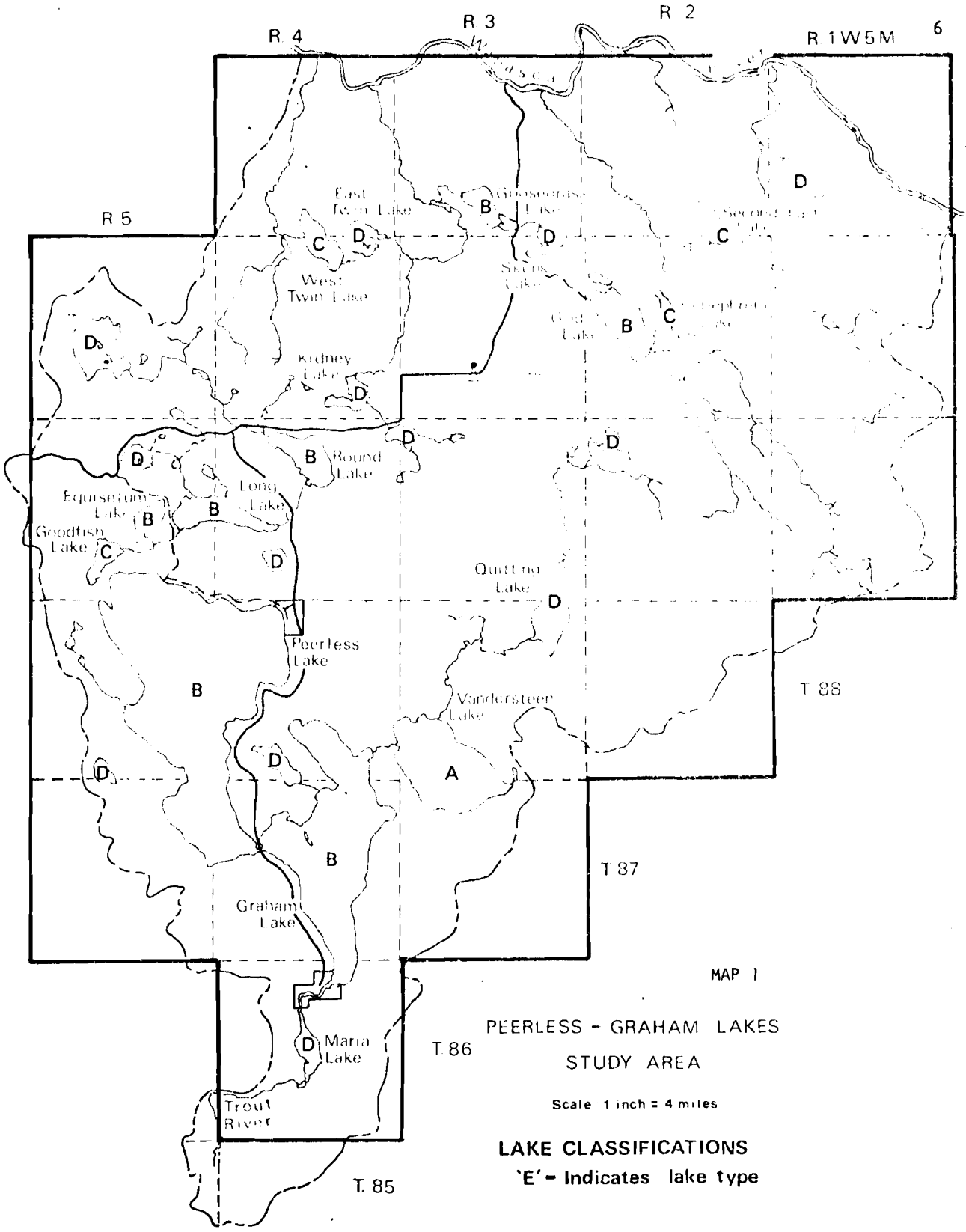
LAKE TYPE	CLASSIFICATION CRITERIA	DESCRIPTION	ASSOCIATED LAKES*
A	(A) (B) (C) (D) (E)	Isolated in present access No existing private or public development High quality and diversity of shoreline and backshore High quality and diversity of recreational activities High quality sportsfishing	Vandersteine Lake
B	(A) (B) (C) (D) (E)	Presently has access Has existing recreational (public) and/or private development Good quality and diversity of shoreline and backshore Good quality and diversity of recreational activities Good quality sports fishing	Graham Lake, Round Lake, Long Lake, Equisetum Lake, Peerless Lake, Goosegrass Lake, Gods Lake
C	(A) (B) (C) (D) (E)	Isolated in present access No existing recreational (public) and/or private development Fair quality and diversity of shoreline and backshore Fair quality and diversity of recreational activities Fair quality sports fishing	Goodfish Lake, West Twin Lake, Secound Last Lake, Hebephrenic Lake
D	(A) (B) (C) (D) (E)	Isolated in present access No existing recreational (public) and/or private development Poor quality and diversity of shoreline and backshore Poor quality and diversity of recreational activities Poor quality sports fishing	Quitting Lake, Last Lake, Skunk Lake, East Twin Lake, Kidney Lake, All other unnamed lakes with C.L.I, ratings.

NOTE:

TYPE B

Peerless Lake has all the criteria for a Type B Lake, plus the unique lake trout fishing.
God's Lake has all the criteria for a Type A Lake, except it presently has access which is why it was placed in Type B. The trophy status on the lake places it in the same category as Peerless Lake because of this unique feature.

* See Map I.



MAP 1

PEERLESS - GRAHAM LAKES

STUDY AREA

Scale 1 inch = 4 miles

LAKE CLASSIFICATIONS

'E' - Indicates lake type

Chart I on page 8 was compiled in order to facilitate the drawing up of the lake type recommendations. The activity types used in the matrix were compiled based on the history of recreational, industrial, private, and transportation activities which have occurred in the past within the area. Also, activities which may requ're future decisions regarding their acceptance within the area have been included. Together this list of activities were felt to cover all possible activities within the Peerless-Graham Lakes Management Area. The values for the acceptability of the activities per the different lake types were rated as permitted, non-permitted and restricted. The first two are self explanatory; the third value permits the activity to occur but places certain restrictions on this use. These are explained in a general way in the recommendations for each lake type as well as within the respective resource chapters.

LAKE TYPE RECOMMENDATIONS

Type A - These lakes are characterized by high recreational capability but have currently no vehicle access. The opportunities for development of this lake type would depend on opening the lake through access and developing the recreational potential. However, it is recommended that lakes within this category should remain in as pristine a condition as possible. Other lakes within the area have just as much to offer for recreational development and they are currently accessible by vehicle. Therefore, the recommendations for Type A lakes are restrictive and are designed to maintain the natural pristine integrity of the lake.

Extensive public recreation such as hiking, snowshoeing, cross country skiing, primitive camping, sportsfishing, ice fishing, hunting, low H.P. power boating, canoeing, and low impact camping facilities for extensive recreational campers are permitted.

Public intensive and private commercial intensive and extensive recreational

CHART I

LAKE CLASSIFICATION SYSTEM

RECOMMENDATIONS GUIDE

ACTIVITY	LAKE TYPE			
	TYPE A	TYPE B	TYPE C	TYPE D
Hiking	X	X	X	X
Snowshoeing	X	X	X	X
Cross Country Skiing	X	X	X	X
Primitive Camping	X	X	X	X
Sports Fishing	X	X	X	X
Commercial Fishing	X	X	X	X
Domestic Fishing	X	X	X	X
Hunting	X	X	X	X
A.T.V.'s (Snowmobiles etc.)	R	R	X	X
Boating (Power)	X	X	X	X
Canoeing	X	X	X	X
Trapping	X	X	X	X
Logging	R	R	R	X
Oil and Gas Exploration	R	R	R	X
Oil and Gas Development	R	R	R	X
Mineral Exploration	R	R	R	X
Mineral Development	R	R	R	X
Logging Road Construction	R	R	R	X
Oil and Gas Road Construction	R	R	R	X
Recreation Road Construction	N.P.	X	N.P.	X
Public Extensive Recreation	R	X	X	X
Public Intensive Recreation	N.P.	X	N.P.	N.P.
Urban Development(Cottaging)	N.P.	N.P.	N.P.	N.P.
Commercial Intensive Recreation	N.P.	N.P.*	N.P.	N.P.
Commercial Extensive Recreation	N.P.	N.P.*	N.P.	N.P.

X - Permitted Activity

R - Restricted Activity

N.P. - Non Permitted Activity

N.P.* - Non Permitted Activity. However, Native participation in development may be permitted.

development, such as major campsite, and tourist resorts are not considered permitted uses. Private ownership and rural cottage development are also not permitted.

Commercial fishing although permitted may require special regulations for the catch by the fish and wildlife branch, to ensure maintenance of high quality sports fishing. Domestic fishing is a permitted use since native fishing rights must be honoured. Commercial hunting may be considered a permitted use but only if the operation is run by the native people acting as guides and outfitters. No outside guide or outfitter should be permitted to set up a hunting facility. Trapping is permitted since its impact on the area is minimal.

Forestry operators have restrictions on access and cutting programs. These restrictions (see Forestry Chapter) are recommended in order to decrease the impact of forestry programs in the pristine character and proposed maintenance of this character for the lakes. For similar reasons, mineral, oil and gas exploration and development have had restrictions recommended on access by seismic line and well placement as well as future pipelines and road constructions (see Oil and Gas Chapter).

All types of access logging roads, seismic lines, recreational roads etc. have had restrictions on their development recommended in order to decrease the availability of the lake for recreational use. Also, these restrictions will act as safeguards against visual and aesthetic impairment of the pristine condition of the lake. Access is still provided to the lake by snowmobile during winter for ice fishing, and by the existing water route and old seismic lines during summer.

TYPE B - Lakes within this type currently have access and have undergone some form of development either private or public. This development may not be extensive, but the fact that some development does exist is evident. Therefore,

because of access, current development and the existence of good future recreational development potential, lakes within this type are recommended for programmed development.

Public intensive and extensive recreation development is recommended. This would include major developed campsites, trail systems for hiking, snowshoeing, cross country skiing, snowmobiling, primitive camping, sports-fishing, hunting, power boating, and canoeing. In order to develop these facilities recreation road construction is permitted but environmental and existing road development constraints apply. The roads should be designed as recreational service roads and not as major secondary or throughfare routes.

Commercial intensive and extensive recreation as well as urban development (cottaging and subdivision) are non permitted uses for this lake type. However, within their existing settlement areas the native people may be permitted, under a controlled program, to develop intensive and extensive recreational facilities. These facilities should be in accord with the surrounding public facilities and the capabilities of their location. (At the present time, demand on the various lakes does not require a major commercial recreation development).

Industrial activities such as logging, logging road construction, mineral, oil and gas exploration, and development as well as road construction are acceptable uses but have recommended restrictions on their development. The restrictions are generally less rigid (see Forestry and Oil and Gas Chapters) than around type A lakes but require greater co-operation in timing and development. This is due to the fact that future recreational facility development, road construction and access as well as the visual and aesthetic qualities of the lakes must be programmed into the industrial operations. Commercial and domestic fishing are permitted lake uses under the existing

fishing regulations. Trapping is also a permitted use since little impact is associated with this activity and the desired lake development.

God's Lake - God's Lake, although included within the type B lakes has special significance due to the "trophy lake" status applied to it by the Department of Parks, Recreation, and Wildlife. This lake, although access does exist, should be provided with a minimal amount of extensive recreational facilities. The development should not encourage recreationalists to use the lake as an end destination point in their holidays. It should be designed only to provide the basic needs for the occasional recreational fisherman who is capable of negotiating the poor access. Therefore, access should remain low grade. Extensive campgrounds and development are not considered compatible with the trophy lake status of the lake.

TYPE C - Currently no access or public nor private development exists, but good quality recreational potential and development could occur.

It is recommended that public extensive recreation be permitted such as hiking, snowshoeing, cross country skiing, sports fishing, hunting, boating, and canoeing. The facilities for camping etc. should be low impact and provide the minimal requirements for the recreationalist.

Recreational road construction, intensive public and commercial development, extensive commercial development and urban development (cottaging, subdivision) are not recommended as permitted uses.

Industrial uses such as logging, logging road construction, mineral, oil and gas exploration, and development and road construction are permitted but restrictions are recommended on their operations. (Forestry and Oil and Gas Chapter). Basically the restrictions apply to maintaining the isolated nature of these lakes, therefore, the access such as logging road construction and seismic lines are important considerations in the recommendations. The recommendations are basically more flexible and less restrictive than around Type A and B lakes.

Commercial and domestic fishing are permitted within their existing regulations.

Trapping is also a compatible resource use. Sports hunting is permitted but it is recommended that any commercial hunting activities which may occur on these lakes be restricted to native guide and outfitting programs and not outside outfitters.

Winter recreation such as ice fishing is permitted as well as snowmobile use. The use of A.T.V.'s to get into the lakes is also permitted. It is felt that by restricting the type of access (seismic lines, logging roads, etc.) to or near the lakes, the amount of A.T.V. use to get to these lakes will be reduced.

TYPE D - This lake type has minimal possibilities for recreation development. Most uses are permitted with the understanding that resource constraints will eliminate any possible uses for the area. The major constraints for this lake type are environmental. Existing regulations governing industrial, commercial, and private development are felt to be enough to safeguard this lake type.

However, in order to avoid misunderstandings, the following activities are recommended as non permitted uses. Public intensive and extensive development, urban development (cottaging, subdivision) commercial intensive and extensive recreation.

ALGAE CONDITIONS

DISCUSSION

The algae conditions for the Peerless-Graham Lakes Study were monitored with respect to their impact on the recreational uses of the lakes as opposed to their biological implications for fisheries. As such, no attempt was made to determine individual species or even their respective compositions within the algae complex. The algae conditions were observations taken of the different lakes throughout the study period with reference to the existance and abundance of algae in a lake over time. (Table III) The existance of the various species of phytoplankton, zooplankton and diatoms which can be found in these lakes is well documented in the Preliminary Biological Survey Reports on the waters of the area which was carried out in 1968-69 by the Fisheries Branch of the Department of Parks, Recreation and Wildlife.

The water bodies in this region are ice locked from freeze-up to mid-May. By this time all the lakes with the exception of the larger waters which may have isolated patchs of free floating ice have begun the warming process and thermal mixing of their waters. At the same time mineral-nutrient mixing of the waters and added sources of mineralized and nutrient enriched water from the spring runoff combine with the increasing water temperatures to trigger an increased algae activity from the winter months.

Algae growth is largely dependent upon these two key factors. As such, the quicker the lake warms up the quicker the response by the algae, provided sufficient nutrients are available. The rate at which a lake warms up after freeze-up is dependent upon a number of factors. Weather conditions are an important aspect but in this region it appears that

the size of the lake and volume of water required to be heated are the initial concerns. Later in the summer after thermal stratification has occurred, (in some lakes this may not occur because of inadequate depth) prolonged hot spells are important to develop algae conditions. Therefore the smaller and shallower lakes such as Goosegrass, East Twin, Kidney, and Goodfish show the earliest signs of algae growth. This is early in the summer about the middle of June. By the end of June the larger lakes have begun to show signs of algae growth. Round Lake, Equisetum, and Long Lake showed positive signs of algae increase at this time. It is expected that God's Lake and Vandersteen Lake and certain areas of Graham Lake, especially the shallower northern arm, also are included in this time period. However, their inaccessibility and in the case of Graham Lake its large size made it difficult to determine the respective timing.

The evidence of algae growth discussed at this time is simply the visual appearance of the algae especially the blue-green and brown types. Large blooms are not in evidence at this time nor is accumulation on the shores. Peerless Lake, because of size and depth, does not experience the major bloom conditions observed on the other lakes. Some parts of Peerless may have a significant algae growth but the majority of the area is relatively algae free throughout the summer. This makes Peeless Lake rather unique. The beach areas especially those on the eastern and northern shores do not receive large accumulations of dead algae from wind and wave action. The condition occurs in all the other lakes throughout the summer months right up until the beginning of September.

The summer months of July and August figure heavily when discussing algae conditions with respect to recreation activities. These two months will, in the future, be the time period for which recreational activities will be the heaviest. Beaching activities will be a major enjoyment for many of the visitors and as such the enjoyment of the beach will depend on the cleanliness of the beach. It is quite possible that some beaching activity will be lost during this time period because of algae on the beaches. The wind and wave action during these months determines the extent to which a particular part of a shoreline will be affected by the algae. A strong wind and wave action which one day will keep the algae away from a particular shore may change direction the next day and pile the shoreline with algae and debris. This has shown to be the case many times. The algae is ever present during these months, the quantity being dependent on the weather. After a two or three day warm spell the algae in the lakes increase measurably and subsequent build up of algae on the beaches occurs. This happens in all the lake (except Peerless Lake) and will have to be accepted by the recreationlists and managers.

The existance of the "standing stock" as it were, of algae during this time reduces the visibility in the water a great deal. The visual range for objects during the spring is about 3 meters. This reduces during July and August to about ½ meter. A significant decrease in visibility as well as desirability for swimming.

It may be important to note that the fishing success decreases noticeably during this time. Only lures with high light reflecting capability have been successful in catching fish during this time. This may be partially

attributed to the decrease in visibility.

The algae conditions continue until early to mid-September when the daily air temperatures begin to drop as well as the water temperatures. However spells of hot sunny weather will produce fairly heavy algae conditions once again.

CONCLUSION

The algae conditions in the majority of the lakes is a significant condition with which the recreationalists will have to accept as unavoidable if they wish to use the area. The managers and planners for the region will have to attempt to locate campsites with associated beach activity where the major wind systems will be able to keep the beach areas relatively free from algae. However, a large number of existing beaches are located in the direct path of the prevailing wind systems found in the area. As such, it will be difficult to develop these sites for recreational use and have them debris and algae free. This discussion should not leave the impression of foul algae covered beaches throughout the area. This is only the case during certain periods of time and given the right environmental conditions. The beaches and shores of the lakes for the most part are kept clean by the wave action and periodic water level increases in the lakes. Indeed this is the case for the majority of the time but the existance of the problem of algae accumulation is significant and can not be ignored. It must be accepted by both the managers of the area and future recreational users.

ALGAE CONDITIONS

TABLE III

Lake	Description
Goosegrass	Clear until mid-June in 1974 and 1975 but algae observed in late June, July, August and September. The algae growth is sporadic in September and late August.
God's	Unknown, would expect algae to build up about the middle or end of June.
Second Last	Unknown.
Heberphrenic	Unknown.
Skunk	Unknown, however, fairly shallow and undoubtedly warms up early and has a high amount of algae.
Kidney	No algae in early June 1974, but expect growth to occur by the end of June through until early September.
East and West Twin	No algae in early June 1974, algae condition may occur sooner on East Twin than for West Twin due to its shallower depth and possibility of warming up sooner.
Round	No algae until mid-June 1974 and 1975, but algae increased to heavy amounts during July and August with periodic highs during September in both 1974 and 1975.
Equisetum	No evidence of algae until mid-June 1974 and 1975. Gradual increase during July and heavy during the end of July and August. Gradually decreasing during the later part of August and September.
Long	Similar timing to Equisetum and Round Lakes during 1974 and 1975.
Goodfish	Shortly after Equisetum showed signs of algae. Goodfish also had evidence of algae growth.
Peerless	Relatively algae free throughout the summer but some small amounts observed periodically. This situation occurred during both the summers of study.

Graham	End of June beginning of July (1974-75) algae first encountered, becomes fairly extensive throughout the lake by August and early September.
Vandersteen	End of June 1974, evidence of algae heavy during July and August, decreasing during September.

CHAPTER 2

RECREATION

RECREATION

INTRODUCTION

The recreation resource in the Peerless Lake area has been recognized as having great potential for development. In order to insure wise use of this resource a proposed development plan has been prepared. The recommendations were prepared by the Recreation Section of the Forest Land Use Branch after consultation with members of the Slave Lake Forest and Multiple Use Planning Section.

It is felt that development should occur at some sites immediately and, as the need arises, future sites should be brought on line. Improved access will be the key to the timing of future development. However it is impossible to determine when such access will reach the area. Therefore it is impossible to impose recommended development times on the major site improvements. The following information will detail recommended procedures and outline reasons for such suggestions.

RESOURCE SOURCES

These recommendations were made based on the following information. A detailed soil survey was prepared for the major lakes shorelines to a distance of approximately 1/2 mile. This was prepared under contract with the Alberta Research Council. Detailed forest cover maps (PHASE III INVENTORY) specifically done for our area, the recreation user survey of 1974, backshore and offshore survey data were also essential inputs to the recommendations. The final decisions on the recommendations were prepared only after meetings between Slave Lake Forest and Recreation Section of the Forest Land Use Branch were held.

RECOMMENDATIONS

Existing and Projected Use

In order to determine the type of facility required immediately, the short term demand must be studied. The 1974 User Survey showed that:

A) 89% of the summer visitors listed recreation as their trip purpose.

B) 70% of the summer visitors were male.

C) All male user groups accounted for 41.3% of the user nights.

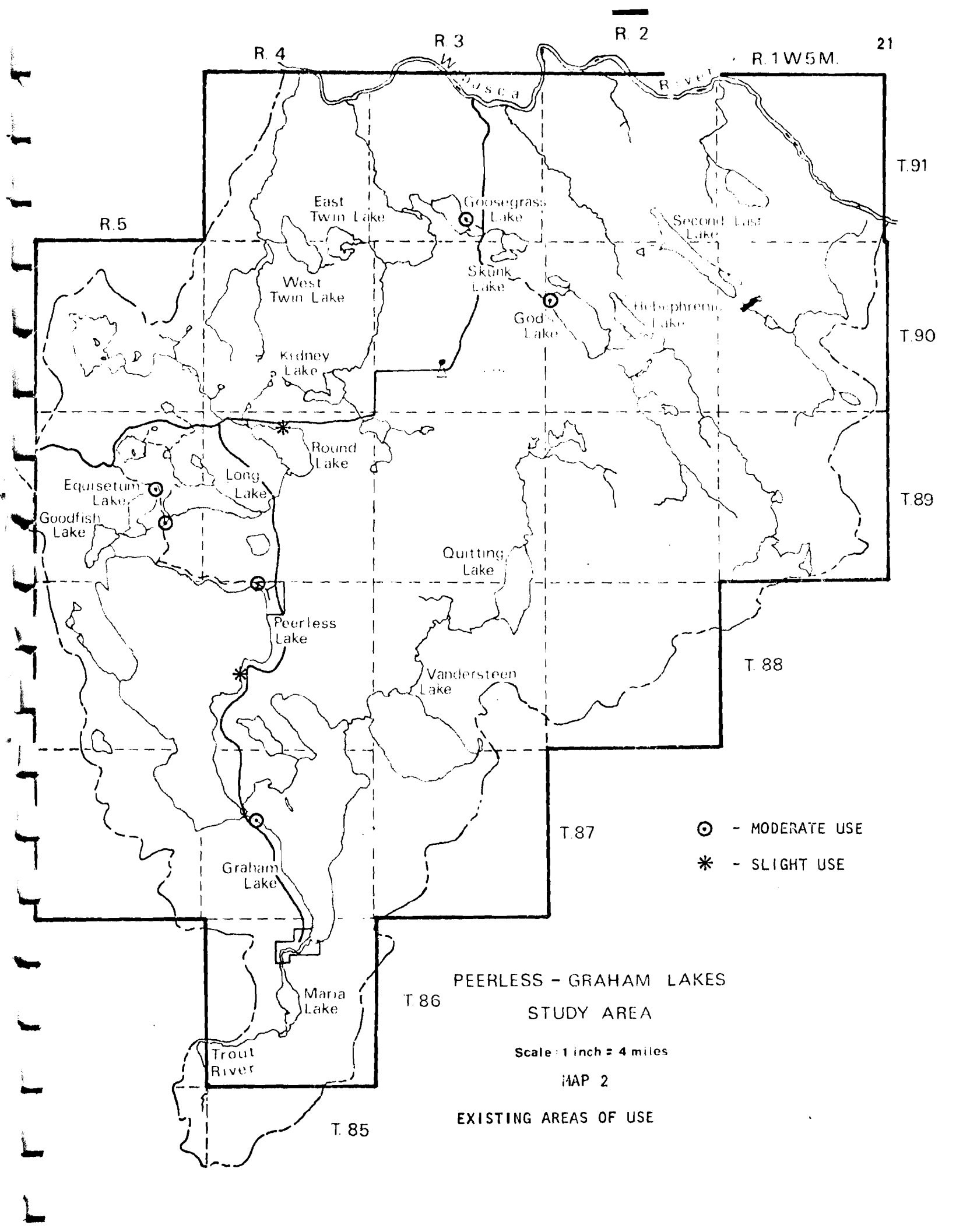
D) Use in the area was heaviest from May 30 to June 26 and was composed of predominatly male groups.

Based on this information it was felt that the existing demand for campsites in the area was from lake trout fishermen (the trout fishing is best in late May or early June). Lake trout are found only in Peerless Lake and at this time of year in the vicinity of a small island near the east-central shoreline.

Further examination of the user data showed a low but sustained demand for a variety of sites in the study area. The most popular mid to late summer campsite was Round Lake. Users of this site tended to be families that either fished for walleye and pike in Round Lake or travelled the 12 miles to Goosegrass Lake for a day of fishing for pike and perch. Map 2 shows the existing patterns of camping in the study area.

In order to project possible future use two basic assumptions were considered:

1. Access will improve
2. Fishing will deteriorate


R. 4
R. 3
R. 2
R. 1W5M.
21
T.91
T.90
T.89
T. 88
T.87
T.86
T. 85
R.5
East Twin Lake
Goosegrass Lake
Second East Lake
West Twin Lake
Skunk Lake
God's Lake
Kidney Lake
Round Lake
Long Lake
Equisetum Lake
Goodfish Lake
Quitting Lake
Peerless Lake
Vandersteen Lake
Graham Lake
Maria Lake
Trout River
⊙ - MODERATE USE
* - SLIGHT USE
PEERLESS - GRAHAM LAKES
STUDY AREA
Scale : 1 inch = 4 miles
MAP 2
EXISTING AREAS OF USE

Looking at other similar situations within the Province the latter assumption seems safe enough, but it hinges on the former assumption concerning access. The chapter on transportation includes a reference to Secondary Road 686 which will provide easy access to this region in years to come.

It is felt that the emphasis will shift away from the "fishing only" aspect of the area to the excellent beaches that many of the lakes offer. The Long, Equisetum and North Peerless Lakes area has the greatest concentration of Class I (C.L.I) and Class II (C.L.I) beaches in the study area. Family activities such as boating, swimming, waterskiing and sunbathing will begin to be paramount to the area's fishery. Fishing will still rank high as a pursuit, however it is felt that it will slip in relation to these other uses.

Site Selection and Development

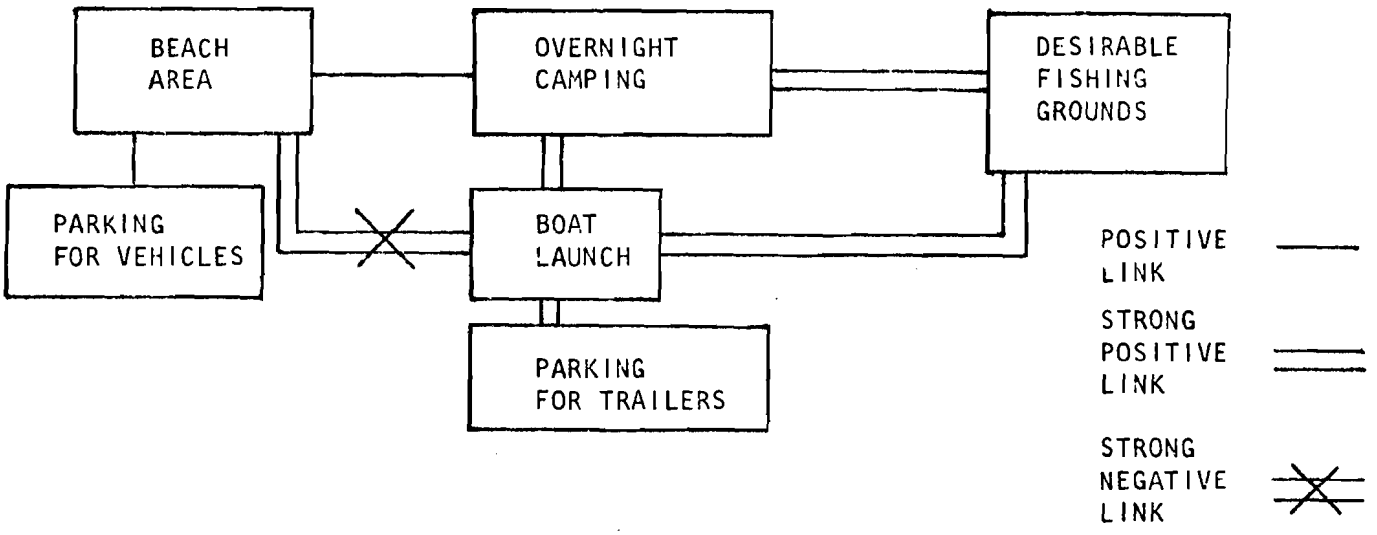
With the existing and projected use information in mind the following sites are recommended for development consideration.

The initial development must provide facilities for lake trout fishermen, since it is their use which constitutes more than 50% of the recreational demand in the study area at present. To be satisfactory for these users, the site must be located in close proximity to the popular "fishing grounds" near the island in Peerless Lake.

An examination of the soils data showed two shoreland locations of the most desirable soil class on the east shore of Peerless Lake. Field inspection revealed that one of these areas was subject to a high water

table and was unsuitable for development. The other site, however, was good. Fishermen in the area have been using this location already, so there is no question regarding its predicted popularity. Associated with this second location is a Class I (C.L.I) beach. Figure I shows the schematic plan for development of this area.

EAST PEERLESS RECREATION AREA SCHEMATIC PLAN (FIGURE I)



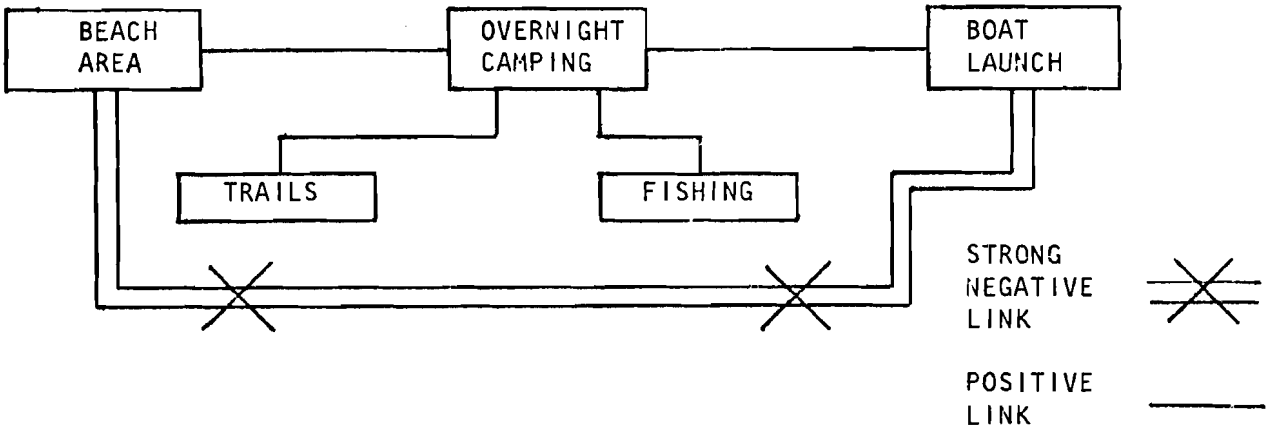
Construction should provide 20 overnight units, a boat launch, boat trailers parking, and parking for people who wish only to use the beach. There will be no provision for expansion of this facility, since it occupies a small strip of land between a road and the lakeshore, and should eventually be supplemented by a major development on the north end of Peerless Lake.

Round Lake offers another opportunity for development. This site should be developed concurrent with, or following, construction of the East Peerless Lake site. There should be more emphasis here for family

oriented activities. A trail could be developed to an excellent beach in the northeast corner of the lake which would provide families with swimming and other outdoor activities.

The development at this site should take place in stages. The first stage would provide approximately 20 units for overnight camping, a boat launch and a parking area for boat trailers. Later stages would develop more overnight units, trails and a more elaborate docking facility. These improvements would be necessary as demand increased. Figure II shows the schematic plan for development of the Round Lake site.

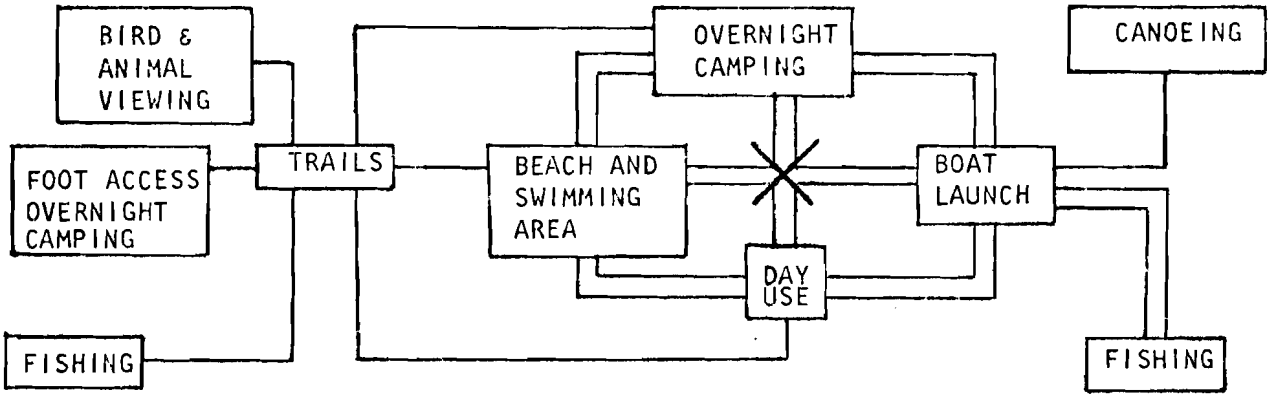
ROUND LAKE RECREATION AREA SCHEMATIC PLAN (FIGURE II)



When major access is established into the area, a large scale recreational development will be required. It is recommended that the North Peerless, Long, Equisetuim and Goodfish area be developed to accomodate this recreational demand. The area offers a Class I (C.L.I) beach in conjunction with the most desirable soil class for development. Equisetum and Long Lakes are joined by a piece of Class II beach associated with developable backshore. This area would be phased in slowly, with campgrounds developed as they are required. The feeder road to individual

campground loops should enter from the west end of the area and lead as far east as the North Peerless site. If the present situation is an indication of future conflicts in the area, this feeder road should not go all the way through to the Peerless Lake Settlement. A schematic of the North Peerless site is shown in Figure III.

NORTH PEERLESS LAKE RECREATION AREA SCHEMATIC PLAN (FIGURE III)



This site should be much more complex than either of the initial developments. Catering primarily to family groups it will have to provide for a wide range of activities from bathing to fishing and hiking. Facilities may be developed on the more desirable sites with the feeder road leading from one development to the next. Access to the beaches should be by footpath only, to reduce impact on the sensitive backshores of these beaches.

Several areas were singled out as non development sites Goosegrass lake, God's Lake and Vandersteen Lake are all areas that should not be developed in the immediate future. Graham Lake, by virtue of its proxemity to Vandersteen and also its bird colony, should also be left undeveloped.

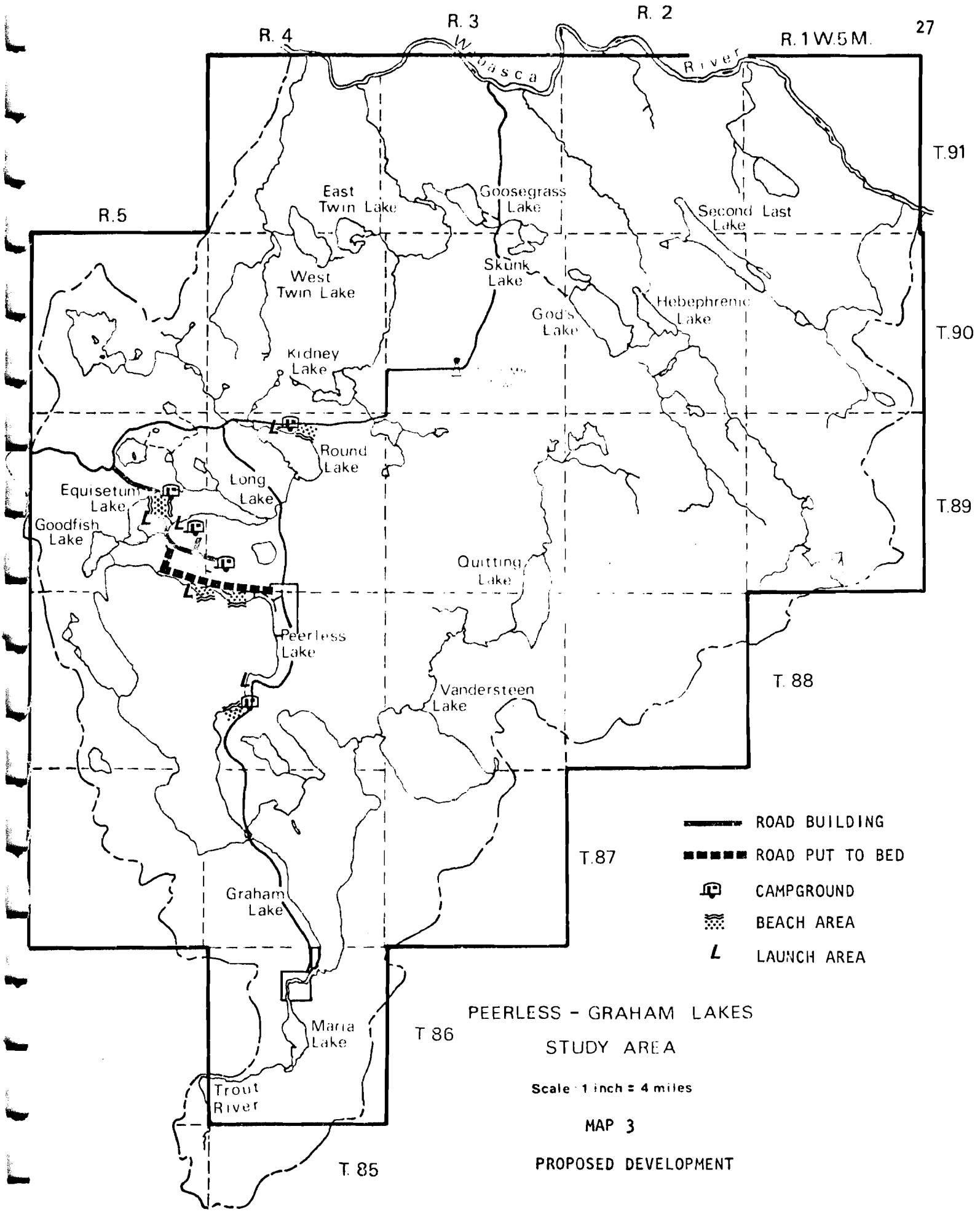
Road construction will play a major role in the development of this region. S.R. 686 will eventually link Peace River and Fort McMurray (See Transportation Chapter). The intended route for this road will take it through Trout Lake. Discussion at the planning meeting centered around this road proposal and its relationship to the development of the North Peerless area. The most desirable route in relation to recreational development would be for the road to come from Red Earth along the existing forestry road and head east past the tower. The new road would then continue east from the point where the existing road swings north. (Land Use Map).

This access would not increase north-south traffic on the Peerless Lake Settlement to Trout Lake Settlement road. It would also permit access to the North Peerless site to come from the west. Access from this direction would not link up with the existing Peerless Lake Settlement road. This would reduce possibilities of confrontation between recreationalists and local residents.

Actual site planning will be done by Slave Lake field personnel with the assistance of the Recreation Section. The complex at the north end of Peerless Lake, enclosed by Equisetum and Long Lakes could accommodate upwards of 300 units. It is, however, unlikely to reach such dimensions while under the control of the forest service. Recommended development is shown on Map 3.

SUMMARY

Work at the East Peerless site should be considered at once, before the area is seriously degraded by existing uncontrolled use. The



PEERLESS - GRAHAM LAKES

STUDY AREA

Scale 1 inch = 4 miles

MAP 3

PROPOSED DEVELOPMENT

site on Round Lake should be developed concurrent with, or following completion of the East Peerless site.

The North Peerless Lake area should be ready for usage when SR 686 is completed. Discussions on the SR 686 route should be reopened in the hope of using the northern route and providing access to the North Peerless site from the west. This route would also reduce possible conflicts which may arise by routing traffic through Trout Lake.

Labour should be hired from the iocal settlements in the area. Caretaking duties should also be handled by the natives when the facilities are completed.

RECREATIONAL BOATING

INTRODUCTION

Water based activities are currently the greatest attraction in the Peerless Lakes study area and will undoubtedly form the greatest amount of recreational activity in the future.
Boating is now and will remain to be a major concern. Therefore it was considered essential that a discussion of boating activities be included in the Peerless-Graham Lakes study.

RESOURCE SOURCES

No source of information exists specifically outlining boating as a resource. The discussion on the boating activity in the Peerless-Graham Lakes study area is based on current recreational boating activities within Alberta and observations made while in the field, specifically information gathered during the recreational survey.

RECOMMENDATIONS

Currently access is limiting the types and numbers of boats in the area. There are no conflicts between the numbers and types of boats used and no conflict between the recreational users of the lakes. The majority of the boat types used in the area can be categorized as "car toppers" or small trailer fishing boats. The average size is between 12' - 16' in length and generally the motor ratings are below 25 hp. This does not include canoes. Few visitors to the area used canoes since most were interested in fishing.

The access, because of poor roads, made it difficult to haul larger boats with greater motor capacities into the area. However, as roads improve, more and larger craft can be expected to use the lakes. At that time an assessment should be made regarding the lakes for which large power boats should be permitted or excluded. It may be necessary that a restriction of motor size be initiated.

At the present time, there is a need for boat launching facilities to be set up for those fishermen bringing either car toppers or trailered boats. These sites should be located at Round Lake and Peerless Lake. It is intended that these become permanent structures with future camping facilities developed nearby. The launch site on Peerless Lake should be close to the present but non-regulated camping at the area called the Point. The conflicts which exist in the other lakes between boaters and other lake users such as cottagers, swimmers and waterskiers is currently non-existent in the area and is not expected to become a problem. It is not recommended that cottage development take place on any of the lakes in the study region. The beaching activities will be limited by water temperature, air temperature, prevailing winds and insects to only brief periods throughout the vacationing season. The waterskiing, because of these same limitations, will be limited. Therefore the conflicts between lake users will be reduced by these natural constraints.

There are a number of areas on the lakes which should receive immediate protection from boaters. The large island in Graham Lakes is a nesting-breeding ground for a large number of birds. This island should be protected from disturbance through the placement of a restricted zone around the island.

There are certain areas throughout Peerless and Graham Lakes which should be marked by flags or buoys to warn of shallows and shoals. The south end of Peerless Lake and the area between the island and mainland are particularly dangerous. Also the area at the mouth of the bay from Vandersteen Lake and between the island is also hazardous to boaters. Although few canoeists use the area there is some potential for canoeing. The lake surfaces are the main sources for canoeing with little potential for stream or river routes. The majority of the streams and creeks in this area are extremely small and cannot be navigated by canoe. A canoe system could be developed from Equisetum Lake to Goodfish Lake, Goodfish Lake to Peerless Lake and through the narrows into Graham Lake, then down to the Graham Lakes Settlement. This route would take about one to two days and possibly require the establishment of an overnight camping area. However, it would involve some degree of risk since a large part of the route would be along lakes. The wind and wave action which occurs on these lakes makes for dangerous water conditions. Even the lee shore of the water body cannot always be relied upon. Also, at present, no starting point at Equisetum Lake exists. The access to this lake is currently very bad and at certain times impossible.

The creek between Round Lake and Long Lake is too narrow and unnavigatable for canoeing. Also the creek between Long Lake and Equisetum Lake is choked by beaver ponds and weed growth.

Vandersteen Creek which joins Vandersteen Lake and Graham Lake is navigatable by canoe during most of the year. Water conditions become very low during the summer and a couple of small but easily navigated beaver dams block passage.

There is no access to the area and no plans for development of a road are recommended.

The Wabasca River on the northern boundary of the study offers the best canoeing possibility. However, access is often difficult and the area would have to be used as a take-out or departure point for canoe trips.

In general canoeing within the study region is fairly limited. The lakes afford the major area for canoeing but must be reviewed with caution due to the potentially dangerous conditions of wind-wave action.

CHAPTER 3

FORESTRY

TIMBER RESOURCE

INTRODUCTION

The timber resource is one of the more important resources in the Peerless-Graham Lakes area. However, in the last six to eight years the area's recreational potential has begun to be recognized and as a result there has been a substantial increase in the recreational use of the area.

It is the objective of the Timber Resource Chapter to illustrate how the timber resource in the Peerless-Graham Lakes area can be managed to protect and in some cases enhance the recreational potential while at the same time continuing to be a harvestable resource supporting the area's major extractive industry.

This Timber Resource Chapter is incomplete, as evidenced by lack of coniferous smallwood and deciduous timber planning, silvicultural input and other items. Thus, it will require revision at a later date to incorporate omitted data. The appended information proposes future Timber Management input to the multiple use planning process.

RESOURCE SOURCES

The timber resource information for the Peerless-Graham Lakes area was supplied by the Alberta Forest Service. The information was obtained primarily through the Slave Lake Forest and included maps of the two associated Forest Management Units, S11 and S14, as well as all existing forest inventory, Quota ownership rights and current sawlog cutting progression information for both Management Units. From this information it was decided that the basic unit of discussion would be individual cut plan areas. These cut plan

areas are established during the initial phases of a Forest Management Plan approved by the Assistant Deputy Minister, Alberta Forest Service and Director of Timber Management Branch, and are the areas in which timber harvesting is scheduled to take place. (See Timber Resource Atlas for map of cut plan areas.) The next timber management stage is reforestation establishment primarily by forest site preparation (scarification, etc.) and natural seeding, with planting to follow in fail areas. The harvest system policy is primarily 50% removal by the first cut with retention of the intervening timber until the coniferous regeneration is satisfactorily established and at least six to eight feet in height for wildlife cover or to a maximum retention period of 20 years.

Example:

Cut Plan Area Number: Each cut plan area (C.P.) of the Peerless-Graham Lakes study area within Management Units S11 and S14 is mentioned. The location of the C.P.'s was derived from the current Forest Management Plans for the Management Units and thus is initially for Quota sawlog utilization planning to the late 1980's and more intensive utilization thereafter.

The S11 and S14 Forest Management plans as well as those for all other Forest Management Units are due for revision prior to April 30, 1986, based on updated photography and forest cover mapping to Phase III specifications.

Quota: Derived from forest resource information supplied by Slave Lake Forest, Alberta Forest Service.

Quota Holder: Same as above

Total Merchantable Sawlog Volume: This information was obtained from the late 1960's Quota Reconnaissance cruise phase of the Forest Management Plans for S11 and S14. (Volumes are reduced from gross to net).

Annual Cut: This information was obtained from the Forest Management Plans for S11 and S14.

Approximate Duration of Operations: Information derived by dividing the net Total Merchantable Volume by the Annual Cut.

Associated Water Body: This information was obtained from the various maps of the area.

Lake Classification: This information is based on the system of Lake classification proposed by the Mutiple Use Planning Section, which is found in the Watershed chapter.

Length of Shoreline in C.P. Areas: This information was obtained from the various maps of the area.

Shoreline Recreation Capability: Information obtained from the Canada Land Inventory - Peerless Lake Sheet.

Shoreline Survey Transect Number: The Shoreline Survey was done in June, 1974, by a team consisting of members from the A.F.S. Slave Lake Forest, the Forest Land Use Branch - Multiple Use Planning Section, Recreation Section and Provincial Parks. This information was used as reference for basing many of the site specific recommendations concerning harvesting operations.

Associated Land Uses: This information was obtained from the various agencies associated with the other land uses in the area such as the petroleum and natural gas interests. These associated land uses were used as an additional reference on which to base the harvesting recommendations.

Unique Features: This information was obtained from personal knowledge of the Study Area and was a major reference used as the basis for the harvesting recommendations.

Timber Harvesting Recommendations: The recommendations made have been based on all of the previous information that was applicable, as well as a personal knowledge of the area.

In addition to the above information, Phase III Forest Cover maps were used to locate within the Cut Plan Areas the most probable locations in which timber harvesting would take place.

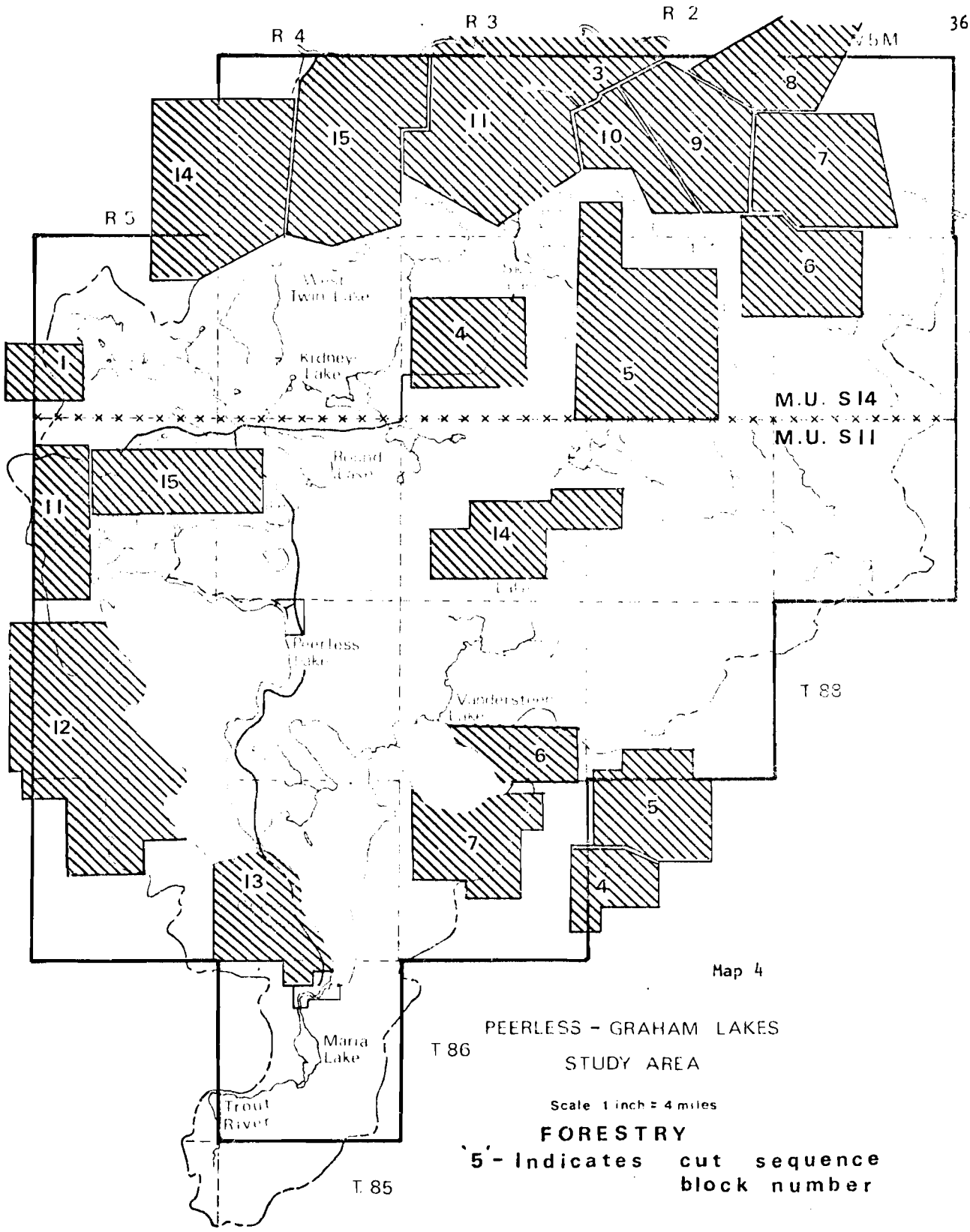
RECOMMENDATIONS

Management Unit S11

Harvesting operations have been carried out by several different companies since the Coniferous Timber Quota (S11 - Q1) was sold by the Department and established in 1968. Since the Quota establishment, Wabasca Co-op Association Ltd. has been the Quota holder. The tentative cutting sequence in M.U. S11 was established to follow the numbering of the Cut Plan Areas. (See Map).

Cut Plan Area 1,2,3

Special recommendations are unnecessary for these three C.P.'s because harvesting operations have been completed.



Map 4

PEERLESS - GRAHAM LAKES

STUDY AREA

Scale 1 inch = 4 miles

FORESTRY

'5' - Indicates cut sequence block number

Cut Plan Area 4 and 5

Coniferous Timber Quota: S11-Q1

Quota Holder: Wabasca Co-op Association Ltd.

Total Merchantable Volume: C.P. 4 11,901 MFBM

C.P. 5 14,621 MFBM

Annual Cut: 6.2 MMFBM

Approximate Duration of Operations: 2 years at 50% removal

Associated Water Body: N/A

Lake Classification: N/A

Length of Shoreline in C.P. 4 and 5: N/A

Shoreline Recreation Capability (CLI): N/A

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: N/A

Unique Features: N/A

Timber Harvesting Recommendations: Existing ground rules will sufficiently govern harvesting operations in these two C.P. Areas because they are located outside the Study Area boundary and present no major concerns to the study itself.

Cut Plan Area 6

Coniferous Timber Quota: S11-Q1

Quota Holder: Wabasca Co-op Association Ltd.

Total Merchantable Volume: 4,709 MFBM

Annual Cut: 6.2 MMFBM

Approximate Duration of Operations: ½ year at 50% removal

Associated Water Body: Vandersteen Lake

Lake Classification: Type A

Length of Shoreline in C.P. 6: 3 miles

Shoreline Recreation Capability (CLI): Class 1 - ½ mile

Class 2 - ½ mile

Class 3 - 2 miles

Shoreline Survey Transect Numbers: 12-16

Associated Land Uses: Petroleum and Natural Gas Reservations

Chevron Standard Ltd. Reservation #1927

Petrofina Canada Ltd. Reservation #1628

Unique Features: Vandersteen Lake has been classed as a Type A lake because of its isolated nature, high quality sportsfishing and its wilderness setting. (See Watershed chapter). In the summer months, it can be reached only by foot or by boat and as a result has been subject to very little recreational use. However, it appears that each year more and more recreationalists are visiting the lake as word of its high quality sportsfishing and its pristine wilderness setting spreads. An eagle nesting area is found in the south of the C.P. Area.

Timber Harvesting Recommendations: Because of Vandersteen Lake's high quality sportsfishing and its wilderness setting, the special harvesting recommendations were made to help protect these assets and to maintain the Type A Lake classification.

Although there are very few merchantable stands of timber within a half mile of the lakeshore in this block, it is recommended that no disturbance of any kind be made within one half mile of the lakeshore. This will allow for the preservation of the lake's wilderness state.

Existing ground rules will sufficiently govern harvesting operations in the remaining portions of the C.P. Area.

Cut Plan Area 7

Coniferous Timber Quota: S11-01

Quota Holder: Wabasca Co-op Association Ltd.

Total Merchantable Volume: 26,071 MFBM

Annual Cut: 6.2 MMFBM

Approximate Duration of Operations: 2 years at 50% removal

Associated Water Body: Vandersteen Lake

Lake Classification: Type A

Length of Shoreline in C.P. 7: 3 miles

Shoreline Recreation Capability (CLI): Class 1 - ½ mile

Class 2 - 1 mile

Class 3 - 1½ miles

Shoreline Survey Transect Numbers: 5-11

Associated Uses: Petroleum and Natural Gas Reservations

Petrofina Canada Ltd. Reservation #1628

Unique Features: In addition to the features mentioned for Vandersteen Lake in Cut Plan Area 6, the southern shore of the lake is covered by large stands of merchantable timber.

Timber Harvesting Recommendations: As previously stated, the shoreline of Vandersteen Lake in Block 7 has a large volume of timber along its entirety. However, it is recommended that the existing 5 chain buffer zone along the lake shore be extended to the top of the rise of land to the south of the lake. Within the extended area it is recommended that proper aesthetic consideration by given during road location and harvesting to help preserve the visual aesthetics of the area for the visiting recreationalists. One final recommendation is that no disturbance of any kind be made within 5 chains of the lakeshore and that improved access to the lake be as limited as possible; that is, existing trails and seismic lines should be used whenever possible when gaining access to areas to be harvested.

Cut Plan Area 8,9,10

Coniferous Timber Quota: S11-Q1

Quota Holder: Wabasca Co-op Association Ltd.

Total Merchantable Volume: C.P. 8 14,592 MFBM

C.P. 9 2,747 MFBM

C.P. 10 7,089 MFBM

24,428 MFBM

Annual Cut: 6.2 MMFBM

Approximate Duration of Operations: 2 years at 50% removal

Associated Water Body: N/A

Lake Classification: N/A

Length of Shoreline in C.P.'s 8,9,10: N/A

Shoreline Recreation Capability: N/A

Shoreline Survey Transect Numbers: N/A

Unique Features: N/A

Timber Harvesting Recommendations: Harvesting operations are to be carried out simultaneously in these three C.P.'s and special recommendations are unnecessary because the C.P.'s are located outside the Study Area and present no major concerns to the Study itself.

Cut Plan Area 11

Coniferous Timber Quota: S11-Q1

Quota Holder: Wabasca Co-op Association Ltd.

Total Merchantable Volume: 10,074 MFBM

Annual Cut: 6.2 MMFBM

Approximate Duration of Operations: 1 year at 50% removal

Associated Water Body: Goodfish Lake

Lake Classification: Type C

Length of Shoreline in C.P. 11: 2 3/4 miles

Shoreline Recreation Capability (CLI): Class 4 - 1 3/8 miles

Class 5 - 1 3/8 miles

Shoreline Survey Transect Numbers: 3-6

Associated Land Uses: Petroleum and Natural Gas Leases

Texaco Exploration Canada Ltd. Lease #120892

Unique Features: Goodfish Lake is a relatively isolated lake and can be reached by boat from either Equisetum Lake or the north end of Peerless Lake. The potential for sportsfishing is not as high as many of the surrounding lakes, but the lake is approximately the halfway point on a proposed canoe route from Long Lake or Equisetum Lake to the north end of Peerless Lake. Much of the north and northwest shoreline was subject to a fire in 1972, which detracts from the area's aesthetic value, however the west and southwest shorelines posses a good potential for hiking trails as well as good panoramic views of both Goodfish and Peerless Lakes.

Timber Harvesting Recommendations: The majority of the merchantable stands of timber in this C.P. are located along the west and south boundaries of the C.P. as well as along the west and south shores of Goodfish Lake. However, a fire in 1972 burned over one-half of the stands located near the lake. This means that harvesting operations will likely be minimized in that area.

It is recommended that the 5 chain buffer zone, as stated in existing ground rules, be extended to 15 chains with proper aesthetic consideration given road location and harvesting in the extended 10 chains. No disturbance of any kind should be allowed within the first 5 chains for the shoreline of Goodfish Lake. This recommendation will help to protect the visual aesthetics of the area as well as limit improved access to the west shore of the lake.

Another area of concern in C.P. 11 is the stretch of the Trout Mountain Road in the northern part of the block. At the present time the road is used mostly by the residents of Peerless and Graham Lakes Settlements. However, oil is hauled by truck occasionally from the Senex Oil Field during the winter months and during the summer months the Trout Mountain Road is used for access

to the various lakes by recreationalists visiting the area. Although there are very few stands of merchantable timber located along the stretch of road in C.P. 11, it is recommended that if harvesting is to take place, a sufficient windfirm buffer zone be left along the right of way to preserve the visual aesthetics of the road.

Cut Plan Area 12

Coniferous Timber Quota: S11-Q1

Quota Holder: Wabasca Co-op Association Ltd.

Total Merchantable Volume: 48,980 MFBM

Annual Cut: 6.2 MMFBM

Approximate Duration of Operations: 4 years at 50% removal

Associated Water Body: Peerless Lake

Lake Classification: Type B

Length of Shoreline in C.P. 12: 8½ miles

Shoreline Recreation Capability (CLI): Class 2 - ¼ mile

Class 3 - 4¼ miles

Class 4 - 4 miles

Shoreline Survey Transect Numbers:

Associated Land Uses: Petroleum and Natural Gas Leases

Texaco Exploration Canada Ltd. Lease No.'s 120887 & 120889

Unique Features: Peerless Lake is the largest and deepest lake in the study area and has as its most unique feature a significant population of Lake Trout. During the spring overturn the lake is subject to its greatest sportsfishing pressure by visiting recreationalists. The lake also has 4 Class 1 beaches and 2 Class 2 beaches (CLI) which provide for possible areas for future campsite development. During the remainder of the open water season, the fishing pressure is minimal with most of the fishermen moving to the many smaller lakes in the area. Another feature of Peerless Lake is that it becomes very rough during high winds.

Because of its size, any winds over 15 mph create enough wave action to produce a hazard for small crafts on the lake.

Timber Harvesting Recommendations: Because of the present and projected increased use of Peerless Lake, it is recommended that the visual aesthetics of the lake and lakeshore be maintained. In order to do this, it is recommended that when harvesting operations commence in C.P. 12, the existing 5 chain buffer zone be extended to 15 chains. Within the extension area it is recommended that proper consideration of aesthetics be given road location and harvesting. Within the original 5 chain buffer zone, no disturbance of any kind should be made. These recommendations will ensure the preservation of the visual aesthetics of the lakeshore along the western portion of the lake.

Cut Plan Area 13

Coniferous Timber Quota: S11-Q1

Quota Holder: Wabasca Co-op Association Ltd.

Total Merchantable Volume: 10,426 MFBM

Annual Cut: 6.2 MMFBM

Approximate Duration of Operations: 1 year at 50% removal

Associated Water Bodies: Peerless and Graham Lakes

Lake Classification: Peerless - Type B

Graham - Type B

Length of Shoreline in C.P. 13: Peerless - 1 3/4 miles

Graham - 5 3/4 miles

Shoreline Recreation Capability: Peerless - Class 4 - 1 3/4 miles

Graham - Class 2 - 1½ miles

Class 3 - 1½ miles

Class 4 - 2¼ miles

Class 5 - ¼ mile

Shoreline Survey Transect Numbers: Graham Lake 1-7

Unique Features: Graham Lake is used by the visiting recreationalists as a secondary area of use. The sportsfishing potential is not quite as high as the surrounding lakes, but it does provide good quality fishing most of the season. However, it is used mostly as a link to the more productive Vandersteen Lake. The island located just off the northwest shore of the lake is used by hundreds of gulls and terns as a resting ground. The large bay at the north end of the lake (locally known as Loonskin Bay) has been recogniized by the study as having a potential for campsite development. The Peerless-Graham Lakes Access Road is located along the western shore of Graham Lake and is quite close to the shore in many places. There is also a Class 2 (CLI) beach on the west shore and many old wagon trails provide for good hiking along the entire west shore.

Timber Harvesting Recommendations: The majority of merchantable timber in this C.P. is located along the west shore of Graham Lake between the shoreline and the Peerless-Graham Lakes Access Road. To reduce the visual impact of harvesting, aesthetic harvesting techniques should be used between the west shore of the lake and 10 chains west of the Access Road. It is also recommended that existing seismic lines and trails be used wherever possible for access to the areas to be cut.

Cut Plan Area 14

Coniferous Timber Quota: S11-Q1

Quota Holder: Wabasca Co-op Association Ltd.

Total Merchantable Volume: 14,470 MFBM

Annual Cut: 6.2 MMFBM

Approximate Duration of Operations: 1¼ years at 50% removal

Associated Water Bodies: N/A

Lake Classification: N/A

Length of Shoreline within C.P. 14: N/A

Shoreline Recreation Capability (CLI): N/A

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: Petroleum and Natural Gas Reservation

Chevron Standard Ltd. Reservation #1927

Unique Features: During an aerial Big Game Survey in January 1975, a relatively large population of moose were spotted in the vicinity of C.P. 14.

Timber Harvesting Recommendations: With further investigation, this area could quite possibly be found to be a key winter range for moose. It is recommended that when harvesting operations commence in this C.P., access be gained by existing seismic lines and trails wherever possible. This will help prevent improved access for the recreationalists visiting the area. In addition, it is recommended that wildlife considerations be included when cut blocks are laid out.

Cut Plan Area 15

Coniferous Timber Quota: S11-Q1

Quota Holder: Wabasca Co-op Association Ltd.

Total Merchantable Volume: 4,358 MFBM

Annual Cut: 6.2 MMFBM

Approximate Duration of Operations: ½ year at 50% removal

Associated Water Bodies: Equisetum and Long Lakes

Lake Classification: Type B for both lakes

Length of Shoreline in C.P. 15: Equisetum Lake - 1¼ miles

Long Lake - 3 miles

Shoreline Recreation Capability (CLI): Equisetum - Class 2 - ½ mile

Class 4 - 3/4 mile

Long Lake Class 2 - ½ mile

Class 4 - 3/4 mile

Class 5 - 1 3/4 miles

Shoreline Survey Transect Numbers: Equisetum Lake 3,4,7,8,9

Long Lake 1,2,3,4,11,12,13

Associated Land Uses: Petroleum and Natural Gas Leases

Texaco Exploration Canada Ltd. Lease #11912

Unique Features: Both Equisetum and Long Lakes are accessible by a dryweather access road stemming from the Trout Mountain Road. This enables recreationalists to visit the area during most of the summer months. Both lakes have a good sportsfishing potential and both have areas that are presently used for camping by visitors to the lakes. However, the access road is located across the beach on the east shore of Equisetum Lake, and during periods of high water level, it is impossible to drive across to gain access to Long Lake. There are also many old wagon trails and seismic lines that provide access to most of the shoreline of both lakes for hiking.

Timber Harvesting Recommendations: The stands of merchantable timber in C.P. 15 are located along the north shore of Equisetum Lake, slightly north and east of Equisetum Lake and along the Peerless-Graham Lakes Access Road in the east part of the C.P.

It is recommended that proper consideration be given to aesthetics when locating roads and harvesting in the stands along the north shore of Equisetum Lake to help preserve the visual aesthetics of the lakeshore. When considering the harvesting operations in the east part of the C.P. along the Peerless-Graham Lakes Access Road, it is recommended that a windfirm buffer zone be left along the road again to preserve the visual aesthetics of the area. For the large stand to the north of Equisetum and Long Lakes, existing ground rules will sufficiently govern harvesting operations.

Management Unit S14

Harvesting operations are currently at a standstill in M.U. S14 with Sylver Spruce Sales Ltd. being the only quota holder with Coniferous Timber Certificate S14-Q1.

The tentative cutting sequence was established for the initial years but following that, the program was left for future revision depending on improved access, future inventories, detailed cruises, etc.

The following discussions and recommendations have been arranged in numerical order and are not an indication of the cutting progression. (See Map for Cut Plan Area Layout).

Cut Plan Area 1

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 49,125 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: N/A

Associated Water Body: N/A

Lake Classification: N/A

Length of Shoreline in C.P. 1: N/A

Shoreline Recreation Capability (CLI): N/A

Shoreline Survey Transect Numbers: N/A

Associated Land Use: N/A

Unique Features: N/A

Timber Harvesting Recommendations: Harvesting operations are near completion in this block. As a result, special recommendations are unnecessary.

Cut Plan Area 2

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 99,423 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: 5 years at 50% removal

Associated Water Body: N/A

Lake Classification: N/A

Length of Shoreline in C.P. 2: N/A

Shoreline Recreation Capability (CLI): N/A

Shoreline Survey Transect Numbers: N/A

Associated Land Uses:

Unique Features: N/A

Timber Harvesting Recommendation: Harvesting operations were started to be moved from C.P. 1 to C.P. 2. However, because C.P. 2 is situated outside the Study Area, special recommendations are unnecessary.

Cut Plan Area 3

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 32,283 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: 1½ years at 50% removal

Associated Water Body: Wabasca River

Length of Shoreline in C.P. 3: 7 miles

Shoreline Recreation Capability (CLI): N/A

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: Petroleum and Natural Gas Field

Senex Oil Field

Unique Features: Much of the south facing slope of the Wabasca River Valley in C.P. 3 can easily be seen from the Trout Mountain Road on the south side of the river valley. This view is the only panoramic view within the study area and for that reason should be kept as natural as possible.

Timber Harvesting Recommendations: It is recommended that cut blocks located on the south facing slope of the river valley be designed to follow the contours and utilize as many natural openings as possible. The important thing is to keep them small (less than 70 acres) and to keep away from square or rectangular blocks.

Cut Plan Area 4

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 11,626 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: 8 months at 50% removal

Associated Water Body: N/A

Lake Classification: N/A

Length of Shoreline in C.P. 4: N/A

Shoreline Recreation Capability (CLI): N/A

Shoreline Survey Transect Numbers: N/A

Associated Land Use: Petroleum and Natural Gas Leases

Letsan Oil Ltd., Lease #12548

Unique Features: The most unique feature in this C.P. is the panoramic view of the Wabasca River Valley from the Trout Mountain Road just south of the Trout Mountain Tower.

Timber Harvesting Recommendations: It is felt that existing ground rules will be sufficient to govern harvesting operations in C.P. 4 except in the area along the Trout Mountain Road south of the Trout Mountain Tower down to the bottom of the first terrace of the Wabasca Valley south of the river. For that area it is recommended that every precaution be taken to reduce the already hazardous erosion problems.

Cut Plan Area 5

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 5,145 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: $\frac{1}{4}$ year at 50% removal

Associated Water Bodies: God's and Hebephrenic Lakes

Lake Classification: God's - Type B, Hebephrenic - Type C

Length of Shoreline in C.P. 5: God's Lake: 7 miles Hebephrenic Lake: 4.5 miles

Shoreline Recreation Capability (CLI):

God's Lake -	Class 2	3/4 miles
	Class 3	4 miles
	Class 4	1½ miles
	Class 5	3/4 miles
Hebephrenic Lake	Class 3	1½ miles
	Class 4	1½ miles
	Class 5	1 mile

Shoreline Survey Transect Numbers: God's - 1-4

Hebephrenic Lake -1-3

Associated Land Uses: Petroleum and Natural Gas Leases

Hudson's Bay Oil and Gas Ltd., Lease #36180

Unique Features: The most unique feature in Block 5 is God's Lake because of its trophy status for fishing. The lake is accessible by an old cat trail which is impassable to most vehicles except in periods of very dry weather. This makes the lake a real challenge to the avid sportsfisherman. The small island in the southeast corner of the lake is a resting ground for a colony of pelicans, which is also quite unique in the area.

Timber Harvesting Recommendations: It is recommended that the existing 5 chain buffer zone around God's and Hebephrenic Lakes be extended to 20 chains and possibly more along areas where there is a rise of land from the lakeshore. This will reduce the visual impact of harvesting operations in areas near the lake. An important recommendation in this area is not to improve the summer access to the lake. To prevent this, existing seismic lines and trails should be used to gain access to the areas to be logged wherever possible.

Within the 20 chain buffer zone proper aesthetic considerations should be given to road locations and harvesting to maintain the visual aesthetics of the area.

Cut Plan Area 6

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 10,485 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: ½ year at 50% removal

Associated Water Body: Second Last Lake

Lake Classification: Type C

Length of Shoreline in C.P. 6: 5 miles

Shoreline Recreation Capability (CLI): Class 3 - 3 miles

Class 4 - 1½ miles

Class 5 - ½ mile

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: N/A

Unique Features: N/A

Timber Harvesting Recommendations: Because of the isolation of Second Last Lake, the only recommendation to be made is to not improve the access to the lake. Existing trails and seismic lines should be used whenever possible. The lake has been subject to very little recreation or sportsfishing pressure and it is felt that it should remain as an isolated lake, available to the more avid sportsfishermen visiting the area.

Existing ground rules will sufficiently govern harvesting operations in the area surrounding the lake.

Cut Plan Area 7

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 5,220 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: ¼ year at 50% removal

Associated Water Body: Last Lake, Wabasca River

Lake Classification: Type D

Length of Shoreline in C.P. 7: 6 miles

Shoreline Recreation Capability (CLI): Class 4 - 1½ miles and Class 5 - 4½ miles

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: N/A

Unique Features: N/A

Timber Harvesting Recommendations: Last Lake has been subject to very little, if any, pressure from recreationalists because of its remoteness. Very little is known about the lakes fishing potential, but it is felt that because of its isolation there will be very little recreational demand placed on it. For these reasons and the fact that there is very little merchantable timber within 5 chains of the shoreline of Last Lake, it is felt that existing ground rules will sufficiently govern the harvesting operations in the area surrounding the lake.

For the remaining portions of C.P. 7, especially those that are in the Wabasca River Valley, it is recommended that every precaution be taken during harvesting operations to prevent future erosion damage.

Cut Plan Area 8

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 4,861 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: $\frac{1}{4}$ year at 50% removal

Associated Water Body: Wabasca River

Lake Classification: N/A

Length of Shoreline in C.P. 8: 6 miles

Shoreline Recreation Capability (CLI): N/A

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: N/A

Unique Features: C.P. 8 is located in the Wabasca River Valley

Timber Harvesting Recommendations: Refer to "Recommendations Concerning Timber Harvesting in the Wabasca River Valley."

Cut Plan Area 9

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 15,380 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: 3/4 years at 50% removal

Associated Water Body: N/A

Lake Classification: N/A

Length of Shoreline in C.P. 9: N/A

Shoreline Recreation Capability (CLI): N/A

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: N/A

Unique Features: C.P. 9 is located in the Wabasca River Valley.

Timber Harvesting Recommendations: Refer to "Recommendations Concerning Timber Harvesting in the Wabasca River Valley"

Cut Plan Area 10

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 12,120 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: 3/4 years at 50% removal

Associated Water Body: N/A

Lake Classification: N/A

Length of Shoreline in C.P. 10: N/A

Shoreline Recreation Capability (CLI): N/A

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: N/A

Unique Features: Portions of C.P. 10 are located in the Wabasca River Valley.

Timber Harvesting Resommendations: Refer to "Recommendations Concerning Timber Harvesting in the Wabasca River Valley"

Cut Plan Area 11

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 37,905 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: 2 years at 50% removal

Associated Water Bodies: Goosegrass Lake and Wabasca River

Lake Classification: Type B

Length of Shoreline in C.P. 11: Goosegrass Lake

Class 2 - ½ mile

Class 4 - 2¼ miles

Class 5 - 1 3/4 miles

Wabasca River

Class 7 - 7 miles

Shoreline Survey Transect Numbers:

Associated Land Uses: Petroleum and Natural Gas Leases

Mesa Petroleum (North America) Co., Lease #17083

Total Petroleum (North America) Co., Lease #17085

Supertest Investments and Petroleum Ltd. and Mesa Petroleum (N.A.) Co., and Canadian Industrial Gas and Oil Ltd., Lease #'s 10304 and 10305

Wintersall Oil of Canada Ltd., and Northern Development Company Ltd., Lease #'s 19541 and 19542 Mesa Petroleum (N.A.) Co., Canadian Reserve Oil and Gas Ltd., Sunlite Oil Company Ltd. and Canex Placer Ltd., Lease #'s 23855 and 23856 Texaco Exploration Canada Ltd., Lease #17082

Unique Features: Goosegrass Lake is one of the few lakes in the Study Area that has an abundance of perch. It is one of the smaller lakes that receive the fishing pressure after the spring Lake Trout fishing is completed on Peerless Lake.

Timber Harvesting Recommendations: To reduce the visual impact of harvesting operations in the areas near the lake shore, it is recommended that the existing 5 chain buffer zone (existing ground rules) be extended to 10 chains with proper aesthetic considerations given for road location and harvesting in the buffer zone. (A further extension may be necessary in areas that have a longer distance to the top of a rise of land such as the southeast corner of the lake.) In addition, a windfirm buffer zone should be left on both sides of the Trout Mountain Road in this block. This action will reduce further erosion damage in that particular part of the river valley as well as reduce the visual impact of harvesting operations.

Cut Plan Area 12

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 1,959 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: less than 3 months at 50% removal

Associated Water Body: N/A

Lake Classification: N/A

Shoreline Recreation Capability (CLI): N/A

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: Petroleum and Natural Gas Field

Senex Oil Field

Unique Features: C.P. 12 is located in the Wabasca River Valley

Timber Harvesting Recommendations: Refer to "Recommendations Concerning Timber Harvesting in the Wabasca River Valley"

Cut Plan Area 13

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 4,854 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: ½ year at 50% removal

Associated Water Body: Wabasca River

Lake Classification: N/A

Length of Shoreline in C.P. 13: 6 miles

Shoreline Recreation Capability (CLI):

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: N/A

Unique Features: C.P. 13 is located in the Wabasca River Valley

Timber Harvesting Recommendations: Refer to "Recommendations Concerning Timber Harvesting in the Wabasca River Valley"

Cut Plan Area 15

Coniferous Timber Quota: S14-Q1

Quota Holder: Sylver Spruce Sales Ltd.

Total Merchantable Volume: 22,689 MFBM

Annual Cut: 9.8 MMFBM

Approximate Duration of Operations: 1 year at 50% removal

Associated Water Bodies: East and West Twin Lakes and the Wabasca River Valley

Lake Classification: East Twin Lake - Type D

West Twin Lake - Type C

Length of Shoreline in C.P. 15: East Twin Lake - 2 miles

West Twin Lake - 2¼ miles

Wabasca River - 6 miles

Shoreline Recreation Capability (CLI):

East Twin Lake: Class 3 - 3/4 mile

Class 4 - ½ mile

Class 5 - 3/4 mile

West Twin Lake: Class 3 - ¼ mile

Class 4 - 1½ mile

Class 5 - ½ mile

Wabasca River:

Shoreline Survey Transect Numbers: N/A

Associated Land Uses: N/A

Unique Features: N/A

Timber Harvesting Recommendations: Existing ground rules will sufficiently govern harvesting operations in the southern portion of C.P. 15 and the only recommendation is that access should not be improved to East and West Twin Lakes. They are relatively isolated and should remain that way in the future. Recommendations concerning harvesting operations in the northern portion of C.P. 15 are expressed in "Recommendations Concerning Timber Harvesting in the Wabasca River Valley".

Cut Plan Areas 16,17,18,19 and 20

These 5 cut plan areas are located outside the Study Area boundary and are of no major concern to the study itself. However, timber harvesting recommendations as stated in "Recommendations Concerning Timber Harvesting in the Wabasca River Valley" apply to these blocks.

RECOMMENDATIONS CONCERNING TIMBER HARVESTING IN THE WABASCA RIVER VALLEY

During a Big Game Survey in January 1975, it was found that the Wabasca River Valley was a key winter range for a relatively high density of moose. For this reason as well as preserving the aesthetics of the valley, special timber harvesting recommendations are necessary.

The cut plan areas in Management Unit S14 that will be affected by the recommendations are as follows: 3, 7 through 13 and 15 through 20.

As stated in existing ground rules, cut block design and cutting sequence can be manipulated to promote the three major components of a wildlife population: food, cover and protection from humans. In order to preserve the cover and protection aspects of a wildlife population, the size and design of cut blocks is very important. It is recommended that cut blocks in the Wabasca River Valley not exceed 40 acres and should provide for a maximum edge effect. That is, they should be designed with irregular boundaries. This boundary increase is especially important considering that animals usually only utilize the area within 10 chains of the edge of an opening. Another recommendation, also stated in existing ground rules, is that the residual stands should not be cut until the regeneration in the cut over areas has reached a height sufficient to provide cover for the moose.

To further protect the moose population in the Wabasca River Valley, it is recommended that new access and haul roads be extremely limited in the valley. To assist with the latter recommendation, existing trails and seismic lines should be used whenever possible. Every measure should be taken to put all new access or haul roads "to bed" as soon as operations are completed.

In addition to protecting the wildlife population and visual aesthetics of the valley, special precautions will have to be taken during harvesting operations to prevent a problem of soil erosion.

The Wabasca River Valley in Management Unit S14 has very steep slopes in many areas as well as evidence of many "seepage" sites.

It is recommended that harvesting operations be carried out during the winter months, as in the past, and that every precaution be taken to prevent a possible problem of erosion. Some of the precautions recommended are to use rubber-tired vehicles wherever possible, reseed any areas that have been bared to mineral soil, use effective erosion control devices such as cross-ditches, ditch block, etc. on areas of prolonged slope, and to use special harvesting techniques in areas that are located on steep slopes (over 45%).

1976 Provisional Detailed Management Plan Outline For Forest Management Units with the Incorporation of Phase III Forest Inventory Data

A. INTRODUCTION

1. Objective: To manage the coniferous and deciduous timber resource of the Forest Management Unit under approved policies of sustained yield, efficient timber utilization and multiple forest land use.

2. Plan Summary: includes brief statements and recommendations covering:

   a. Forest productivity and Land Use Zoning classification table:

   b. Other constraints on the land affecting timber harvesting, i.e. operability, elevation, etc.

   c. Capability for timber production by Land Use Zones in which any degree of harvesting is allowed, i.e. productive area, volume, proposed rotation and net A.A.C., etc.;

      Table of F/M Unit by Land Use Zone depicting area, volume and net A.A.Cut.

   d. Allocation of timber for harvesting, existing and proposed, i.e. timber commitments, M.T.U. Areas and other policy presently affecting Timber Management Planning within the Unit, and superseding prior approved Timber Management Plan.

   - Table of existing and proposed timber allocations within the F/M Unit.

B. BASIC FOREST MANAGEMENT PLANNING DATA

1. Forest Management Unit Physical Description: Brief general statements on relative location, forest region, topography, watersheds, access and transportation facilities, recreational use, grazing, mineral development, communities and settlements, etc. General statements on other physical or biophysical features which impose restraints on Timber Management planning, i.e. elevation, etc.

- Maps #1, #2 and #3.

2. Forest Management Inventory Data: Type of coniferous and deciduous timber inventory, photo dates, map scales and covertype volume tables (plus other resource inventory data when applicable).

3. Total Capacity For Forest Productivity in the Forest Management Unit:

a. D.P.C. table of gross area of F/M Unit showing productivity by land ownership (square miles and percent).

b. D.P.C. table of Net Provincial Crown Land by Provincial jurisdiction and productivity (square miles and percent)

c. D.P.C. table of Provincial Crown Land (managed by A.F.S.) by productivity and Green, Yellow and White areas, and allocation areas (square miles and/or acres and percent).

d. D.P.C. tables of Provincial Crown Land (managed by A.F.S.) by productivity and Green, Yellow and White Areas, Allocation areas and Regional Land Use Zone (3 tables in square miles and/or acres and percent)

e. D.P.C. table of Provincial Crown Land (Managed by A.F.S.) by allocation areas and site (square miles and/or acres and percent).

f.- i. Repeat above tables on volume basis (5/3 standard) under 4 species groupings giving coniferous and deciduous volume.

4. Other Constraints on Capacity of Forest Production in the Management Unit

Resume of other special constraints affecting timber production such as Forest Policy including a development freeze and timber harvesting policy constraints as influenced by Regional Land Use Zones, biophysical and environmental limitations, etc.

a. To expand on timber harvesting policy constraints as influenced by Regional Land Use Zones the following examples are given:

(i) Landscape Protection Zone (1) - removal of endangered, decadent or damaged timber and stand improvement cuts with full consideration particularily of asthetics, site and watershed values.

(ii) Critical Wildlife Zone (2) - special timber harvesting provisions in designated areas for wildlife protection including game corridors, buffer reserves to minimize visual harassment, small cut blocks, etc.

(iii) Special Use Zone (3) - each area to have a special management plan developed due to the unique features and use designation.

(iv) General Recreation Zone (4) - asthetic harvest layout in approved areas.

(v) Multiple Use Zone (5) - this is the Zone in which timber production is to be maximized based on sustained yield timber management policies with due recognition of the other forest land uses including watershed protection.

(vi) Agriculture Zone (6) - two timber management policies to be applied with preference to local users and with due recognition of streamside reserves, steep slopes, etc.

(1) Timber liquidation cuts permissible where immediate agriculture expansion is anticipated so as not to loose timber to clearing but rather to utilize same to greatest extent.

(2) Where Agricultural expansion is deferred the timber may be rationed over an extended period of time.

(vii) Industrial Zone (7) - each area to have a special site plan developed due to the single use designation.

(viii) Facility Zone (8) - each area to have a special site plan developed due to the use designation. This may involve permanent timber removal to accommodate facilities such as ski runs, reservoirs, proposed urban expansion, etc. and also enhance major recreation developments including removal of endangered timber or by thinning operations.

5. Current Timber Condition and Protection Situation: Fire, pathology, entomology, animal damage, watershed protection, climatic damage, industrial losses and industrial development planning such as major surface strippable areas and reservoirs, etc.

6. Logging and Fire History: A generalized description of logging development in the unit.

A listing of recent fires which had considerable impact on the age class distribution of the timber in the unit.

C. DEVELOPMENT OF THE FOREST MANAGEMENT UNIT FOR TIMBER PRODUCTION

1. Forest Inventory Data For Lands Allocated to Timber Production:

a. Growing stock - data to be supplied separately for all status of land in which harvesting is permitted if varying degrees of harvesting timber crops are specified or varying restrictions on harvesting exist:

(i) area - by major species, site, commercialism and age class for the above.

area - by major species, site and height class.

(ii) volume - by major species and utilization standard.

volume - by major species and commercialism and utilization standards.

volume - by major species and height classes.

volume - by major species and age class and utilization standards.

(iii) composite empirical yield curve for the F/M Unit (one each for coniferous and deciduous).

b. Site Index - includes site index curves.

c. Inventory accuracy and comparison of previous inventory estimates.

d. Inventory maintenance

Note: Coniferous understories established in deciduous overstories to be differentiated for progesssive Timber Management planning.

2. Planning and Regulation of the Cut:

a. Rotation & Cutting Cycle

(i) MAI-PAI curves - derived from the volume age curves.

(ii) consideration of -

- silvicultural aspects - regeneration period, etc.
- product size - as related to commercialism, etc.
- pathology and entomology considerations.

(iii) cutting cycle establishment relative to regeneration establishment policy, wildlife protection, aesthetics etc.

b. Derivation of Gross A.A.C.:

(i) Review of factors which influence cut such as age class distribution, growing stock balance, should be given.

(ii) Annual allowable cut to be derived as per A.F.S. Annual Allowable Cut Policy Statement.

A separate cut should be calculated for each Timber Allocation Area under the Regional Land Use Zones and by each timber utilization standard.

The prime A.A. Cut will apply to Multiple Use Zone 5 (e.g. Quota A.A.Cut) and in most cases in Critical Wildlife Zone 2.

Regardless of calculation of A.A. Cuts for the other Zones, these latter A.A. Cuts must be discounted in the allocation of long term Timber dispositions; however these will signify maximum harvestable annual volume consistent with the timber harvesting policy of each Zone (e.g. short term Timber Permits).

Age class balancing with due regard to timber condition is the key to judgement calls.

(iii) Adoption of a Recommended Gross A.A. Cut - requires justification by use of an "area progression chart" check or "age at harvest" check plus justification of the rate(s) of harvesting in the A.A.C., requiring future adjustment due to age class hiatus, etc.

c. Deductions for Losses of Gross A.A.C. - allowances should be made on a graduated basis for the following factors in this order:

(i) reserves and watercourses and highways, etc.

(ii) isolated, inaccessible and inoperable stands,

(iii) fire - the provincial standard average of 0.1% annual loss of Net Merchantable Volume will be applied or as otherwise justified.

(iv) safety factor.

(v) industrial losses (exploration and development)

(vi) cull

(vii) others to be determined.

Severity of the above deductions for each Regional Land Use Zone will vary according to the timber harvesting policy for each Zone.

d. Derivation of Net A.A.C. of Coniferous and Deciduous Timber

- deductions are applied to G.A.A.C. to arrive at Net A.A.C.
- any variation in rate of cut over rotation should be indicated.

- a Net A.A.C. for each Timber Allocation area and Regional Land Use Zone is allowed by each utilization standard is required. (summary table)

3. Timber Allocation in the Forest Management Unit:

a. History of Allocation in the Unit

(i) a brief description of the Quotas, D.T.A.'s, F.M.A.'s and M.T.U. Areas, Farm Woodlots, etc. up to present day with pertinent information such as Q.S.D., Quota Volume, Q.A.A.C.%.

b. Timber Supply Overview

(i) A statement of the Net A.A.Cut within each Regional Land Use Zone and proposal(s) for its allocation.

(ii) A table giving

- Net A.A.C. by Timber Allocation area and Regional Land Use - Zones 2 and 5
- minus present commitments by Timber Allocation area and Regional Land Use Zone 2 & 5.
- uncommitted volume by Timber Allocation area and Regional Land Use Zone 2 and 5.

(iii) - if an excess is indicated proceed with section C.4.(c) below.

(iv) If a deficiency of Net A.A.C. is indicated give recommendations if for adjustment of each Timber Allocation.

c. Determination of the Cut Sequence and Establishment of Spheres of Interest for Present Commitments

Only generalizations of the cut sequence should be included in the main Plan. All detailed cut sequence calculations should be included in the Appendix.

Contingency timber planning may be required in zones other than 2 and 5.

d. Allocation of Uncommitted Volume and Area in the Unit

(i) Legislation affecting volume allocation, i.e. options - increase Quotas (D.T.A.'s) proportionally; create new Quotas (D.T.A.'s) and/or establish C.T.P.'s and/or

L.T.P.'s (M.T.U. areas) or proposed timber development complex.

(ii) policy affecting volume allocation - such as:

- Eastern Slopes freeze on new development.
- establishment of a proposed forest management area.
- quota holder and community timber requests, etc.

(iii) conduct the necessary calculations for allocation of uncommitted volume and recommend future timber dispositions, if any surplus A.A.C. derived.

e. Final determination of Annual Allowable Cut Percents for each timber allocation.

4. Silviculture Program

a. Silviculture Policy

b. Reforestation Areas and Treatments

(i) cutover Areas

(a) Annual cutover acreage by major species

(b) Reforestation Survey

(c) Treatment of N.S.R. areas

(ii) Potential Productive Areas

(a) Determination of Acreage

(b) Reforestation Survey to determine actual acreage

- stocked (S.R.)
- partially stocked (P.S.)
- N.S.R.

(c) Treatment of P.S. and N.S.R. areas.

c. Afforestation Areas and Treatment

(i) Special site plans to be developed on such lands as muskeg, abandoned patented, strip mining, etc.

d. Stand Improvement Areas and Treatment

(i) Thinning - to improve the age class distribution of the F/M Unit.

(ii) Genetic - to improve the quality of the growing stock.

e. Major Constraints to Silviculture Program

5. Major Transportation Planning

   a. Existing major roads, railways, airstrips, transmission lines

   b. Proposed major roads, railways, airstrips, transmission lines

      (i) Government

      (ii) Industry

         (a) Forest Industry

         (b) Other Industry

   c. Constraints

D. Administration of the Plan by Timber Allocations

   1. F/M Agreement Areas

   2. Quotas

   3. M.T.U. areas - C.T.P.'s and/or L.T.P.'s

E. CONCLUSIONS AND RECOMMENDATIONS

An amalgamation of the conclusions and recommendations on the various phases of management planning of the unit should be given.

F. Appendix Section

   1. Tables and D.P.C. Statements Summaries

   2. Detailed Calculations including A.A. Cut

   3. Graphs and Charts

   4. Maps

Tables and D.P.C. Statement Summaries

#1. Series of D.P.C. tables to provide growing stock data by area and volume for Outline Section C.1.a.(i) and (ii).

#2. D.P.C. table(s) of annual cutover acreage.

#3. Growing stock summary by age class for each timber allocation.

#4. Table of cut plan progression planning for each timber allocation.

#5. Age at harvest tables for each timber allocation.

Detailed Calculations including A.A. Cut

#1. Series of Annual Allowable Cut Calculations.

#2. Area Progression chart.

#3. Determination of A.A. Cut percents for each timber allocation.

Graphs and Charts

#1. Composite empirical yield curve for the F/M Unit.

#2. Site index curves.

#3. MAI & PAI curves.

#4. Stump diameter - Age curve.

#5. Height - age curve

#6. Age class distribution chart. One each for area and volume.

#7. Annual Allowable Cut Projection over Rotation.

Maps

#1. Basic map of the F/M Unit showing it in relation to the other Units in the Forest and general access.

#2. Watershed index map.

#3. F/M Unit map showing Regional Land Use Zones.

#4. F/M Unit map showing inventory photo dates and scale.

#5. F/M Unit maps showing spheres of interest and cut sequence of timber allocations (2 maps).

#6. F/M Unit Map showing proposed major transportation.

#7. F/M Unit Map showing history of timber allocations.

#8. F/M Unit Map showing age class.

#9. F/M Unit Map showing merchantability.

CHAPTER 4

OIL & GAS

OIL AND GAS RESOURCE

INTRODUCTION

Within the Peerless-Graham Lakes Study Area there are currently 26 petroleum and natural gas leases, 7 petroleum and natural gas reservations and 1 Crown reserve drilling reservation. (Map 5) The remaining areas are neither Crown reserve or areas reserved for future posting. There are no producing oil or gas fields in the study area; however, two producing fields are located in close proximity. These are the Senex Oil Field, on the north side of the Wabasca River in Management Unit S14 and the Red Earth Oil Field 50 miles to the west of the study area. There is also the possibility of the development of a new oil field just outside the northwest boundary of the study area. (Personal communication with Slave Lake A.F.S.)

A number of the existing leases date back to 1960, indicating a past history of activity. The most recent leases are dated 1974.

This report outlines areas of possible conflict between the oil and gas resource and the other resources within the study area. In addition, recommendations have been made which will assist in minimizing the potential conflicts.

RESOURCE SOURCES

The information on the oil and gas resource was provided by the Minerals Branch of the Department of Energy and Natural Resources. The information included a resume of past activities as well as maps of the various dispositions. Subsurface geology information was provided by Provincial Parks, Department of Recreation, Parks and Wildlife. The above information

is found in the "Oil and Gas Resource Atlas".

POTENTIAL RESOURCE CONFLICTS

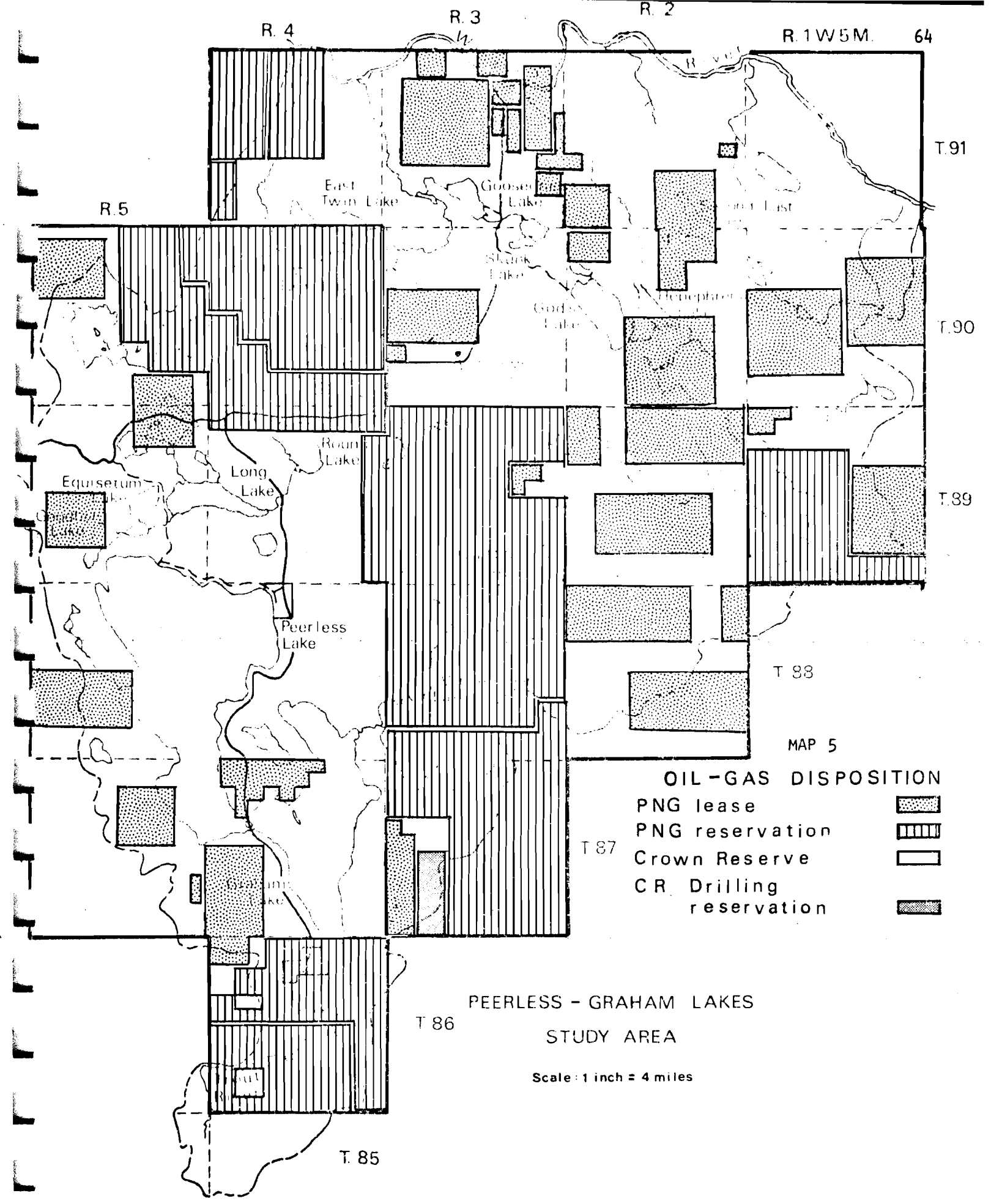
It is felt that the only major conflict with the oil and gas resource will be with the recreation resource. The entire study area has been recognized as having a high potential for recreation, especially the various lakes and their associated shoreland.

Potential environmental problems such as oil spills and soil erosion will have an impact on the study area, just as they have had in other areas where oil and gas activity has taken place. However, it is felt that these problems will not be as much of a problem in this particular area as they have been in some other, more sensitive areas. This is already evident, by the stable conditions of the seismic lines and well sites used for exploration purposes in the past.

RECOMMENDATIONS

At the present time, because of the limited amount of oil and gas activity in the study area, the only recommendations to be made concern present and future exploration and drilling programs. At the present time, the moritorium placed on the area restricts the exploration and drilling programs, but the moritorium is to be lifted in the future, at which time these types of programs will recommence. It is recommended that any new seismic lines or access routes to well sites be constructed during the winter months as was done in the past. This practice has held erosion damage to a minimum throughout the study area.

It is also recommended that when new seismic lines or access routes are constructed in the Wabasca River Valley, upon completion of the activity, these newly constructed lines should be adequately protected against erosion hazards. That is, all bared mineral soil should be seeded with the proper mixture of grasses, etc. and that cross-ditches or other


R. 4
R. 3
R. 2
R. 1 W 5 M.
64
T. 91
T. 90
T. 89
T. 88
T. 87
T. 86
T. 85
R. 5
East Twin Lake
Goose Lake
Long Lake
Peerless Lake
Graham Lake
MAP 5
OIL - GAS DISPOSITION
PNG lease
PNG reservation
Crown Reserve
CR Drilling reservation
PEERLESS - GRAHAM LAKES
STUDY AREA
Scale : 1 inch = 4 miles

appropriate measures be put to use on areas with a slope of more than 10 percent.

Because of the high recreational potential of most of the lakes within the area, it is recommended that no disturbances of any kind be made within a specified distance of each lake that has been recognized as having that potential. (For specific distances see Table IV.)

The latter recommendation was made for the lakes that are associated with timber harvesting operations as well. It is felt that these recommendations will help to retain the visual aesthetics of the lakeshore as well as prevent improved access to certain specified lakes.

Some differences occur between the distances for oil and gas activity and timber harvesting operations. It is felt that because of the difference in the amount of disturbance made by each on a specific area, in some cases timber harvesting operations should be further restricted in their distance from shore.

Table IV

Lake	Distance from Shoreline
Peerless	10 chains
Graham	10 chains
Vandersteen	15 chains
Round	10 chains
Long	10 chains
Equisetum	10 chains
Goosegrass	10 chains
God's	10 chains
Hebephrenic	10 chains
Goodfish	5 chains

Lake	Distance From Shoreline
Kidney	5 chains
East Twin	5 chains
West Twin	5 "
Skunk	5 "
Second Last	5 "
Last	5 "
Various unnamed lakes	2½ "

As previously mentioned, there is a possibility of the development of a new oil and gas field to the northwest of the study area boundary. If such a possibility becomes a reality, and the development reaches into the study area, many new recommendations will be necessary to integrate the development with the recreational development of the area. The most important recommendation concerns the construction of new access roads into areas with a high potential for recreation. These new roads will have to be designed and located in such a manner so as to make them available not only to the industrial users but to the recreational users as well. It is also recommended that public access not be improved to the following lakes:

Vandersteen Lake	East Twin Lake
Goodfish Lake	West Twin Lake
Second Last Lake	Hebephrenic Lake

The above recommendations have been made to closely coincide with the recommendations for timber harvesting operations as well as future proposed recreation development.

The recommendations made in this report will be subject to change as

a result of continuing new changes in the state of oil and gas acitvity in the study area. However, it is felt that these recommendations will be sufficient for the oil and gas activity in the present state.

CHAPTER 5

AGRICULTURE

AGRICULTURE

INTRODUCTION

The agriculture management recommendations for the Peerless-Graham Lakes Study were made after examining the potential of the area to support commercial cereal crops, domestic garden crops, and grazing of livestock. There is currently no commercial agricultural activity carried on in the area, and no reservations or applications have been made for grazing areas etc. However, agricultural management recommendations have been included in order to provide a full understanding of all resource potentials for the area.

RESOURCE SOURCES

The basic source of information was the CLI agriculture rating for the area. (SEE MAP 6 AND CHART II). It was felt after initial contact with the area and cross referrencing with climatic data from the AGRO-CLIMATIC MAP OF ALBERTA that commercial agriculture within the area was of marginal value and low priority as a resource. Therefore, further soils work in order to evaluate agriculture potential was felt not to be required and that an accurate assessment of the areas potential could be determined from the CLI data and agro-climatic information. No evaluation was made between the specific CLI class ratings and thier capability to support specific cereal crops. The general soils characteristics described in the CLI data was not specific enough to determine this information. It was felt that adequate information could be provided by comparing the general crop growth requirements for the various crop species with the general class descriptions and climatic data. Especially when the marginal value assessment of agriculture within the areas was considered.

The grazing potential for the area was generally assessed using CLI agriculture data, climatic data (AGRO-CLIMATIC MAP AND FIELD NOTES) and field observations of existing and potential use.

A further source of soils information was the detailed soils analysis which was carried out around the lakes. This did not cover the entire study region, but provided some further reference to difficulties which would occur when considering the areas agricultural potential.

RECOMMENDATIONS

The growing of commercial crops as an economically viable resource and source of income is not recommended within the study area. Climate, soils and topography are severe limitations to the success of such a program.

The annual frost free period is between 40 - 85 days, with between 1000 to 2150 degree - days above 42°F. (CLI DATA - AGRO-CLIMATIC MAP). This indicates moderate to very severe limitations because of climate and reduces the potential type of crops which can be grown.

There are only 3 class types of soil capability ratings within the region. (CLASS 5, CLASS 7, CLASS 0), all with very severe or no capability to support crops (CLI DATA).

The soil types within the area form a very complex pattern, with the inter-mixing of different types throughout the area. This was shown very clearly in the detailed soils analysis which was carried out within ½ mile of most of the major lakes. This has created a discontinuous soils pattern which would increase the difficulty of clearing, drainage, cultivation and harvesting.

Many of the areas, especially within the Wabasca Valley have severe limitations due to steepness of local topography. Problems which would

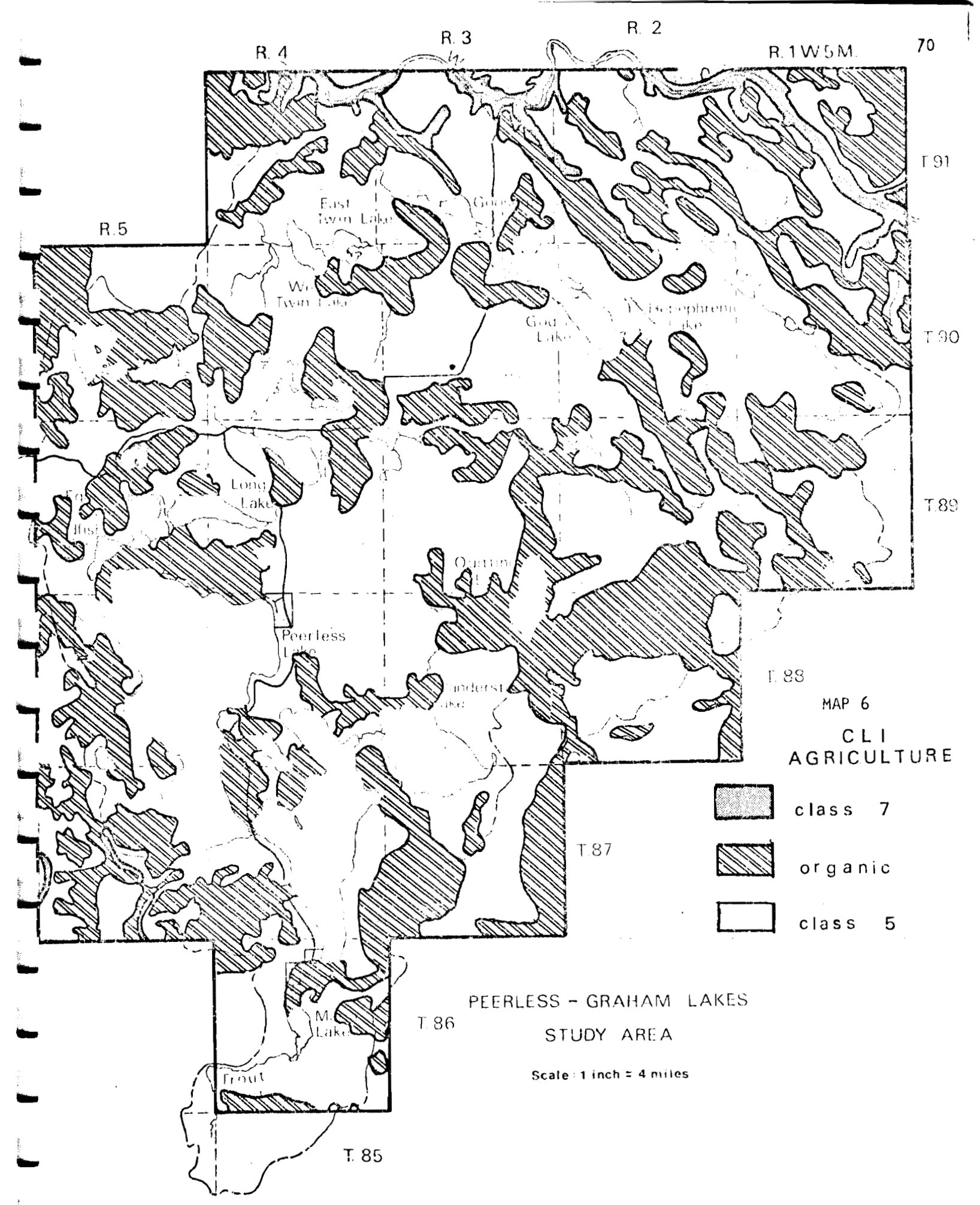

R. 4
R. 3
R. 2
R. 1 W 5 M.
70
R. 5
T 91
T 90
T 89
T 88
T 87
T 86
T 85
East Twin Lake
Long Lake
Peerless Lake
Trout
MAP 6
CLI
AGRICULTURE
class 7
organic
class 5
PEERLESS - GRAHAM LAKES
STUDY AREA
Scale : 1 inch = 4 miles

CHART II

CLI AGRICULTURE

CLI CLASS	DESCRIPTIVE LEGEND
CLASS 5	SOILS IN THIS CLASS HAVE VERY SEVERE LIMITATIONS THAT RESTRICT THEIR CAPABILITY TO PRODUCE PERENNIAL FORAGE CROPS, AND IMPROVEMENT PRACTICES ARE FEASIBLE. The limitations are so severe that the soils are not capable of use for sustained production of annual field crops. The soils are capable of producing native or tame species of perennial forage plants, and may be improved by use of farm machinery. The improvement practices may include clearing of bush, cultivation, seeding, fertilizing, or water control.
CLASS 7	SOILS IN THIS CLASS HAVE NO CAPABILITY FOR ARABLE CULTURE OR PERMANENT PASTURE. This class also includes rockland, other non-soil areas, and bodies of water too small to show on the maps.
CLASS 0	ORGANIC SOILS (NOT PLACED IN CAPABILITY CLASSES)

be encountered in working these areas are moist seep sites, soil erosion and soil stability after clearing.

Therefore, due to the above limitations, commercial crops are not recommended as a viable management resource for the area.

Domestic garden crops may be a source of additional food for the local residents. Currently, only a small garden plot is kept at the Graham Lakes settlement by the local priest. The garden meets with varied success from year to year depending on the seasonal climatic conditions especially the frequency and timing of frosts. Some of the vegetables require a pre-growing period in a makeshift greenhouse before transplanting outside. However, some success is achieved each year, and the possibility of individual garden plots for the local people does exist. This could be achieved either through location of the plots within the existing settlements or by leasing a specific area to the different communities.

Some potential does exist within the area for the maintenance of livestock, both cattle and horses. The CLI data indicates that CLASS 5 soil type may be able to support native or tame species of perennial forage crops which may be improved through clearing, seeding, fertilizing and water control (CLI DATA).

The study recognizes the potential for livestock but feels that this potential is severly limited.

Currently forage for livestock is supplied by natural vegetation and tame grass species. The natural vegetation units are small and dispersed among a diverse number of non-forage vegetation units such as muskeg, mature stands of timber etc. which makes access difficult for the animals, fencing and riders. The introduced grasses which are found along the roadways, airstrips and siesmic lines are an important but limited source of forage.

Each year, the local people cut hay from the Trout Mountain airstrip in order to provide winter feed for their horses.

Increase in the numbers of livestock to the area would mean a large increase in land area for grazing or winter feed. The severity and length of the winter from 6 to 7 months, generally with deep snow (BETWEEN 3 AND 4' AVERAGE) and cold temperatures are severe limitations for maintaining livestock. Open range grazing during winter is not possible and feed must be provided which would require clearing of additional land. Clearing to provide the necessary land base for a livestock operation would have the same restrictions that clearing land for crop growing would have. It is felt, based on the above limitations, that although CLI information indicates a possibility of improvement by means of clearing, seeding, etc. it is the recommendation of this study that such a program not be undertaken.

Insects during summer would undoubtedly play a major role in any livestock operation. The horses in the area seek shelter from the tremendous insect population along exposed windy parts of roads and lakeshores, and the big game animals move into the river valleys for relief from these pests. No control program would be economically feasible for the area and insects would be a major problem for livestock.

In summary, it is the recommendation of this study that agricultural practices for livestock grazing and commercial grain crops not be considered as a viable resource use for the area. Limited gardening may be feasible but only to the extent that it would provide local residents with additional food but not as a commercial enterprise.

CHAPTER 6

TRANSPORTATION

TRANSPORTATION

INTRODUCTION

The transportation routes to and within the study area are extremely important since the type of roads and timing of construction will greatly affect the overall uses to which the area can be put.

The future roads as proposed by the Department of Transportation for the northern Alberta region are essential links without which certain activities for the area would require different plan conclusions. It has been recognized by the study that the Peerless-Graham Lakes region is well suited to the development of recreational activities such as hunting, fishing and camping.

In order that the area reach its full potential for this resource it is necessary to provide adequate access from major urban areas. In the case of Peerless-Graham Lakes the important major urban centres are Peace River to the west, Slave Lake and Edmonton to the south and Fort McMurray to the east. The future needs for these urban centres with respect to access and recreational facilities with the exception of Fort McMurray, has been researched and documented in a report entitled "North Central Alberta Transportation Study" which was produced by the Planning Branch of the Department of Highways and Transport in 1969. From their findings the general proposed routes which are now being constructed were planned.

RESOURCE SOURCES

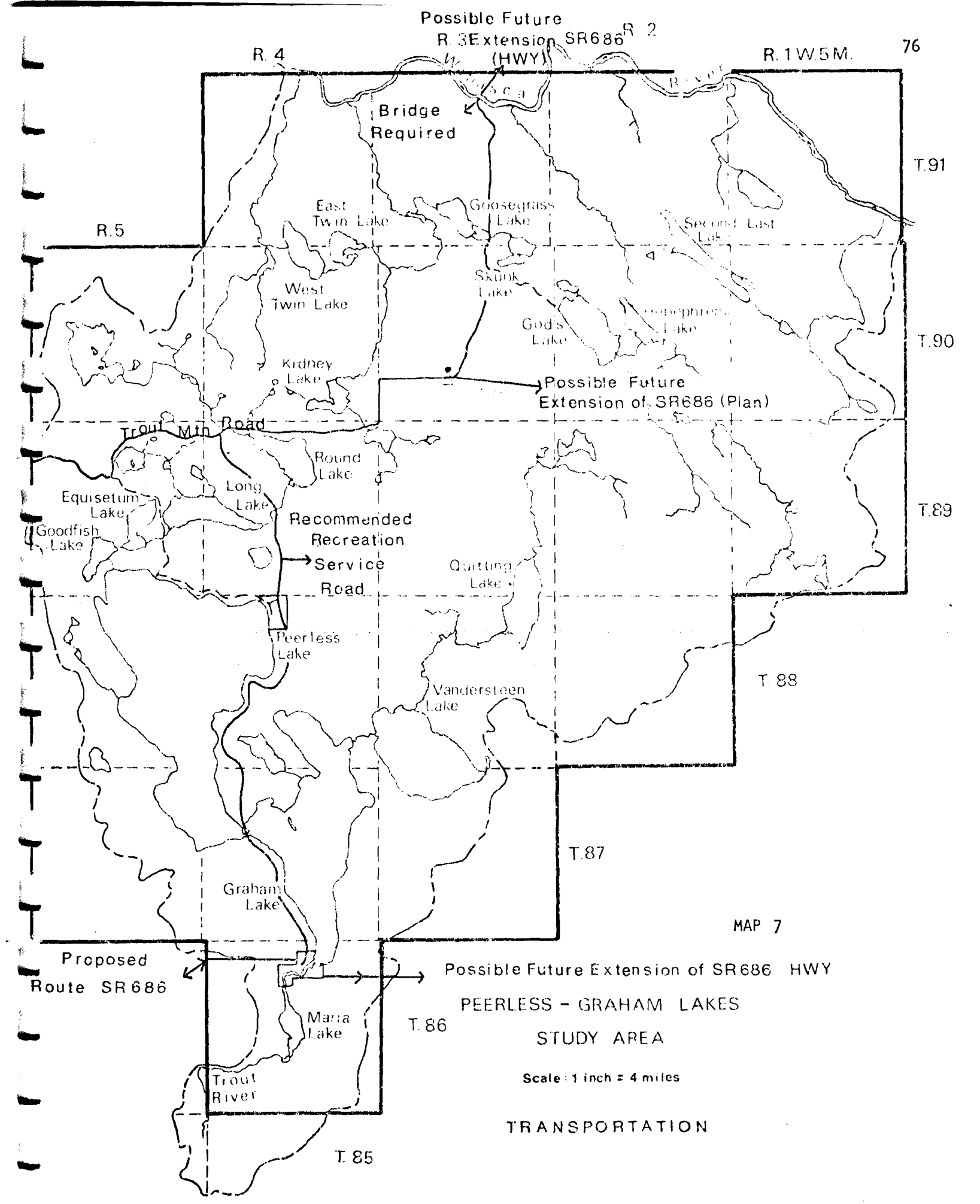
The information sources for these recommendations were compiled from a number of different agencies. The Department of Transport's Planning Branch and the Highway Referral System of the A.F.S. were the principle agencies involved. Discussions were also carried out with the District Forestry Office in Slave Lake, the local settlement residents and the industrial users in the area. From these sources the discussions and recommendations on the transportation links for the Peerless Lake Management Study were drawn.

RECOMMENDATIONS

It is recognized by this study that roads with the design specifications of secondary roads (S.R.) 686 and 967 are necessary for the development of the study area. With the completion of S.R. 686 to Graham Lake a permanent, well maintained road will provide direct access to the area for local and recreational interests. (MAP 7).

However, conditions exist which must be considered at this time. The completion of the road will take from 7 - 10 years.

During this period of time user demand pressure will continue to increase. This increase will require that the existing road be maintained and perhaps upgraded in order to ensure access. This will not only benefit the recreational users and local residents but the industrial operators as well. Arcom Timber's mill located just to the west of the study area, although shut down at present, will eventually continue operations. Their haul route will still be the Trout Mountain Road and any improvement to the road will be useful to them. Also the Senex oil field operators will benefit.


Possible Future
R 3Extension SR686
(HWY)
R. 2
R. 4
R. 1W.5M.
Bridge
Required
T.91
East
Twin Lake
Goosegrass
Lake
Second Last
Lake
R.5
West
Twin Lake
Skunk
Lake
God's
Lake
T.90
Kidney
Lake
Possible Future
Extension of SR686 (Plan)
Trout Mtn Road
Round
Lake
Long
Lake
Equisetum
Lake
Goodfish
Lake
Recommended
Recreation
Service
Road
T.89
Quatting
Lake
Peerless
Lake
T. 88
Vandersteen
Lake
T.87
Graham
Lake
MAP 7
Proposed
Route SR686
Possible Future Extension of SR686 HWY
PEERLESS - GRAHAM LAKES
STUDY AREA
Maria
Lake
T. 86
Trout
River
Scale : 1 inch = 4 miles
TRANSPORTATION
T. 85

It is possible that the continued maintenance of the road will strengthen requests for government assistance in building a bridge across the Wabasca River at the current crossing junction in TP91 R3 West of the 5th meridian. If such a bridge is constructed, it will provide the necessary crossing needed by the Highways Department for future extension of the road eastward. The only possible way to reach this crossing from the S.R.686 end point at Graham Lake settlement would be by way of the Peerless-Graham Lake access road. This is not recommended by the study. The improvements required on this route would create a volume of traffic flow which is not considered desirable for the area.

It is logical that such a road would improve the access to the different lakes in the area as well as linking the two settlements. However, this access could be adequately provided by a well maintained recreational service road. This would be more desirable because the design standards and speed limits would fit closer to the recreational orientation of the study area. Even now many of the tourists when asked about their future considerations for the area speak out in opposition to any significant development. Also there is some doubt about the wishes of the Peerless Lake settlement people to be linked by such a major route.

The industrial users will continue to use the Trout Mountain Road even after the completion of S.R. 686 to Graham Lake settlement. The distances involved for hauling are fairly similar but the Trout Mountain Road reaches the northern industrial road #967 sooner and would provide quicker access to the south.

Given the above conditions and concerns the following recommendations are made.

Since the time period for completion of S.R. 686 is between 7 - 10 years, the Trout Mountain Road should be maintained and upgraded to provide year round access to industrial, recreational and local users. This route, upon completion of the southern road S.R. 686, should be designated as an industrial road and maintained by the industrial users of the area. This would apply to the northern route all the way to the junction of the Trout Mountain Road and the Peerless-Graham Lakes access road.

With the completion of S.R. 686 the existing link between the settlements should not be considered for future extension. It should be upgraded and maintained to a quality recreational road to provide adequate access for the two settlements as well as the recreational activities that the area has. From the junction of the Peerless Lake - Trout Mountain roads eastward the road should provide access for industrial, local and recreational users. The road should be maintained up to the northern system of lakes but should be discontinued beyond Goosegrass Lake. There should be no bridge construction at the current Wabasca crossing even though an active oil field is located north of the river and future timber harvesting activities are planned. The degree of activity in the oil field currently does not demand the cash outlay for bridge construction, and given an increased productivity, alternative methods of transporting the oil should be considered.

The timber harvesting programs planned for the area are 15 - 20 years in the future given the current planning. Even if a revamping were to occur alternate and feasible means of extractions and access exist which would not require a bridge at this location.

Also, and perhaps most significant, the environmental effects of a bridge located at this site are critic due to the high potential hazard of soil slumping and erosion.

It is recommended that future extension of S.R. 686 towards Fort McMurray follow a route east from the Graham Lake settlement. The Vandersteen Lake area should be avoided by the future extension since the lake holds the greatest recreational potential as a wilderness type lake.

These recommendations are forwarded with the understanding that the proposed route planned for S.R. 686 has been agreed upon and will not be abandoned. If it should be decided some time in the future to withdraw this route in favor of an alternate location, the following route is proposed. The existing access via the Trout Mountain road should be upgraded to secondary road standards along its entire length as far as the Trout Mountain tower. From this point future expansion should be directed east of the tower crossing the Wabasca River further upstream from the present road - river junction. The Peerless-Graham Lakes settlement road should be upgraded to recreational road standards to provide access for local residents and future recreational users.

These are the recommendations that this study proposed for the major road access routes to and within the Peerless Lake area.

Subsequent road links to various recreational areas in the study region will be generally outlined in the chapter setting out the recreation recommendations.

The placement of timber haul roads are covered in the chapter on forest

management recommendations. These recommendations cover only those cut sequence blocks which we feel present some conflict with other regional uses. In general it is felt that the haul routes are safeguarded through the forests review of timber operators annual cut plans. Decisions at that time can be aided by the use of the background material which the study provides, such as soils and landforms mapping.

CHAPTER 7

WILDLIFE

BIG GAME

INTRODUCTION

The big game animals within the study area include moose, black bear, mule deer, wolves, and possibly caribou and grizzly bear. Of these, the moose is the most important in that it provides the basis for the resident and guided hunting as well as supplies the major source of fresh meat for the native settlement. Black bear is of secondary importance for its fur and meat but is not of major significance. The remaining big game species occur in such a limited amount that they provide little for management concern.

The major portion of these recommendations will deal, therefore, with the moose population and its uses.

RESOURCE SOURCES

The information bases for the recommendations was provided by the Peace River Regional Fish and Wildlife office. Meetings were held with this office to discuss the requirements of our study and the various responsibilities for providing this data (see Resource Atlas-Wildlife). The C.L.I. capability rating for ungulates was used as a general assessment of the overall value of the area for ungulates. Also the existing hunting regulations were consulted as well as the current Wildlife Act.

RECOMMENDATIONS

CARIBOU, GRIZZLY BEAR

Within the area there are no special big game species which require management consideration with respect to habitat and food or travel route requirements. The possibility exists that a few caribou use the area, however, there are no major migration routes or areas of particular concern which need to be safeguarded. This also applies

to any grizzly bear which may be found in the area. The scarcity of these two species can be accredited to the improper habitat requirements within the area in general. Not to any disruptive influence by man such as construction, forestry operations or oil and gas activity. Therefore no recommendations are required on any particular area with respect to these two species.

MULE DEER

Mule deer observed in the air survey are not considered to be a significant indication of a manageable deer population. In discussions with the local residents of the two native settlements it was learned that the last deer shot in the area had been killed several years ago at Graham Lake. Few have been seen since and indications are that they never were of significance as a source of meat or hides for the people.

BLACK BEAR

The black bear population in the area appears to be high. Fairly numerous and consistant observations of bears or their sign have been made over the last two years. They do not however, constitute a major factor for hunting activities within the area. Although most of the hunters who visit the area during hunting season have a black bear licence they generally consider shooting a bear as a bonus while hunting moose. The local residents often shoot bears and use the fur and meat, but these animals are generally taken while in the pursuit of moose. There is little need for any management recommendations for the black bear of this area. The existing hunting regulations are adequate protection for these animals.

WOLVES

The wolves observed in the air survey are members of a pack which uses the northern half of our study area throughout the year. Various times during

the summer, while in this portion of the region wolf howls have been heard. These occasions have varied from one or two individuals to a chorus of howls which possibly represents a complete pack. The numbers of these animals has apparently been on the increase in the last few years. This information has been learned through conversations with local residents and hunters who have used the area for a number of years. It has been suggested on more than one occasion that a direct effect of this increase has been a decline in the number of moose. In order to alter this trend it has been suggested that a reduction of the wolves be carried out. This could be accomplished either by licensing hunters to take the wolves or by a predator control program. The need for either of these programs is not justified in the opinion of this study and no recommendations for the control of the wolves will be made.

MOOSE

The moose population, although the major big game animal for the area, is a little below the provincial average. (Resource atlas - Wildlife) It would appear from the available unused browse throughout the area that food limitation is not the limiting factor in the growth of the moose population. A severe winter in 1973-74 when snow depth was above average could possibly have accounted for part of the reason for the low numbers. However it is felt that the major limiting factor on the moose population is the hunting pressure. Hunting pressure comes from three sources, domestic native hunting, resident big game hunters, and guiding.

The domestic native hunting is felt to be the largest hunting factor of the three. It is difficult however, to accurately determine the total numbers of moose taken annually by the people from the two settlements.

Consequently, it is impossible to determine the exact degree of pressure which this form of harvesting is having on the population. It is safe however, to make the statement when the figures for the number of animals taken by resident big game hunters and guide outfits is assessed against the approximated number shot by domestic hunters. Although domestic hunting is carried on throughout the year, there is concentrated effort made just before the breeding season and during the rut. The people hunt mainly in the northern part of the study area but shoot moose whenever they happen across one. Much of the hunting occurs along the road but serious efforts are also made to get back into the bush as well. Big game hunting pressure and success by Alberta residents is, at present, low and should continue at this level well into the future. The present access is poor and better areas for hunting are located closer to major highways and towns. Even as access improves to the area it is felt that hunting pressure will not significantly increase.

HABITAT

There are no areas of concern recognized by the study where conflicts occur or will in the future occur between habitat requirements for the big game species, specifically moose, and other land uses. Although no detailed browse surveys were carried out, general observations were made throughout the area by the field staff. Regrowth on seismic lines and trails as well as succession after fires and through natural successional growth provide excellent sources of browse which in many cases showed little or no utilization.

In assessing the C.L.I. ungulate capability with projected land uses for the area no special land use regualtions will be recommended. The key

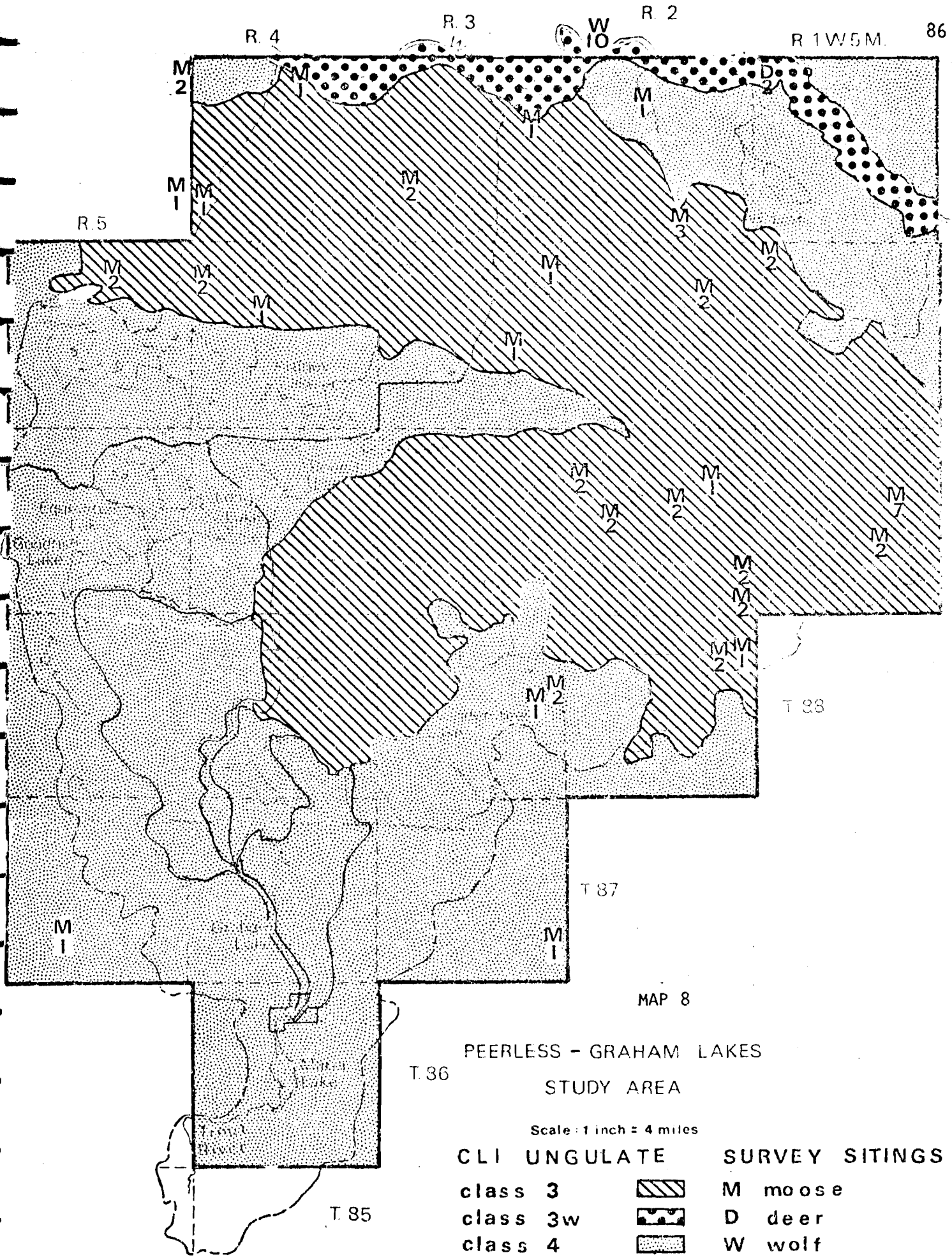
winter range areas as identified by the C.L.I. map and the 1975 air survey indicates that possible land uses for the future will not conflict. (See Map 8 and Chart III).

There is little possible threat to the area for agricultural uses since the soils of this region plus the climate figure heavily against agricultural development. (See Agriculture Chapter)

Although a number of cut sequence blocks are located within some of the wintering areas it is felt that forestry operations will have little land use conflict. (M.U. S11, Cut Sequence Block 14; M. U. S14 Cut Sequence Blocks 5, 6, 7, 8, 9, 10, 11, 12, 13, 15 and 3)

Cutting operations have been carried out in the past on winter range areas elsewhere in the northern area with little disruption of the moose population for that area. The cutting program may in fact assist the moose by opening up areas for browse growth. A possible drawback to these woods operations could be the increased access to the area for hunters. However, most of the roads will be winter roads which will generally be impassable during the fall hunting season.

Oil and gas exploration has been carried out in the past and little conflict with the animal populations has occurred. Production of any future fields in the area however would definitely affect the population. Oil field production and development requires road access of a fairly high standard since maintenance and access throughout the year is required. This standard is generally greater than most forestry operations, especially winter programs and as such the access to the area will be greater for oil production than winter timber operations. With this increased access greater hunting pressure will be placed on the animals which will directly affect their population within the area. (See Forestry Chapter)



MAP 8

PEERLESS - GRAHAM LAKES

STUDY AREA

Scale : 1 inch = 4 miles

CLI UNGULATE

class 3
class 3w
class 4

SURVEY SITINGS

M moose
D deer
W wolf
2 number/site

CHART III — CLI UNGULATES

CLI CLASS	DESCRIPTIVE LEGEND
CLASS 3	LANDS IN THIS CLASS HAVE SLIGHT LIMITATIONS TO THE PRODUCTION OF UNGULATES. Capability of these lands is moderately high, but productivity may be reduced in some years. Slight limitations are due to characteristics of the land that affect the quality and quantity of habitat, or to climatic factors that limit the mobility of ungulates or the availability of food and cover.
CLASS 3W	Lands in this special class are CLASS 3 areas that are winter ranges on which animals from surrounding areas depend.
CLASS 4	LANDS IN THIS CLASS HAVE MODERATE LIMITATIONS TO THE PRODUCTION OF UNGULATES. Capability on these lands is moderate. Limitations are similar to those in CLASS 3 but the degree is greater.

GUIDING

There has been talk among the people that they would like to set up a guiding service within the area. This suggestion could possibly be considered as a viable means of income. The current guiding which is carried on occurs mainly along the Wabasca River valley. If the proposed new guiding regulations are carred out then this area may become a permanently designated guiding camp. Perhaps this area could be set up specifically for a guiding outfit from outside the area while the majority of the study area be designated as the guiding area for a future native guiding program.

The type of guiding program that would probably be the most successful would be one where the people hunting would have access to areas which normally would not receive pressure from the resident big game hunters in the area. This implies a system of isolated or semi-isolated camps linked with limited and restricted access under the control of the native guiding service for the area. From all indications it would be impractical to establish guiding camps on lakes or areas where the general public currently or will in the future have access. However, by setting up a program where the clients have access to areas which, due to their isolation, are difficult to get to except by way of the guiding services provided, then a reasonably successful program could be assured. It should be made clear to the people the importance of proper game management if they are to succeed in the guiding operation.

A program showing the people the need for protection of the game animals during the offseason in order to ensure a successful hunting experience during the open season would be required.

BIRD GAME

INTRODUCTION

Bird game populations did not require a specific survey program to be carried out. This was felt to be unnecessary by both MUPS and the wildlife biologist at Peace River. Notes on the presence of the different birds were made throughout the time of the study by all members of the program.

BIRD GAME - UPLAND

The upland bird game species found in this area include only the spruce grouse (Canachites canadensis) and the ruffed grouse (Bonasa umbellus). During the study period the populations of these two birds were at an apparent high. The concentrations of birds from both species when compared to the reported sightings throughout the Peace River Regional Wildlife office's jurisdiction confirmed this observation.

The habitat provided in the area is excellent, and with the amount of development expected to be carried out in the area, little disruption of the habitat is expected. No specific recommendations are necessary in order to provide continuing habitat for these particular birds. Hunting pressure on these birds by both local native people and outside hunters is light. There is no specific major hunting program carried out on the birds with most of the harvest occurring during the moose hunting season. The birds are not particularly sought after by the native people in the area although they are taken whenever the opportunity arises.

It is not expected that even with improved access the demand for these species as a major hunting experience will increase. The current bird game regulations provide adequate protection for these species.

BIRD GAME - MIGRATORY

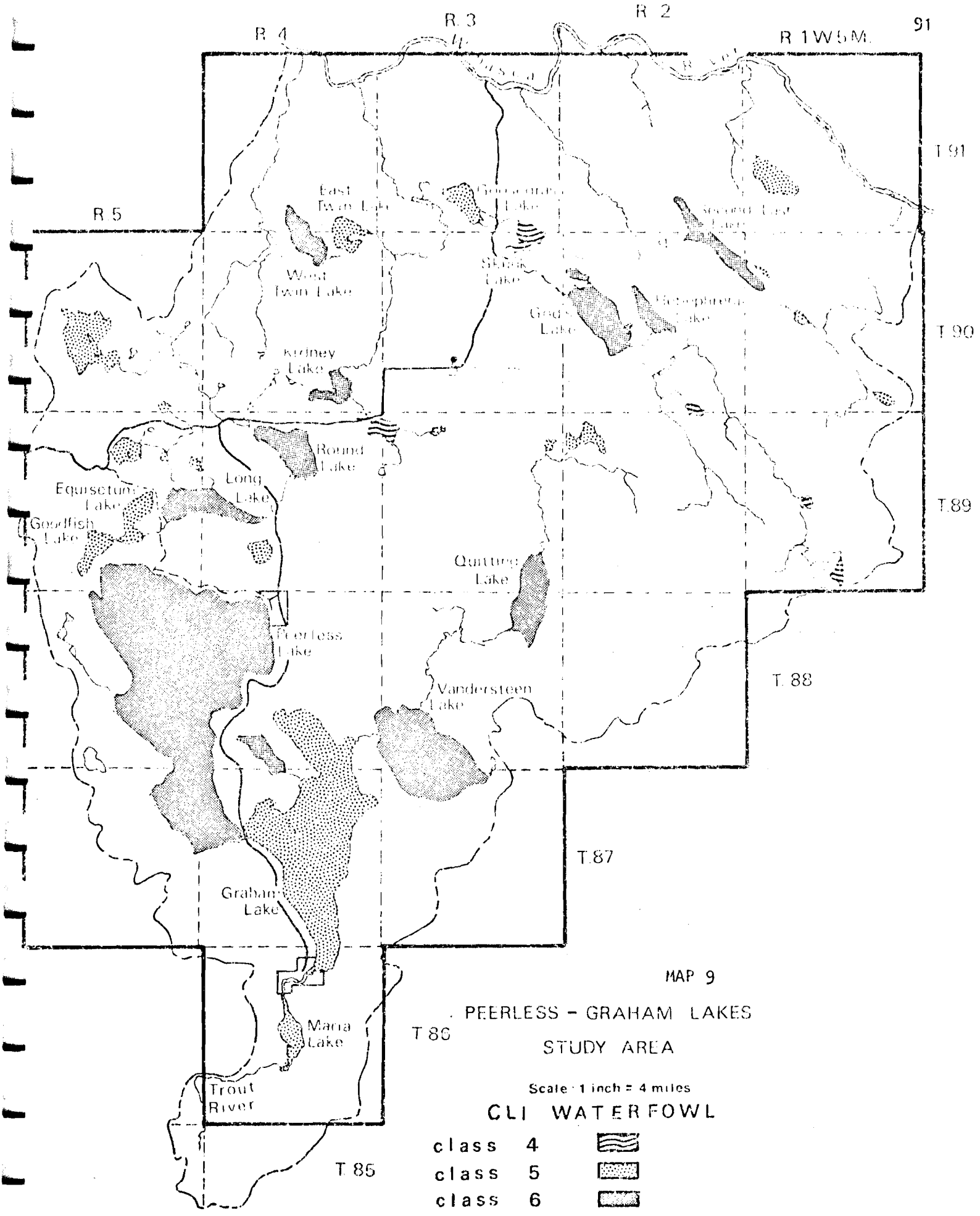
Migratory species compose the largest proportion of the birds observed in the area. Some are summer residents while others use the area only during their yearly migratory cycle as a temporary stop over and resting site. (See Map 9 and Chart IV)

Both land based and water associated migrants are common to the area. The song birds and smaller land birds had little work carried out on them. Their habitat requirements and use of the area when compared to projected future development raised no conflicts. As a result the work on these species merited only marginal concern for our project.

Of greater concern were the land based birds of prey found in the study. A list of these birds could include: bald eagle (Haliaeetus Leucocephalus), golden eagle (Aguila chrysaetos), osprey (Pandian haliaetus), gyrfalcon (Falco rusticolos), american kestrel (Falco sparverius), red tailed hawk, (Buteo borealis) and marsh hawk (Circus cyaneus).

A significant finding for the area was the observation of a fairly large concentration of eagles. Both the bald and golden have been observed but the majority of the sightings were of the bald eagle species. Only one golden eagle was spotted during the program.

Although the eagles were spotted throughout the region two areas of significance were noted. The Vandersteen Lake area as well as the adjoining east side of Graham Lake, and the south end of Round Lake. Both these areas consistently had bald eagles observed in them.



MAP 9

PEERLESS - GRAHAM LAKES

STUDY AREA

Scale: 1 inch = 4 miles

CLI WATERFOWL

class 4

class 5

class 6

The birds themselves ranged in age from what is believed to be this year's (1975) young to mature full grown birds. A family group was observed at Vandersteen Lake and from old nest sites and bird observations it is possible that another family group may live in the area on Round Lake.

There are a number of osprey and sightings were frequently made throughout the area. One major site of observation was Round Lake where it is possible that a family of these birds may live.

The other birds of prey were sighted infrequently with the exception of the American kestrel and the marsh hawk. These last two were regular residents of the region and were sighted often.

No special restrictions are recommended in order to safe guard the birds of prey in the area. The types of development foreseen for this area does not conflict with these birds to any great degree. Possibly some special consideration should be given to those areas which appear to be the regular nesting sites of the eagles and ospreys.

Ducks and geese represent the majority of the migrants but gulls, terns, pelicans and loons are also significant.

Large flocks of migrating ducks are fairly common. The buffle head, (Bucephala albeda) appears to gather in the largest flocks of all the ducks. Large numbers of buffle head were observed during the fall of 1975 in the northern chain of lakes. Skunk Lake appeared to be the major resting lake for these birds. This observation may be an isolated sighting and may not be a regular stop over for these birds, but a good possibility exists that a large number of ducks annually use these northern lakes. There does not appear to be any recommendations required to protect these resting areas for the birds. No land use activities are fore-

seen which may cause interference either with the birds or their habitat. During the migration the summer population of lesser scaup (Aythya affinis) and white winged scoters (Melanitta deglandi) increases significantly. The scoters are hunted fairly heavily by the natives of the area especially during the moulting period. Groups of up to 15 have been observed during the summer months and all the lakes in the area appear to have scoter and scaup populations.

The mallard (Anas platyrhynchos) and pintail (Anas acuta) duck numbers in the area are not significant. Although observations of these birds where made throughout the year no major concentrations requiring special recommendations were reported. Grebes [Red Necked--Podiceps grisegena] and possibly [Western--Aechmophorus accidentalis] were also found throughout the area. Family groups have been observed during the summer months, and the birds have been found on all the major lakes in the study region.

There were no geese observed during the study that were summer residents in the area. Flocks of both Canada (Branta canadensis) and snow (chen hyperborea) geese were common visitors duirng the fall but their concentrations never approached levels significant enough to merit special migratory restrictions. From discussions with the fire tower operator at Trout Mountain it appears that the Wabecsa River may be of particular importance for the migrating geese. Flocks were observed to regularly use the river valley as a guide path and river stop over during the migration. The stop overs were usually only for a night, a fairly common practise amoung the migrating geese in the northern area.

Of special note in the discussion of the migrant species are the white pelican (Pelecanus erythrorhynchos) found in the area. These summer

residents were not observed to nest but simply use the lakes as resting and feeding areas. Pelicans have been observed on Round Lake, Peerless Lake, Graham Lake and Vandersteen Lake. The largest concentration of these beautiful birds is Vandersteen Lake and the Vandersteen Lake inlet bay on the eastern side of Vandersteen Creek. Little is known of their feeding habits but not more than 2 birds at a time have been observed outside of the fairly small area around either end of Vandersteen Creek. It would be of value for work to be done on the activities of this small non-nesting pelican population in order to ensure that they are not disrupted by future activities within the area.

Perhaps the most important bird area that was observed during the study is the small thin island in the northern portion of Graham Lake. This island is the summer home for a large number of terns and gulls. These birds feed offshore from the island as well as use the land for resting and nesting grounds. Currently the amount of disturbance of these birds is relatively light. However even our brief visits to and near the island and boat traffic in the northern portion of Graham Lake would cause a disturbance to the resting or feeding birds. Therefore in order to safeguard the birds it is recommended that a craft limitation be placed around the island restricting the distance which a craft can approach. Also camping or other necessary use limitations which are required should be set up.

A final migratory species which requires discussion is the common loon (Gavia immer). Up to ten and fifteen were observed in a group during the fall migration and seemed to be concentrated on the larger lakes. Their stay was very short and their stop over requirements during their brief visits are unlikely to conflict with future land and water uses.

In summary the Peerless Lake study area is not of major importance as a staging area for migratory birds. The species which use the area do so for only brief periods and little possibility of future land use or water use conflicts exist. There are a number of species which use the area for summer nesting but their numbers and requirements although important, do not reach the magnitude of the breeding grounds further north. Again little possibility of conflicts exists.

CHAPTER 8

FISHERIES

FISH RESOURCE

INTRODUCTION

The management of the fish resource within the study area is of great importance. There are a number of users who depend upon the proper management and maintenance of the fish stock.

The study has recognized the importance of the recreational resource that the area has to offer to vacationers. Their recreational enjoyment of the area is now and will continue into the future to be largely dependent on the fishing that the various lakes offer.

At the present time the majority of the lakes receive commercial netting activity. With the future improvement of access to the area the commercial fishing pressure will surely increase.

Also the domestic fishing rights of the native communities at Peerless and Graham settlements must be assured in order that they can continue to net fish to supplement their food sources. Therefore it will be an important part of the management scheme for the Peerless-Graham Lakes Management Study to present recommendations in order to set up a management program for the fish resources of the area.

RESOURCE SOURCES

The recommendations for the fish resource have been compiled after an examination of the following resource sources. (Information atlas available on request.) In 1968-69 under the sponsorship of the Division of Fish and Wildlife, Fisheries Section a preliminary biological survey of the major waters in the Peerless Lake areas was carried out. These findings were published in Survey Report Numbers 8 and 9.

Creel census information was compiled for 1974-75 during the summer months. However, they were poorly returned and cannot justifiably be used as an indicator of fishing pressure from recreational fishermen. The commercial fishing records for the area have also been compiled, and an evaluation of their information was made in order to identify patterns or fluctuations in catch, etc.

Correspondence with the regional fishery biologist in Peace River was maintained throughout the study and many of the recommendations are based on comments forwarded to our office by him.

Also, the existing legislated acts were studied in order to review the regulations enforceable by law, that could be used in protection of the fish stocks. (Fisheries Act, Alberta Fish Regulations, Alberta Fish Propagation Order)

RECOMMENDATIONS

These recommendations apply only to the fish stocks themselves. Separate recommendations are prepared for sport fishing and commerical and domestic fishing. It was felt that these activities are dependent on the fish resource and the proper recommendations for their use could only be made after the recommendations for the fish resource itself were set out. The existing information on the fish stocks within the lakes is inadequate for preparing detailed management plans. Too little is known of the life histories of the different species within the waters of the study area to base definite management decisions on. It is recommended that detailed data gathering should be undertaken by the Fishery Division of the Department of Recreation, Parks and Wildlife. Time and budget constraints will undoubtedly affect this program, therefore, the following schedule of study concerns is recommended.

First, the unique lake trout fishing in Peerless Lake has been the centre of the current recreational fishing attraction for the area. This fish resource is subject to commercial fishing as well as domestic and sport fishing pressures. There has been no detailed life history study carried out to date on the lake trout and it is our recommendation that such a study be done. Until such time as this work has been completed the existing regulations governing commercial-domestic and sport fishing for lake trout appear to provide adequate protection and should be continued.

It is also recommended that a preliminary survey of Vandersteen, Round, Long, Goosegrass and Equisetum Lakes should be undertaken to identify spawning areas for the game fish stocks of these particular lakes. It is further recommended that once these spawning areas have been identified and according to the powers within the Alberta Fish Propagation Order that these areas be provided special protection from recreational angling during selected periods of time. This measure has been recommended because of the following considerations. The game fish stocks within our area are particularly vulnerable to angling during their spawning period. At present the fishing pressure in the area is such that large catches by only a small number of anglers is occurring. However as pressure increases from angling the subsequent increase on the fish stocks during this time will likewise increase. Since so little is known of the life histories of these fish stocks, protection of their spawning areas will provide an adequate safeguard for the fish until this data is collected. This action should be carried out as quickly as man-power and budget will allow.

Although this phase is important it should be remembered that it is only a safeguard measure until more detailed information is available. This implies that a detailed program of study for these lakes be set up and carried out over time.

The lakes named above have been selected primarily because of current and immediately projected fishing pressure which the study has recognized. This does not mean that the fish stocks in Goodfish, Peerless, Graham, God's, West Twin, East Twin, Hebephrenic, and Second Last Lake should be ignored. A program of study for these lakes should be carried out but from our estimation the pressure for their information is not as critical as the previously mentioned lakes. Goodfish Lake has had almost no fishing pressure from recreational fishermen during the last two summers (Creel census data and personal communication).

Peerless Lake is best known for its lake trout and almost exclusively fished for this species. Pike is an incidental catch and not pursued by the anglers. Walleye have only been caught on rare occasions and does not provide a major fishery. Graham Lake is used by the lake trout fishermen who can not, because of ice or wind conditions, get on Peerless Lake early in the year. Few fishing parties travel to the area for the purpose of fishing Graham Lake (Creel census and personal communication). Also the size of the lake makes it difficult to decide which areas to productively fish. Many parties use the lake as a link with Vandersteen Lake and overlook the waters of Graham Lake for the more productive Vandersteen. God's Lake has been provided with special restrictions

through the placement of trophy lake status on it. This status provides special catch restrictions which will adequately safeguard its potential as a trophy lake. West Twin, East Twin, Hebephrenic, Second Last, Skunk and a number of unnamed lake bodies provide either poor fishing (fisheries report) or are so isolated and hard to get to that the need for detailed information on them is not immediately required. It is expected that apart from very limited development these lakes will receive very little pressure and time and money would be wasted if detailed work were carried out on them. For these reasons the suggested time and lake sequence for study has been recommended.

CHAPTER 9
SUMMARY

SUMMARY CHAPTER

In order to bring together the resource recommendations made in the previous chapters a summary chapter has been included. This will provide a written discussion of the main resource recommendations and a land use map which will help to identify areas of use concerns for the study.

WATERSHED

The present watershed conditions can be described as untouched. The quality and quantity of the waters is high subject only to the seasonal fluctuations caused by precipitation, evaporation, algae and weed growth.

The local settlements have contributed little to the deterioration of the water quality. None of the proposed development recommendations will we feel, add to the decrease in water conditions. The forestry cutting and seismic operations because of low relief, filtration and movement of water throughout the watershed will not cause siltation problems, discolouration problems or increase or decrease in mineral content of the water. Since agricultural activity will not be carried out no problems from chemical fertilizer pollution, feed lot effluent pollution, or siltation and discolouration of water will occur.

No channelization or water storage programs are needed or recommended in the area. Programs of this type will not add to the planned development of the recreational value of the water resources. No power generation. irrigation, or stream stabilization requirements are of concern in this lakes system. There is no market need for electrical generation within the area and no need for control of the Wabasca River.

The watersheds, given the planned development outlined by the study should remain in as similar a condition as they are currently found. Subject only to the natural eutrophication process's.

RECREATION

The recreation resource within the area has been recognized as having the highest potential of the resources for the Peerless-Graham Lakes area. Demand for this resource has been increasing steadily and has created a number of problem areas. The current users do not have facilities, even the most basic type, to meet their needs. No recognized camping areas have been set up and many of the visitors park or camp in scattered groups throughout the area. This not only increases the problem of cleaning up camp areas but also the chance of forest fires. With the improvement of access to the area as projected by the Department of Transport more tourists are expected to the area. This requires the pre-planning and development of facilities for these visitors.

Towards this objective the plan recommends the development of public and commercial recreation facilities within the area. The public facilities developed and administered by the government have been selected throughout the study area (see Recreation Resource, Chapter 2) primarily to supply campsite locations, beaching area and boat launching sites.

Commercial ventures within the study area are recommended to be developed by the local native people of Peerless and Graham Lakes settlement. These programs which will provide revenue to the local communities are recommended for development on the existing leased settlement lands to which they presently have possession.

It is not possible to project accurately the increased user pressure for the future. It is felt that much of the increase in the visitors will come from the Peace River area to the west. Once the proposed access is

completed the peopie of the Peace region will have good access to a major lake complex. The value of such an area to the people can be judged by the fact that the Peace region lacks major recreational lakes of the quality and quantity that are found in the Peerless-Graham complex.

Also as the northern industrial road is completed to Fort Vermilion more visitors from the Slave Lake and Edmonton areas will have an opportunity to visit the area.

Possibly in the future residents of the Fort McMurray area will make use of the high recreation value of the complex as the area is linked by the future roads.

Certainly all this will depend on access and the timing of development. It will be impossible at this time to predict when the access will come on line since construction priorities change. As a result the development of recreational areas within the study region should be closely watched by the responsible agency. As phases of construction are completed the appropriate facility development as set out in the study should be geared to come on line to meet the projected increase in use.

TIMBER

The study area is divided by two management units, in the northern part by M.U. S14 and in the southern area by M.U. S11. Within M.U. S11 there are 9 cut plan (C.P.) areas set up within or on the borders of the study boundary. Management Unit S14 has 12 cut plan areas (C.P.) which are a part of the study program.

Currently no cutting operations are taking place in any of the C.P.'s of the two management units. However, cutting is to begin very soon in

M.U. S11 on C.P. 4 and 5, and is to progress through the M.U. as described in the forestry chapter. Since M.U. 14's quota holder is now in receivership the commencement of harvesting operations on the C.P.'s is unknown. Even before the closure of operations by the quota holder it was not proposed to begin cutting on the C.P.'s within the Wabasca River area for another 15-20 years. Therefore to project a cutting date is not possible at this time.

Areas for concern in harvesting operations are those areas within the C.P.'s which border onto recreational lakes. These C.P.'s will require that management attention be directed in their cutting to follow those recommendations as set out in the report for the area. There is little concern for forestry operations in M.U. S11 with respect to erosion, wildlife disturbance, and watershed damage. The generally low relief and diversity of soil types reduces the erosion and watershed damage potential. No key winter ranges, migration routes or calving grounds are found in the area. However, in M.U. S14 those C.P.'s which border the river may require more management attention with respect to erosion damage and wildlife disturbance. The slopes of the Wabasca River are steep with generally erodable soil conditions, and seepage sites. Also the valley of the river is indicated as a key wintering area for ungulates such as moose.

Although a general cutting progression has been set up for M.U. S11 there is every indication that it could be easily changed depending on the location and timing of development for the major transportation routes as proposed by the Department of Transport. Not only the cutting progressions for the M.U. but also the hauling routes to southern market areas

will also be directly affected by the road locations. Therefore, for the forest industry of the area much depends on the location of the major roads and their development timetable. Once timber harvesting begins within the study area approximately 20 years of steady operations can be expected. This of course is based on the winter operating conditions and the projected length of cut for each C.P. as outlined in the forestry chapter (also see Chart V & VI). This should provide a fairly stable economic base for the local residents. However, the development of the forestry industry within the area will depend very heavily on the development of markets and a strong economic situation for the quota holders of the area.

S11 - Q1 | ANNUAL CUT 6.2 MMFBM | CHART V

Cut Plan Area Number	Total Merchantable Volume (MFBM)	Approximate Duration of Cut (At 50% Removal)
4 & 5	26,522	2 years
6	4,709	½ year
7	26,071	2 years
11	10,074	1 year
12	48,980	4 years
13	10,426	1 year
14	14,470	1¼ years
15	4,358	½ year
9 TOTAL	170,038 TOTAL	12¼ years TOTAL

S14 - Q1 | ANNUAL CUT 9.8 MMFBM | CHART VI

Cut Plan Area Number	Total Merchantable Volume (MFBM)	Approximate Duration of Cut (At 50% Removal)
1	49,125	Cut
4	11,626	2/3 year
5	5,145	¼ year
6	10,485	½ year
7	5,220	¼ year
8	4,861	¼ year
9	15,380	3/4 year
10	12,120	3/4 year
11	37,905	2 years
13	4,854	¼ year
15	22,689	1 year
11 TOTAL	179,410 TOTAL	72/3 years TOTAL

OIL AND GAS

Under the terms of reference of the moritorium no oil or gas exploration or development is allowed in the study area at the present time. Past history of activity dates back 20 years and was active up until the moritorium closure. Large areas of the study are under oil and gas disposition and future programs are expected. The likelihood of the discovery of a gas deposit is low, however the area is closely linked to a number of established oil fields. The Senex and Red Earth fields are oil producing fields which are within 55 miles of the study area. Also there appears to be the possibility of a new field being discovered immediately to the N.W. of the study region. Therefore there is a possibility of the discovery of an oil field within the study area.

Exploration and development holds little drawback from an environmental standpoint. Terrain sensitivity to activity is low except in the Wabasca River area where steepness of slope and seepage sites may cause erosion damage. Generally the area is of low relief and little damage from erosion is expected.

Possible conflict with the recreational enjoyment of specific areas has been discussed. These are essentially the shorelines surrounding certain lakes within the region.

Connected with the waterways is the possible damage caused by oil spills or pipeline construction. The water flow system of the area is very interconnected. The lakes systems as well as the underground waterflow could easily spread the effects of an oil spill throughout the area. Therefore care would be required if an oil field were in fact developed in the area or a pipeline was planned to pass through it.

It should also be recommended that the oil and gas exploration and development programs where ever possible should use the same access areas and cut lines as forestry operations, and visa-versa. In many areas the mineral programs will preceed forestry and therefore forestry operations should look

at using the existing lines. This can be accomplished in this area since all operations by forestry and oil and gas programs are carried out in the winter.

It should be noted that no mineral deposits such as coal, iron ore etc., is found in the area. Also no mineable deposits of oil sands exists although oil bearing sand is found in the McMurray formation at approximately 2,000 down. This deposit is not productive for strip mining or in-situ development given the existing technological knowledge.

AGRICULTURE

Presently no agricultural practices are being carried on in the area. The growing of domestic cereal crops is not possible due to climate and poor soil conditions. The raising of domestic livestock is not recommended because of climate, poor forage, difficulty of clearing, fencing and management. Some possibility exists for the production of small gardens for domestic use by the local people. Also a few head of horses are kept by the people to be used in hauling the wagons for access to off road locations. These, however, are in a tight balance between climatic winter conditions and available forage. The development of commercial agriculture in the area is limited both by economics and environmental conditions. The costs involved to develop a program are, we believe, to high for the eventual product.

TRANSPORTATION

The development of transportation routes to the area is the key to the development of the timber, oil, and recreation potential. Of most concern is the location, timing and extension of the proposed secondary road 686 by the Department of Transport.

The current plans indicate that SR 686 will link up with the southern portion of our study region. From here the route is proposed to eventually carry

on to Fort McMurray. Two points are key to this route, first it does not meet the best needs of the study area for access to natural resources or for the development of the recreational resource of the area. Secondly there is some question that the local residents of the two native settlements are in favour of having this major route linking directly to their areas. The study would like to recommend that the routing of SR 686 be changed to follow the general route that the Trout Mountain road now follows. This we feel will supply better development for forestry resources as well as oil development. Also the future extension of this route eastward should possibly extend from the Trout Mountain tower, crossing the Wabasca River upstream from the present access point.

The existing road between the settlements should be maintained as a recreation service road in order to ensure access for the local residents and future recreationalists. Also the portion of the Trout Mountain road which extends to Gods and Goosegrass Lakes should be maintained as a recreation service road during summer and possibly as an industrial hauling road for winter oil and timber operations.

This brings up the question of industrial vs. recreational road users. There is little conflict at the present time, the industrial users are generally restricted to winter operations and therefore use the roads only at this time. The recreational users of the roads are summer visitors and use the roads well after the industrial users are finished. However there is a potential conflict if and when the existing mill located just outside of the study area begins to produce during the summer. The hauling of the mills products to the south may at times create a possible conflict between recreational and industrial road use. The road location for SR 686 as proposed by the study will we feel, minimize the conflict of use and still provide the best access for both users groups.

The existing access is not adequate to handle the future increase from industrial recreational and local users. There is a need for improved access for all three user groups to the area. The proposed road system as discussed under the Transportation Chapter will best solve these needs.

WILDLIFE

The big game animal of most concern is the moose. There are no significant populations of other big game species except black bear. However, black bear are of less importance to the area from a hunting and meat standpoint than the moose. Currently the moose population receives limited guide and resident hunting during the hunting season, but does have steady year round hunting pressure from the local native communities in the area.

Critical habitat conditions for the moose have been identified within the Wabasca River Valley and possibly in the upland region to the east of Trout Mountain tower. Industrial winter activity such as forestry cutting programs and seismic programs have been altered in their respective chapters to this situation. In general there is little identifiable conflict between the big game animals of the area and the industrial users.

The migratory bird populations in the area are not significant, with respect to the need for special recommendations for staging or nesting areas. Of greater concern would be the identification and protection of specific bird areas and species. The pelicans, eagles and ospreys of the area are key species which should have special notice of their areas for nesting, breeding, etc. identified. The island in Graham Lake should

also be specially noted since it is a major nesting and breeding ground for many of the areas gulls and terns. These species and areas of concern should be understood and attempts to minimize disturbance by recreational and industrial users made.

FISHERIES

The fish stocks of the area are currently supporting the recreational, commercial and domestic users with a high quality product. Most important among these fish species is the Lake Trout population of Peerless Lake. There is a strong need for a major study on this particular fish species since much controversy surrounds it. The commercial and recreational fisherman each have special concerns with respect to harvesting this fish stock and therefore require management decisions based on sound biological studies.

Not only the Lake Trout should be investigated but the other game fish such as walleye, perch and pike require study and in some cases protection. Presently the walleye populations of the various lakes receive intensive fishing pressure during their spawning period. Most fishermen to the area fish the inlets and outlets of the lakes for the spawning walleye during spring.

The commercial fishermen have in the past been unable during many years to fish the various lakes adequately due to poor access. As the roads improve (see Transportation Report) this will permit commercial netting the entire year round. Therefore new fishing quotas and timings of catches should be assessed by the Fish and Wildlife agency at this time.

These above measures are recommended by the study in order to maintain the high quality of fishing which all elements of the fishing fraturnity currently enjoy. Currently there may be misunderstandings between commercial, domestic and recreational fisherman, but this is due generally to a misunderstanding of the methods of operation practised by the different groups. This problem may increase as pressures for the fish stocks increases as the area becomes more accessible and opens up. However a comprehensive program of educating the various fishing groups to each others concerns will hopefully relieve some of the problems. Especially if recommendations for improvement or limitations of catch etc. can be backed by sound biological information on the various fish stocks.

RESERVATION RECOMMENDATIONS

The Peerless Lake Study area has been under a recreation holding reservation during the time that the study has been undertaken. This has placed a moritorium on the area restricting activities such as site development for recreation, oil and gas exploration etc. The reservation is to terminate in March of 1977.

It is the recommendation of this study that a new reservation be applied to the areas indicated on the accompanying map as "Recreation Reservation." The intention of the reservation is to direct any land use activities which are proposed for the area under reservation to the integrated management plan which has been developed. It is essentially to act as a safety check on activities and to ensure that the recommendations mentioned within the management plan are followed.

The lands proposed under the new reservations will be smaller in total size than the existing reservation. This will permit use of some of the area's which are currently under the moritorium. The size and purpose of the new reservations has been discussed with the local Slave Lake forest.

LAND USE MAP (MAP 10)

The map indicates areas identified by the study as possible use constraints. The accompanying legend describes the particular concerns for the zones and gives a brief discussion of these concerns. Each of these areas is discussed within the specific chapter of the report which deals with the particular reasons for potential problems, i.e. Forestry operations for working within the winter range for ungulates is discussed within the forestry chapter. More information can be learned by referencing to the resource chapter of concern.

LAND USE MAP LEGEND

Zone of concern for recreation reservation and forestry operations

Proposed recreation reservation

Forestry operation areas - areas within which future cutting operation will be carried out.

Low concern areas - forestry operation not likely to be carried out due to low volumes of merchantable trees, oil and gas exploration and development adequately safeguarded by existing policies, low recreation zones.

Zone of concern for key winter ungulate range and forestry operations and oil and gas exploration and development. Also constraints due to erodable soils, and steepness of slopes.

Miscellaneous Lease 2892 and 2893

Recreation service road (proposed)

Proposed possible extension of SR 686 by hwy.

Existing location SR 686 proposal by hwy. - center line cut

Proposed location extension of SR 686 by the study

Dividing boundary between M.U. S14 and M.U. S11

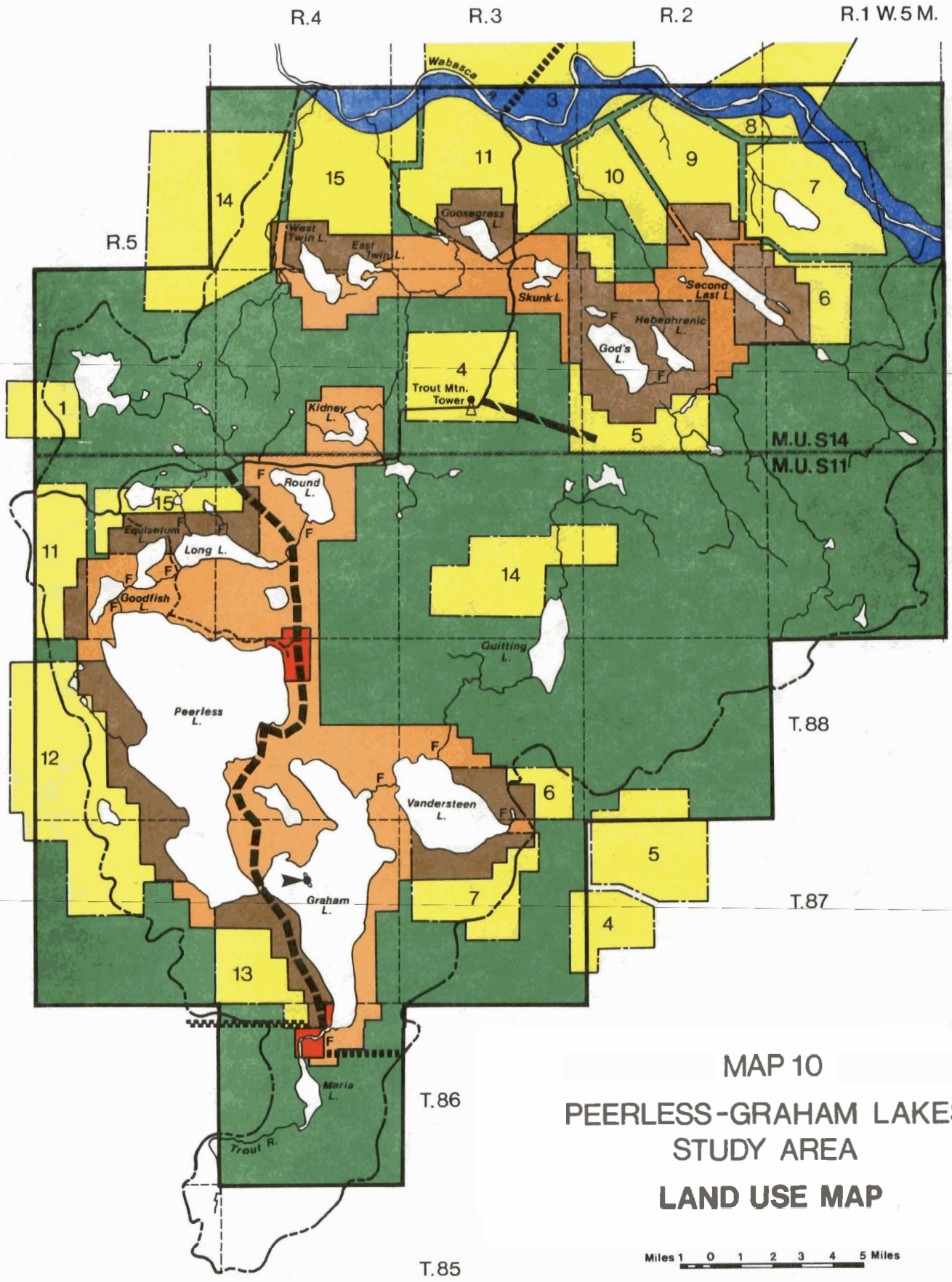
16

Designated cut sequence block number

F

Areas identified by the study which may have fishing concerns (spawning areas)

Proposed protection area



MAP 10

PEERLESS-GRAHAM LAKES STUDY AREA

LAND USE MAP