GWILLIM LAKE MASTER PLAN



Ministry of Lands, Parks and Housing PARKS AND OUTDOOR RECREATION DIVISION

MEMORANDUM

To: C. Velay Assistant Deputy Minister (Acting) Victoria

Date: May 3, 1983 File: 2-4-2-47-27

We are pleased to present for your approval the final Master Plan for Gwillim Lake Provincial Park.

For Acting Executive Director

Approve **Begion**~Director Omineca-Peace Region ~e 17/83 G. Trachuk Director Planning and Research Branch

Omineca Peace Region Parks and Outdoor Recreation Division Ministry of Lands, Parks and Housing

> GWILLIM IAKE PROVINCIAL PARK Master Plan April 1983

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FIGURE 1





PART 1

1.1 Purpose and Summary

1.1.1 Plan Purpose

The purpose of this document is to provide a comprehensive plan that will guide the management and development of Gwillim Lake Park in order to achieve Recreation, Tourism and Conservation goals of the Parks and Outdoor Recreation Division. A degree of flexibility will be maintained in order to incorporate new information as well as feedback from management decisions and actions within the Park.

The Master Plan will be reviewed and revised if necessary in five years time. This will ensure that the Plan continues to reflect the intent of Gwillim Lake Provincial Park.

1.1.2 Plan Summary

Gwillim Lake Park (9187 ha) is located 56 kilometres south of Chetwynd in the Rocky Mountain Foothills which fringe the southwest portion of the Peace Liard District (Figure 2). The west end of the Park is bisected by a new highway which will serve Tumbler Ridge and the northeast coal projects. An increased regional population and better access to the Park will result from these developments.

Gwillim Lake provides excellent boating and outdoor recreation opportunities in an attractive natural setting. Shore areas are suited to camping, picnicking, fishing, hiking and viewing. In addition, natural features within the park provide good opportunities for environmental education and interpretation. Preservation of the natural landscape and the provision of public outdoor recreation facilities comprise the central management objectives for the Park. Gwillim Lake, of prime recreational value to the surrounding region, will become a destination-oriented facility for tourists and residents of Tumbler Ridge, Chetwynd, Fort St. John and Dawson Creek.

Facilities will be constructed for boat launching, auto-camping, picnicking, hiking and boat-accessed camping. A small beach will be improved to accommodate family bathing.

The majority of Gwillim Lake Park will be zoned as Natural Environment, containing hiking trails and boat-in recreation sites. Formal park developments will be centred in the west end of the basin in the Development Zone.

2 <u>REGIONAL AND PROVINCIAL CONTEXT</u>

Gwillim Lake is the only large Provincial Park which provides representation of the Rocky Mountain Foothills physiographic region, albeit only partial representation (Youds-1981). The Park area and terrain features are not sufficiently extensive to include northwest - southeast trending physiographic patterns that characterize a true Foothills landscape. The park is unique however in that a large body of water is wholly contained within the Park reserve. Given the magnitude of environmental disturbance in the surrounding area - northeast coal, oil and gas exploration, logging and hydro-electric development - the parks "viewshed" boundary provides exclusive management over the natural resources of Gwillim Lake.

The lake is an important regional recreation resource. Water bodies, particularly large lakes, are infrequent in this part of the Province. Charlie Lake (Fort St. John) and Moberly Lake (Chetwynd) are comparable to Gwillim in size, but have been developed to include private recreational lots. Swan Lake (Dawson Creek) and One Island Lake are also privately developed. Redfern and Trimble Lakes (northern Foothills), although in a natural state, are not readily accessible.

It is the goal of the Division to conserve representative natural environments and provide outdoor recreation opportunities to the Provinces residents and tourists. Gwillim Lake Park will achieve each of these goals to a large extent, through the development of recreation facilities and maintenance of the basin landscape in a natural state.

Figure 3



1.3 <u>RESOURCES</u>

1.3.1 Physiography

Gwillim Lake occupies an east-west valley that cuts through the eastern edge of the Rocky Mountain Foothills. To north and south of the lake are long ridges which parallel the northwest - southwest tram of the main Rocky Mountain ranges. The west end of the basin is formed by rounded, undulating hills, their underlying shales having eroded to a greater degree than the limestone and quartzite planes of the more northerly Foothills landscape.

The lake elevation is 762 metres, valley sides rise steeply to an average height of 1500 metres. Slopes are generally unstable - soils are silty and there are occasional rock outcrops which expose the horizontal bedding of the ridges. The level ridgetops reflect this characteristic.

The lake is 10 kilometres long and averages about one kilometre in width. There are 25 kilometres of shoreline surrounding Gwillim Lake. Two distinct basins, separated by the delta of Trapper Creek have been formed in a trough created during the last period of glaciation.

A maximum depth of 48 metres has been recorded in the lake. At the eastern outlet, the waters shallow considerably.

Gwillim Lake is part of the Arctic watershed, draining via the Murray and Peace Rivers. Three main creeks supply the lake - Gwillim, Meikle and Trapper. All three are depositing gravel fans, particularly Trapper Creek, and all are subject to seasonal flooding and erosion. Figure 4 illustrates the terrain units within the Park. Figure 4



1.3.2 Climate

Situated on the eastern flanks of the Rocky Mountains, the Park lies in the rain shadow of the Continental Divide. However, climate patterns recorded at Gwillim Lake do not exhibit typical rain shadow characteristics. Air masses rising over the mountains to the west, maintain relatively high moisture levels throughout the area and consequently high precipitation has been recorded. Table 1 illustrates the comparison of seasonal climate variation between stations at Dawson Creek and Gwillim Lake.

Climatic Data Comparison														
Section		J	F	М	А	М	J	J	А	S	0	N	D	Year
	Day Time High (°C)	-10	-5	-1	8	15	19	21	20	15	10	-1	-7	7
Gwillim	Night Time Low	-20	- 15	- 11	-4	1	4	6	5	2	-2	- 11	- 17	-5
Laka	Mean Daily Temp.	-15	- 10	-6	2	8	11.5	13.5	12.5	8.5	4	-6	- 12	1
Lake	Precipitation	37	35	30	19	41	80	70	60	50	33	31	41	527
	Expected as Snow	99	99	95	60	12	0	0	0	0	55	85	99	50%
	Day Time High	-12	-6	-1	8	16	20	22	21	16	10	-1	-8	7
Dawson	Night Time Low	-24	- 19	- 13	-4	2	7	8	7	4	-1	- 11	- 19	-5
Create	Mean Daily Temp.	-18	- 13	-7	2	9	13	15	14	10	4	-6	- 14	1
Creek	Precipitation	32	31	27	14	42	57	48	37	40	35	32	27	425
	Expected as Snow	93	96	89	64	12.5	0	0	0	3	43	78	98	48%

Table 1

The Gwillim basin is continually buffeted by westerly winds which can create white-capped waves over portions of the lake and chilly conditions for boating and shore activities.

Snow depths have been poorly recorded in the Gwillim lake vicinity but are presumed to average between one and three metres.¹

¹Resource Analysis Branch. Preliminary Environmental Report on Northeast;, Coal, 1977.

1.3.3 Water Resources

The waters of Gwillim Lake have been sampled and analysed as being well suited for water recreation. The deep blue, clean water is certainly one of the more aesthetic attributes of the Gwillim basin. Compared to other lakes in the Peace River district, water quality at Gwillim Lake is far superior.² Parks located on Charlie Lake, Moberly Lake and Swan Lake do not have the attraction of equally high water quality as does Gwillim Lake Park. Much of this is due to the freshwater sources of the lake; Trapper Creek, Meikle Creek and Gwillim River all have their source in relatively unspoiled basins.

During the spring freshet, flooding often occurs along the lakeshore and particularly at the mouths of inflowing creeks. At this time, increased turbidity can impair the scenic quality of the water; however, as the season progresses clarity soon returns.

1.3.4 Vegetation

The foothills of the Rocky Mountains are generally classified within the Boreal White and Black Spruce biogeoclimatic zone.³ Higher elevations, such as those found immediately to the north of the Park, support species of the sub-boreal White/Englemann Spruce and sub-alpine fir zone. (Figure 5)

Within these two broad classes however, micro-habitats exist for the maintenance of diverse coniferous and deciduous species. lodgepole pine, aspen, birch and cottonwood stands are characteristic of lower elevations with southern exposure. The heavy deciduous composition creates a colourful autumn display. On colder, north-facing slopes lodgepole pine and black spruce dominate with little or no deciduous cover. Low, wet localities throughout the Park are vegetated by willow, alder and associate species.

² Ministry of Environment field tests - May 1976

Ministry of Environment interpretations - December 1982

³ Youds - Natural Regions and landscapes for the BC Parks System, 1981 R.A.B. - Preliminary Environmental Report on Northeast Coal, 1977





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1.3.5 Wildlife

The area surrounding Gwillim Lake hosts a variety of wildlife typical to north-eastern British Columbia. Large ungulates such as moose and deer may be viewed within the Park. Several species of small furbearers also exist in and around Gwillim Lake. (See Table 2)

Although lacking the nutrient level to sustain large populations of sportfish, the lake does nonetheless contain a large variety which are well suited to recreation. The gravel beds of inflowing creeks provide spawning grounds for trout, whitefish and grayling.

Generally, the summer season provides greater opportunity for viewing wildlife within the Park. Important winter range does exist on the south facing slopes near the east end of the lake. The associated flats are extensive enough to provide good winter browsing conditions for moose and other ungulates. (Table 2)

1.3.6 Cultural Resources

Much of the region in and around Gwillim Lake has been comprehensively examined for archaeological significance. Six localities of known or anticipated importance have been identified within the Park. Of interest was the discovery of several basalt and chert* flakes around the western end of the lake, including the fan of Gwillim Creek. (Figure 6). These flakes indicate that historic Indian bands, Sikanni and Cree, had seasonal hunting camps along the shores of the lake. Further archaeological research may be undertaken to determine the extent and relative importance of these sites

* A flint like form of quartz

TABLE 2

Wildlife Popul	lations in Gwillim Lake Park		
Туре	Species	Comments	Occurrence
	Lake Char (Trout)	Fall Gravel Spawner	Common
	Dolly Varden Char (Trout)	Fall Gravel Spawner	Common
Creart Eich	Mountain Whitefish	Fall Creek Spawner	Common
Sport Fish	Artic Grayling	Spring Cold stream Spawner	Common
	Northern Pike	Spring Lakeshore Weed Spawner	Common
	Burbot	Fall Creek Spawner	Common
	Moose	Mod. To High Habitat Capability	Summer Common
	Mule Deer	Rarely Recorded	Scattered
	Elk	Rarely Recorded	Rare
	Caribou	Rarely Recorded	Rare
Land	Mountain Goat	Reported on Elephant Ridge	Rare
Mammals	Wolf	Near. E. End Winter Range	Scattered
	Black Bear	Sub-Boreal/Alpine Zones	Common
	Grizzly Bear	Alpine Area N. of Park	Rare
	Beaver	Beaver Lodges on N. Shore	Common
	Other Furbearers	Coyote, Fisher, Fox, Lynx, Marten, Sc	uirrel, Muskrat
	Waterfowl	Some Range at East End	Rare
	Grouse	Ruffed and Spruce	Common
Birds	Canada Jay	Timbered Areas	Common
	Songbirds	A Variety of Species Exist	Common
	Raptors	Bald Eagles Nest Here	Scattered
Information So	ource: Ministry of Environmen	t Assessment - 1980	





1.3.7 Visual Resources

The slopes surrounding Gwillim Lake present a natural feature of high scenic distinction (Scenic distinction is defined as an indication of the level of scenic quality, assessed using a combination of comparative elements seen in a landscape)⁴. Essentially un-manipulated by human activity, the forest stands of the park provide a natural vegetative cover and scenic vista to the observer. The panorama of the lake and valley gap provided from the highway is very distinctive relative to the visual terrain encountered elsewhere between Chetwynd and Tumbler Ridge.

From within the Park there are several points which offer comparable views of the surrounding landscape. A natural open ridge meadow above the northwest shore of the lake provides a notable view of the entire west end of Gwillim Lake and beyond to Bull Moose Mountain. Similar views are available from several locations along the lakeshore, particularly the fans at Gwillim and Trapper Creek.

The entire basin of Gwillim Lake is visible from the water surface itself.

⁴ R.A.B. - Preliminary Environmental Report on Northeast Coal Ministry of Environment, 1977

1.4 <u>RESOURCE ASSESSMENT</u>

The popularity of Gwillim Lake Park will be based on the retention of its attractive physical features in combination with the provision of good opportunities for outdoor recreation. The land and water interface of the Gwillim Basin is a pleasing break from the uniformity of surrounding landscapes.

Development potential of the outwash fans at Gwillim and Trapper Creeks is good, although constrained by summer storms and seasonal flooding from the spring freshet. Studies undertaken by Ministry of Environment Water Resources Branch have identified potential flood hazard zones for consideration during park development. Flood line mapping of the Trapper and Gwillim outwash fans clearly illustrates which areas are most susceptible to repeated flooding. The deciduous vegetation and park like setting of the fans are particularly attractive for campground and day-use activities. Southern exposures and natural gravel beaches compliment this potential.

Along the south shoreline, the physiographic character of the basin's steep, densely forested slopes and abrupt drop-off negates the feasibility of recreation development except in the vicinity of the Meikle Creek delta. Here too, the seasonal flooding potential is critical to formal development.

The fisheries resource of Gwillim Lake, of significant importance to Park users, is highly sensitive to improper management. The lakes oligotrophic character means that limited regeneration capabilities for fish populations exist, which may not sustain heavy recreational fishing pressures. Throughout the northern Foothills region, climate patterns can effectively limit summer activities. Above average precipitation levels, combined with a shortened season and cool temperatures can severely constrain opportunities for outdoor recreation. At Gwillim Lake, bathing activities are restricted by uncomfortable water temperatures and a chilly eastward breeze. Sheltered inlets on the lee side of creek fans and at the eastern end of the lake provide good protection from the prevailing wind.

Winter conditions, although severe, do offer some opportunity for outdoor recreation. Dependable snow cover and the open under story of south-facing slopes allows unhampered movement through the sheltered forests of the Park on skis, snowshoes or by snowmobile.* The lake is well suited to ice fishing, however the sensitivity of fish populations must be borne in mind.

*Although regulated, snowmobile use is rot presently controlled in the Park.

1.5 <u>CURRENT SITUATION</u> (also see Appendix 1)

Recreation potential at Gwillim Lake has been recognized since the early 1960's when U.R.E.P. reserves were placed on the eastern outlet of the lake and over the deltas of Gwillim and Trapper Creeks. In 1971, perceiving the northeast region's resource base and development potential, Gwillim Lake Recreation Area was established within the 22,700 acre viewshed of the lake*. At that time, designation as a Class A park was prec1uded by an active Petroleum and Natural Gas Permit.

The Parks and Outdoor Recreation Division installed basic facilities at the extreme west end of the lake in 1981 (Appendix 3). Approval was granted to School District 59 (Peace River South) in 1978 for the establishment of an Outdoor Education Centre on the Meikle Creek delta. This centre continues to represent the most active park use to date (appendix 4). A Use Permit was also granted for a resource exploration road at the extreme west end of the Park, maintained presently by Getty Oil Company.

In 1981, as a result of P.N.G. permit expirations, the 9,187 hectares of the basin were designated as Class "A" Gwil1im Lake Provincial Park.

Currently under construction is the Chetwynd-Tumbler Ridge provincial highway, bisecting the western end of the Park. Park Use Permits have been issued to the Ministry of Highways for this project.

To date there have been no further modification made within the Park. It remains within the registered territory of three trappers and one guide-outfitter, although only, one trapper operates in the Park. Seismic lines, cut during the time of petroleum resource exploration, are still driveable by four-wheel drive. No mineral claims exist in the Park.

An overgrown shoreline trail exists on the south side of the lake. Two unsalvageable cabins are located at the west end.

*A viewshed defines the area visible from a given point, usually limited by topographic features such as height of land or ridgetop.

Figure 7 RECREATION FACILITIES



1.6 MARKET ANALYSIS

In its present state of development, Gwillim Lake Provincial Park receives limited use from regional residents. Hunters and fishermen make seasonal use of the westerly lake access and Park facilities provided, however, no figures are currently available. Although a former resource road along the Sukunka and Gwillim Rivers provided Chetwynd residents with dependable dry-weather access to the lake, during the 1982 and 1983 seasons this route is closed until major transportation route construction is completed. As a result, present recreational use at the Park is (temporarily) negligible.

Prior to the commencement of northeast resource projects, the Peace River District did not generate a significant level of recreational demand. Few public or private recreation developments exist within the south Peace River area (Figure 7).

There are ten provincial parks within a 100 kilometre radius of Gwillim Lake Park. Overnight utilization of selected parks is recorded in Table 3.

Many factors contribute to the variability of figures shown in the above Table. Unfortunately, monthly summaries do not reflect crowded weekend use or daily weather patterns. In particular, the reduced figures of the 1981 and 1982 seasons can be attributed to poor weather conditions. The 1979 records indicate higher recorded occupancies and, when compared to climate data for the same period, a correlation becomes obvious.

Forest Service recreation sites at various small bodies cater primarily to the fishing/hunting recreationist and to date, documentation of their use has been minimal.

TABLE 3

Summer Occupa	ncy Rates of Selec	ted Parks			
In The Vicinity of	of Gwillim Lake –	1979 – 1980			
Park	Campground	Year	Month	Campground	% Capacity
	Capacity			Occupancy	
	(Parties)			(Parties)	
Charlie Lake	58 Parties	1979	June	1149	66
Provincial Park			July	1759	99
			August	1560	88
		1980	June	1207	69
			July	1669	94
			August	1359	76
		1981	June	1096	63
			July	1604	89
			August	1332	74
		1982	June	981	56
			July	1309	72
			August	721	40
Moberly Lake	59 Parties	1979	June	904	51
Provincial Park			July	1745	95
			August	1504	82
		1980	June	874	49
			July	1526	83
			August	1332	73
	109 Parties	1981	June	889	27
			July	2075	61
			August	1714	51
		1982	June	906	28
			July	1965	58
			August	680	20

Gwillim Lake maintains the attraction of an undisturbed setting with very good opportunities for recreational activity. The Park will certainly become the main source of lake-oriented recreation for the South Peace district. The 1981 census data for the immediate market area was recorded as 48,484 (vicinity of Dawson Creek, Chetwynd, Hudson's Hope and Fort St. John). The Regional District of Peace Liard projects the population to increase to approximately 55,000 for the same area by the end of 1986.⁵

Follow completion of the Chetwynd-Tumbler Ridge Highway and the new town itself, residents of the two communities will be able to drive to the Park within one half hour. Considering the quality of highway under construction, no access constraints will limit Park visitation. It can therefore be assumed that the potential for full facility utilization is high.

In combination with Gwillim Lake Park, the establishment and future development of Monkman Provincial Park at Kinuseo Falls will further enhance the recreational opportunities available to South Peace region residents and tourists. Monkman is a provincially significant Park which will become widely recognized for its uniquely scenic and varied landscape.

The result of new developments (N.E. Coal, Monkman Park) increased regional populations (Chetwynd, Tumbler Ridge) and improved access will be an expanded market which can be expected to make abundant use of proposed facilities at Gwillim Lake Park.

⁵ Regional Population Forecasts - R.D.P.L. - 1978 Regional District correspondence

1.7 PLANNING ISSUES

In Table 4 are listed the identified constraints and issues that this plan must accommodate. These constraints relate to various aspects of natural and cultural concerns which may have an impact on future management decisions.

Figure 8 illustrates the evaluation of various sites for facility development.

Table 4

Planning Issu	es and Constraints			
Issue	Particulars	Impact	Comments	Options
Land	1) Trapline along north	-could conflict with proposed	-trapline may or may	1) relocates trapline
Tenure	shore of Gwillim Lake	developments and/or winter	not conflict with the	2) Cancel P.U.P.
	(P.U.P 1192)	recreational use of the Park.		3) avoid trapline in plans
	2) Outdoor Education	-limits alternate locations for	-the centre enhances	1) allow unrestricted
	Centre on Melkie Creek	park development.	Park objectives for	expansion
	(P.U.P. 18)	- promotes park to regional	conservation	2) cancel P.U.P.
		students and families	education	3) restrict P.U.P. area from
			-poses some conflict	expansion
			to park management	
	3) Highway right of way	-provides high-quality, all	-retention of the	1) Renew P.U.P. and
	through west end of	weather access to the Park	R.O.W. in the park	subzone ROW as travel
	park (P.U.P 1142)	-introduces a negative noise	may lead to future	corridor
		impact to the park	permit problems and	2) remove highway and
		-conflicting park use	unnecessary	right-of-way from the park
			administrative	
			responsibility	
	4) Resource Road of	-no physical impact on	-the existence of the	1) Continue issuing the
	Getty Oil (P.U.P. 1142)	developable Park area	Resource Road does	P.U.P. until company
		- non-essential for park	not seriously impair	relinquishes rights
		operation	park plans but should	2) Cancel P.U.P. and enforce
		-provides good views of the lake	be carefully	rehabilitation
		-conflicts with park objectives	monitored	
		for visual landscape retention		
	5) Licensed	-one guide's registered territory	-hunting within the	1) remove Park from
	Guide/Outfitter	extends into Gwillim Lake Park	parks conflicts with	registered territory
		-hunting is temporarily restricted	non-consumptive	2) maintain status-quo
	6) Legal Hunting	within Gwillim Lake Park and	recreation objectives	3) Design to meet flood
NT (1		the entire N.E. Coal Block.	1 1	hazard
Natural	1) Terrain must be well	- steep southern slopes limit	-best to limit site	1) Flat, gravel-based creek
Features	suited for campground	development sites to flat	selection to northern	deitas appear lavourable
	and day-use facilities	lebraside legations	slopes because of	
		lakeside locations	cover	
	2) Creeks within the	deltas are often inundated by	Gwillim Creek fan	1) Identify floodlines
	2) Creeks within the Parks are subject to	floodwaters	-Owninin Creek Tail	2) Select most stable site
	seasonal high water	-flooding could destroy	as the most stable	3) Design to meet flood
	-creeks maintain	PORD facilities	delta	bazard
	irregular channels at	T.O.K.D. facilities	ucita	nazaru
	their mouths			
	3) Gwillim Lake is	-recreational fishing pressures	- co-ordinated efforts	1) Identify appropriate
	classified as	could severely reduce the	between P O R D	mitigation methods
	oligotrophic, therefore	resource	and the Fish and	2) Maintain quality of
	not capable of providing	-shoreline development could	Wildlife Branch may	spawning areas
	sufficient nutrient levels	damage spawning areas	help to the offset	1 0
	for fish		perceived problems	
	4) 20% of the Gwillim	-developments on the east end of	- negotiation of water	1) Avoid formal campsite
	Lake watershed is	the lake will impact negatively	crafts is difficult in	development at East Gwillim
	important winter	on moose populations and	the shallows of east	Lake
	ungulate range. The	curtail waterfowl activities.	Gwillim Lake	2) Enforce snowmobiling
	shallow east end of the			restrictions and prevent
	lake is prime number			harassment of wintering
	and winter moose			ungulates
	habitat as well as			
	summer waterfowl			
	habitat.			
	5) Prevailing, gusty,	-cool breezes can be expected on	- it does not seem	1) provide beach and picnic
	eastward winds are	the land at most times	feasible to restrict use	facilities on the leeward side
	usually present in the	-dangerous boating conditions	of the lake	of creek deltas
	Park	arise quickly on the lake	- blow down is of	2) avoid areas of infirm trees
		-severe windfall hazards exist	major concern for	susceptible to wind throw
		along exposed shorelines on the	public safety	3) restrict small craft use on
		north side of the lake.		Gwillim Lake
				4) provide warning to small
1	1	1	1	craft about water conditions





PART 2

2.1 PARK PURPOSE

Gwillim Lake Park will be managed to preserve its natural scenic landscape and will be developed to provide camping, day use and other outdoor recreation opportunities for residents and tourists of the Peace River area.

2.2 PARK OBJECTIVES

2.2.1 Conservation

"To preserve a scenic, natural landscape partially representative of the Rocky Mountain Foothills, for its aesthetic attraction and for providing conservation information and education."

Park facility development will be concentrated in lakeshore areas at the western end of Gwillim Lake. Except for trail development, a majority of the Park will remain in a natural state. The outdoor education centre at Meikle Creek provides conservation education to regional students and should remain for this purpose.

Interpretive features within the Park include glacial and geological history, stream ecology, micro-climatic conditions and forest succession.

2.2.2 Outdoor Recreation

"To provide camping, boating, day use and other outdoor recreation opportunities for the expanded population of the Peace River District.

The lake's large size, excellent quality and attractive setting make it very appealing for boating and fishing. The south-facing, level creek fans are ideal for family camping and sunbathing.

Beaches of fine gravel provide opportunities for wading and swimming. A concrete ramp would improve water access for boaters. Aspen forests and small meadows along the north shore are ideal for hiking trails aid viewpoints. The use of trapping trails can disperse recreational hikers along the length of the lake while a new trail could lead to the alpine zones of Elephant Ridge and Mt. Roberts which extend northward from the Park boundary. A trail at the east end of the park, from the lake outlet to the Murray River, would provide an opportunity to fish the lower Gwil1im River.

Since much recreational activity at the Park will centre around the lake itself, the provision of water-accessed informal campsites during "future phases" of park development could enhance the boating experience.

2.2.3 Tourism

"To enhance the tourism infrastructure of the Peace River area, particularly the perceived tourist circuit of Chetwynd - Tumbler Ridge -Dawson Creek, through the provision of quality park facilities."

The development of Tumbler Ridge and related resource activities, including greatly improved access from Highways 2 and 97, will open up a new area of the province to tourists. The provision of high quality facilities in a natural setting will make Gwillim Park an important tourist attractor. Outdoor facilities provided at the Park will compliment private developments in municipal areas. The Park will help, to diversify the regional economy by encouraging tourists to stay in the vicinity longer and providing information about other regional parks and attractions.

2.2 ZONING

Figure 9 illustrates the zoning scheme for Gwillim Lake Park.

A vehicle campsite, day use area and boat launch are proposed in the Development Zone located at the west end of the lake basin. In the vicinity of Gwillim Creek, high quality facility development will establish the park as a major supplier of outdoor recreation and tourist opportunities. The extension of this zone around the western basin indicates the direction for feasible expansion as well as recognizing the existence of current, non-conflicting resource and educational developments.

Within the remainder of the Park, the Natural Environment Zone, only intermediate levels of recreational opportunity will be provided. Management will be oriented toward the maintenance of a natural environment. Seismic lines will be left to revegetate naturally and only limited trail construction and development will be allowed. The containment of sensitive winter habitat and marshlands into this zone furthers the conservation objective established for the Park.





2.4 MANAGEMENT POLICIES

2.4.1 Resource Management

a) Land Management

Objective: "To manage the land for optimum recreation and conservation benefits."

- Recreation facilities will be located at the western end of -Gwil1im Lake; with no expansion to other areas within the Park.

- Conservation of the viewshed will be maintained by Park zoning. Impacts in the development zone will be kept to a minimum.

- Soils in the area are weak and prone to slumping. Appropriate measures will be implemented to avoid severe side-cutting of roads and trails.

- Upon completion of the highway, Ministry of Transportation and Highways legal surveys will be used to delete the right-of-way from park boundaries. Portions of the former Forest Road, then abandoned, will be rehabilitated by the Highway Construction Branch.

- P.O.R.D. will approach the Heritage Conservation Branch prior to site development so that they may assess the significance of identified, cultural resources and provide interpretive direction which may be used to further the objectives of the Park.

- Seismic roads existing within Park boundaries will be blocked to vehicular traffic.

- Dilapidated buildings within the Park boundaries deemed to be a public hazard will be removed.

b) Water Management

Objective: To manage water resources within the Park so as to maintain their highest quality.

- The water quality of Gwillim Lake must be protected from adverse upstream effects, as the sources of the feeding streams lie outside Park boundaries. Quality will be monitored on a regular basis and compared to baseline data collected prior to formal park development.

- Liaison will be maintained with other agencies to ensure that quality standards are met for recreation and wildlife.

- P.O.R.D. will ensure that sewage disposal systems within the Park do not contaminate water courses.

- All Park facilities, with the exception of a boat ramp, will be constructed above the recognized high water mark.

- The District Manager will ensure that all standards for water quality are being maintained by Park permittees.

c) Vegetation Management

Objective: To sustain a natural vegetative cover for recreation and conservation benefits.

- Throughout the Park, wild forest fires will be suppressed as soon as possible following detection.

- The severity of forest insect attack will be monitored and, if necessary, an effective control programme initiated after careful examination of feasible alternatives.

- Adequate vegetation buffers will be maintained to minimize windthrow hazard within the development zone.

- Hazard trees will be removed in accordance with park policy.

d) Wildlife Management

Objective: To manage Park wildlife for maximum recreation and conservation benefits while minimizing user conflicts.

- The fisheries resource of Gwillim Lake will be enhanced through a co-ordinated effort between the Fish and Wildlife Branch and the P.O.R.D.

- Within park boundaries, inflowing streams will be managed and protected exclusively for fish reproduction.

- Fishing regulation enforcement will be monitored and maintained in conjunction with the Fish and Wildlife Branch.

- Habitat sensitivity for wildlife at the east end of the Lake' will be further assessed. Access to this area may be restricted if necessary to protect the resource.

- Facilities in the development zone will emphasize bear-proof design and standard. Problem bears will be eliminated.

- The trapline which exists under Permit will be reviewed prior to renewal in order to determine its affects on recreational use of the Park.

- Access to the remote to the remote portions of the park will be blocked (Seismic lines).

- The Division will monitor hunting in the Park and if determined to conflict with non-consumptive recreational use will negotiate a closure with the Fish and Wildlife Branch. - The park will be removed from the guide-outfitter's territory in accordance with Division policy.

e) Visual Management

Objective: To manage and maintain the visual landscape of the Gwillim Lake basin in a natural state.

- No developments in the Natural Environment Zone will be allowed to impair the quality of the existing landscape.

- A comprehensive fire management plan for the Park will be formulated in cooperation with the M.O.F. and recognizing the visual quality objective. Fire suppression will stress hand and water methods which minimize mechanical disruption of the landscape.

- Areas will be provided at appropriate locations for tourists and recreationists to view panoramas available from the Park.

2.4.2 Visitor Management

1) Recreation Facilities

Objective: To provide Park visitors with high quality facilities allowing camping, day-use and lakeshore activity.

- An access road will be constructed to link to the proposed development area with the Chetwynd-Tumbler Ridge Highway. This road will follow a scenic approach to the main park facilities.

- An auto-oriented campground will be developed to accommodate overnight users and will contain essential support and sanitation facilities.

- Gwillim Creek will be studied as a source for water supply to the campground

- A boat ramp will be constructed

- A location will be designated for organized group camping and away from the main campground. Existing park developments at the west end of Gwillim Lake are appropriate for this use.

- A beach will be developed with backshore areas for picnicking and sunbathing.

- Shoreline trails will be developed.

- A major viewing area with appropriate services will be constructed along the access road and will provide unrestricted viewing of the Gwillim Lake Basin.

2) Information and Interpretation

Objective: To interpret the Parks natural features to visitors and provide information about other parks and attractions within the Peace River District.

- An interim interpretive plan for Gwillim Park will be prepared which relates to the natural features and processes within the south Foothills area.

- Information relating to other Parks and regional attractions will be provided.

3) Special Uses

- Appropriate warning information will be provided to boaters regarding water conditions.

Objective: To permit special uses which do not diminish the recreational experience of park visitors or conflict with park objectives.

- The Peace River South School District will maintain an outdoor education centre on the Meikle Creek delta under Park Use Permit. Expansion of the permit area will not be allowed. In the event of severe flooding, consideration will be given before reestablishment of the centre is permitted near its present site.

Figure 10



Gwillim Lake Park is expected to became a primary destination park for the residents of the Peace River District. Facilities will be developed to provide:

- 15000 camping opportunities per season

- 7000 boating party opportunities per season

- dispersed lake shore hiking and viewing

Immediate use of Park facilities will not reflect the level of proposed development. Until the community of Tumbler Ridge is fully populated and all highway construction is completed, the Park is not expected to receive full utilization.

Therefore, two distinct phases of develqmant are proposed. Site design work has been ccmpleted by Victoria staff.

Phase 1

l) Access

An access road will be constructed joining the Park development area to the highway.

- Two lane, gravel surface of moderate grade

- Bridge across Gwillim River

- Appropriate park directional signs to be installed by 'the Ministry of Transportation and Highways.

2) Viewpoint

A major tourist viewpoint will be constructed adjacent to the Park access road where a natural meadow slope allows unrestricted viewing of the lake basin and south to Bul1moose Mountain. - Parking facilities will accommodate thirty (30) regular and oversize vehicles.

- Pit toilets, picnic tables and an interpretive display will be incorporated into the design.

3) Campground

Phase 1 campground design will recognize eventual site expansion and include:

- 30 campsites each with Type 1 furniture
-2 centralized garbage and firewood corrals
-4 sealed vault pit toilets
- 2 water wells and handpumps

4) Boat Launch

Because of prevailing westerly winds, the boat launch ramp will be constructed on the lee side of Gwillim fan. This will provide relatively calm conditions for moorage.

-Built-up boat ramp of gravel and concrete

-Parking for 20 vehicles and trailers also to be used for day use parking during Phase 1.

5) Service Yard

The supply of maintenance facilities will be required in the first phase of development.

- A fenced, locked service yam with appropriately sized building for storage of service supplies and equipment.

PHASE 2

l) Access

- Paving of the road will be undertaken

2) Campground

A second loop of 24 campsites will be developed similar to and adjoining those of Phase 1.

- An additional centralized firewood/garbage corral

- 2 additional sealed vault toilets

- Trail access to the shoreline and day use area.

3) Day Use

The expanded populations of Tumbler Ridge and Chetwynd will increase demand for day use facilities at Gwillim Lake within five years.

- Parking for approximately 50 vehicles will be provided immediately west of the campground

- 2 sealed vault pit toilets will be located above the highwater mark of Gwillim Creek

- Approximately 50 type II tables scattered randomly in cleared, grassed lakeshore areas will be provided.

- Natural windbreaks from westerly winds will be retained.

- A lakeshore trail will be constructed to join the boat launch, day use and group camping areas.

4) Service Residence

If required for the future, a site adjacent to the services yard will be identified for staff accommodation.

5) Hiking Trails and Boat Accessed Campsites

Once use patterns establish Gwillim Park as a popular destination point, certain trail routes may be developed.

-Trail routes will be identified and developed to Elephant Ridge and Mt. Roberts north of the Park.

- A lakeshore trail will be developed along the north shore, and to the lower reaches of Gwillim River.

Several locations along the north shore of Gwillim Lake are particularly well suited for boat-access camping.

- District staff will monitor lake use on a causal basis to determine the most popular boatcamping destinations. If future demand and use indicate a need for basic, informal facilities, such may be developed at the discretion of the District Manager.

6) Winter Use

No provision for winter facilities is included in this Plan. The main park gate will be locked following the first accumulative snowfall of the season. It is expected however, that local residents may use the Park during winter months, gaining access to the lake via the extreme west end of the lake. Snowmobiling will form a major portion of this use. Although restricted by Park Act Regulation, if approached by an organized snowmobile club, the Division will assess the merits of permitting such use in Gwillim Lake Park. Fish and wildlife recommendations will receive full consideration in this matter as sensitive moose habitat could be seriously affected.

Future demands for winter recreation facilities will be monitored and addressed within subsequent master Plans. Trails along the north shore and along Elephant Ridge may provide good opportunities for ski touring; however, the majority of regional residents are not likely attracted to this form of winter recreation.

2.6 MARKETING INFORMATION

Gwillim Lake Park will provide day use and overnight camping opportunities for the expanding market area associated with Northeast Coal developments. Appropriate measures will be taken to ensure that potential visitors are made aware of the outdoor recreation opportunities available within the park.

- The Park and facilities will be included on the Provincial Parks of British Columbia map produced in Victoria for free public distribution.

- The Park will be illustrated on the B.C. roads map.

- Other parks of the Peace River District will include Gwillim Lake Park on their standard information panels.

- Adequate signing along Highway 97 and the Chetwynd-Tumbler Ridge Highway can be expected to encourage Park visitation.

-Park information located at the Gwillim Lake viewpoints can be expected to entice potential visitors.

- An Omineca-Peace Regional Parks park brochure will be produced for distribution which will include Gwillim Lake Park.

-Appropriate municipal offices will be made aware of Park information in order to inform newcomers of Gwillim Lake facilities.

- 43 -
- 1) Ministry of Lands, Parks and Housing, P.O.R.D., Victoria Natural Regions and Regional Landscapes for the B.C. Park System, 1982
- Ministry of Environment, Resource Analysis Branch Outdoor Recreation Resources of the N.E. Coal Study Area, 1977 Outdoor Recreation Features Inventory, 1976 Visual Resources Report, 1976-1977 Preliminary Environmental Report on N.E. Coal, 1977
- Ministry of Environment, Fish and Wildlife Branch Reports 00 Gwillim Lake fisheries and wildlife - internal document, 1980
- 4) Regional District of Peace Liard Official Plan and Population Forecasts - 1978 Correspondence, 1982
- 5) P.O.R.D. Omineca-Peace Region Files and Preliminary Reports - Gwil1im Lake Provincial Park

Appendix 1 Legal Status

Class A Provincial Park - established 1981 9187 hectares

Encumbrances:

PUP 1197	-School District 59 (Dawson Creek) Meik1e Creek Delta Outdoor Education Centre
PUP 1192	-Andrew Young - trapper
PUP 1162	-Getty Oil Canada Access Road in western end of Park
PUP 1163	-Ministry of Transportation and Highways Chetwynd-Tumbler Ridge Highway
Unpermitted	-Waiter Schilling trapping territory southwest of lake
Unpermitted	-Robert Rosenau Trapping territory southwest of lake
Unpermitted	-W.E. Warren Licensed guide territory covers the Park area

- no mineral claims within the Park

- no Division intention for park expansion at present

I. Environmental Characteristics

- 1. Location, Dimensions and Climate
 - a north-westerly trending belt in the north-eastern portion of B.C.
 - situated between the Hart and Muskwa Ranges the Rocky Mountains and the Alberta Plateau
 - the Foothills are parallel to the Rocky Mountains and, outside of B.C., extend much further south than their southerly limit (approx. 54°N. lat.) in this province.
 - the Northern Foothills Region is roughly 720 km long and varies between 20 and 75 km wide.
 - Climate Dfc and ET (after Koppen)
 - 1. UFC: -most significant
 - -micro thermal sub alpine with moderate snow cover over (mostly) frozen ground; severe winter; annual total ppt. 41-183cm.
 - 2. E.T.: annual total precip. Variable, 70-280 cm; short vegetative Season; moderate snow cover over frozen ground; severe Winter.

2. Physiographic Characteristics

- a series of distinct, north-south ridges and peaks.
- peaks and ridges are serrate and unforested (alpine).
- transition belt between the Rocky Mountains and the Alberta Plateau.
- entirely underlain by sedimentary rocks of Mesozoic Age (63-230 million years)

- rocks are folded about northerly and north-westerly trending axes and are cut by south-westerly dipping thrust faults.

- there is a notable lack of uniformity east-west across the foothill belt
- bedrock differences
- degree of folding and faulting diminishes eastward.
- highest peaks and ridges occur where resistant quartzite or silty limestone are prominent.
- lower peaks and valleys are eroded in the softer interbedded shales.
- ridges and peaks average 2,000 to 2,300 metres a.s.l.
- moderate relief overall; some spectacular relief similar to Rocky Mountains
- <u>the foothills adjacent to the Hart Ranges (south of the Peace River)</u> <u>display lower average summits (than northern portion), are less distinctly</u> <u>organized into parallel ridges and the peaks are more often rounded than</u> <u>serrate.</u>
- the Foothills display landforms only slightly modified by glaciation.

3. <u>Hydrologic Characteristics</u>

- structurally-controlled trellis drainage pattern.

- very few lakes but those that do occur average 10-20 sq. km and tend to
- be elongated east-west
- largest lake is Gwillim Lake
- many of the lakes and streams are at least partially charged by glacial meltwater.
- some permanent glacial ice.
- year-round snow patches on the higher summits (above 200 metres)
- major rivers tend to flow eastward cross the Foothills belt, while tributaries tend to occupy the structurally controlled north-south valleys.

4. Biotic Characteristics

- structurally-controlled trellis drainage pattern.
- very few lakes but those that do occur average 10-20 sq. km and tend to be elongated east-west
- largest lake is Gwillim Lake
- many of the lakes and streams are at least partially charged by glacial meltwater.
- some permanent glacial ice.
- year-round snow patches on the higher summits (above 200 metres)
- major rivers tend to flow eastward cross the Foothills belt, while
- Tributaries tend to occupy the structurally controlled north-south valleys.

II. Regional Landscapes

In British Columbia the Rocky Mountain Foothills only occur north of 54°N Latitude. South of this latitude, the foothills are entirely within Alberta. Therefore, there is considered to be only one foothills landscape in B.C.

Northern Foothills

- consist of numerous parallel ridges aligned northewesterly.
- most ridges are discontinuous, being perhaps only 10-50 km long.
- the foothills consist largely of sedimentary rocks of Cretacepis age
- (younger than the Rockies)

- varying degrees of ruggedness: southward, the ridges and summits are frequently rounded and wooded: north of the Peace River, the ridges display serrate profiles and the extensive exposures of stratified bedrock typical of the rocky mountains.

- broad valleys.
- trellis drainage pattern.
- biogeoclimatic zonation:

Alpine Tundra (small percentage)

- Spruce-Willow-Birch (most dominant)
- Boreal W. + B. Spruce (valley bottoms)
- Current Representation (1982):
 - Gwillim Lake R.A., partial
- Priority for additional representation: moderate.

APPENDIX 3 BIOGEOCLIMATIC ZONES OF B.C. SOURCE: Ecological Reserves of British Columbia

APPENDIX 3

BIOGEOCLIMATIC ZONES OF B.C.

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SOURCE: Ecological Reserves of British Columbia

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APPENDIX 4

Existing Park facilities located at the west end of Gwillim Lake:

- 1 Graded boat launch
- 5 Dug pit toilets
- 4 Undeveloped campsites with Type 11 picnic table
- 6 Type 11 picnic tables
- 3 Garbage barrels

5.1	108		ZONING
FACTI LETESANTIMITES	-Intensive recreational facilities such as auto compenends, cabiny, longer, picate areas, brach and swimping areas, nature bouces, thromstriam buildings, down- malles facilities, walk-in camperands. -ancillary facilities such as pareing, sanitation, picate tablet, songurands, any be included in this, zone.	-Development and use are consistent with the maintenance of natural conditions. would be: hiking, careing, canneing, would be: hiking, careing, canneing, tayaking, mousboeing, cross county tayaking, mouse observation, horse back riding, picnicking, svieming, fishing, riding, picnicking, svieming, fishing, and facilities such as trails, shel- rest, hikes' campileen there activities, be toward public safety rather than the developed to complierent there activities, be toward public safety rather than the encouragement of more intensive levels of use.	-only minimal primitive facilities would developed consistent with low inten- sity uses. Activities consistent with this zone include: compily, hithog/ rountimeering, canoeing, tayaking, cross- country stiling and snewshoring, fishing, nature observation. In spee areas, nature observation. In spee areas, nature observation. In spee areas, and the present or to permit reasonable public, etc. as important motorboats, snowmobiles, etc. as important reasonable public access into extremely remote areas. Sub-round and use premit, conter areas. Sub-round and use premit, conter areas.
MANAGENERIT CANNELINES	-oriented toward maintaining high quality recreation and interpretive experience. -Intensive management may be required to essure that high quality recreation and interpretive opportunities are maintained. -special design consideration generally required. -Intensity of developments and standard of facilities are variable and will relate to the objectives for the fart.	"Management will be oriented toward main- tenance or restoration of the natural environment. -visitor access may be restricted to preserve the recreational experience or to limit impact on the area. -designation of transportation modes may be necessary to avoid potential conflicts. (e.g. horse trails, cycle paths, hiking trails) ergisted vehicles may be premitted. -intensity of management and development will be consistent with moderate levels of recreational use. -visitor support facilities will be limited. -visitor support facilities will be limited. and directed toward providing for public safety and minimizing user impact.	-oriented toward the protection and pre- servation of the area's atmosphere, en- vironment or ecology, while optimizing recreational opportunities associated with the "wildeness experience". -unstructured Visitor mobility. -visitor support facilities will not be provided, except where absolutely necessary to provide for public safety necessary to provide for public safety or minimizing user impact. -transportation limited to foot access.
ONJECTIVES	To provide for a variety of facility-oriented recreational opportunities.	To provide for intermediate levels of outdoor recreational opportunities/use in a natural setting.	-To protect and preserve land. scapes and resource processes. -To provide for low levels of recreational use in an en- vironment where matural processes occur with a minimum of human interference.
ZONE	De vel opmen L	Environment	wilderness

The South Peace School District (#59) maintains the following facilities at Gwillim Lake under P.U.P. 1197 (formerly R.U.P. 18)

Outdoor Education Center

- $5 16' \ge 20'$ cabins $1 - 16' \ge 26'$ workshed – powerhouse $1 - 34' \ge 48'$ classroom $1 - 14' \ge 18'$ sauna
- 2 pit toilet bldgs.
- 1 group fire pit

2 miles of gravel road with Meikle Creek crossing

Present Facility Use

approximately 1300 students per annum
Grades 4-12; majority are grades 6-7
Boy Scouts use the facilities occasionally

Sources P. O'Reilly S.D. 59 Dawson Creek, B.C.