

Skeena Region

**MANAGEMENT DIRECTION
STATEMENT**

September 2004



**for Drizzle Lake
Ecological Reserve**



**BRITISH
COLUMBIA**

**Ministry of Water, Land
and Air Protection
Environmental
Stewardship Division**

Drizzle Lake Approvals Page


Forward

On August 10, 1973, Order In Council #2762/73 established Drizzle Lake Ecological Reserve (#52). Legislated status was provided on June 29, 2000, when the ecological reserve was listed in Schedule B of the *Protected Areas of British Columbia Act*.

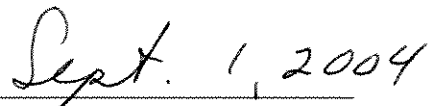
This management direction statement for Drizzle Lake Ecological Reserve (#52) provides management direction until the Environmental Stewardship Division revises the plan or prepares a more detailed management plan. Ongoing consultation between the Environmental Stewardship Division and First Nations may require changes to this management direction statement.

Implementation of strategies identified in the management direction statement (MDS) will be dependent on available funding and Environmental Stewardship Division priorities.

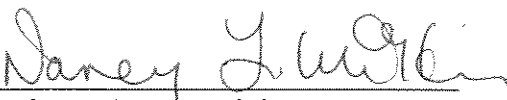
Approvals:




Regional Manager
Skeena Region
Environmental Stewardship Division



Date



Assistant Deputy Minister
Environmental Stewardship Division



Date

Table of Contents

Page

Forward and Approvals Page	i
Introduction	
Purpose of the Management Direction Statement	1
Context.....	1
Ecological Reserve Attributes	
Conservation.....	4
Research and Education.....	6
Recreation and Commercial Opportunities	6
Other Values of Importance	6
Significance in the Protected Areas System.....	6
Land Uses, Tenures and Interests	
Access.....	6
Existing Tenures, Alienations and Encumbrances	6
Adjacent Patterns of Land Use.....	7
First Nations Interests	7
Other Agency Interests.....	7
Private and Public Stakeholder Interests	7
Ecological Reserve Role Statement	
Conservation Role.....	7
Research and Education Role	8
Management Commitments and Issues	
Management Direction from Previous Planning.....	8
Management Issues.....	8
Management Direction	
Priority Management Objectives and Strategies.....	9
Consultation and Future Planning	10
Figures	
Ecological Reserve Location Map	2
Ecological Reserve Map.....	3
Acceptable Activities / Uses Matrix	11

Drizzle Lake Ecological Reserve

Management Direction Statement

Introduction

Purpose of the Management Direction Statement

Management direction statements (MDS) provide strategic management direction for protected areas that do not have an approved management plan. Management direction statements also describe protected area values, management issues and concerns; a management strategy focused on immediate priority objectives and strategies; and direction statements from other planning processes. While the MDS identifies strategies, the completion of strategies is dependent on funding and funding procedures. All development associated with these strategies is subject to the Park and Protected Areas Branch's Impact Assessment Policy.

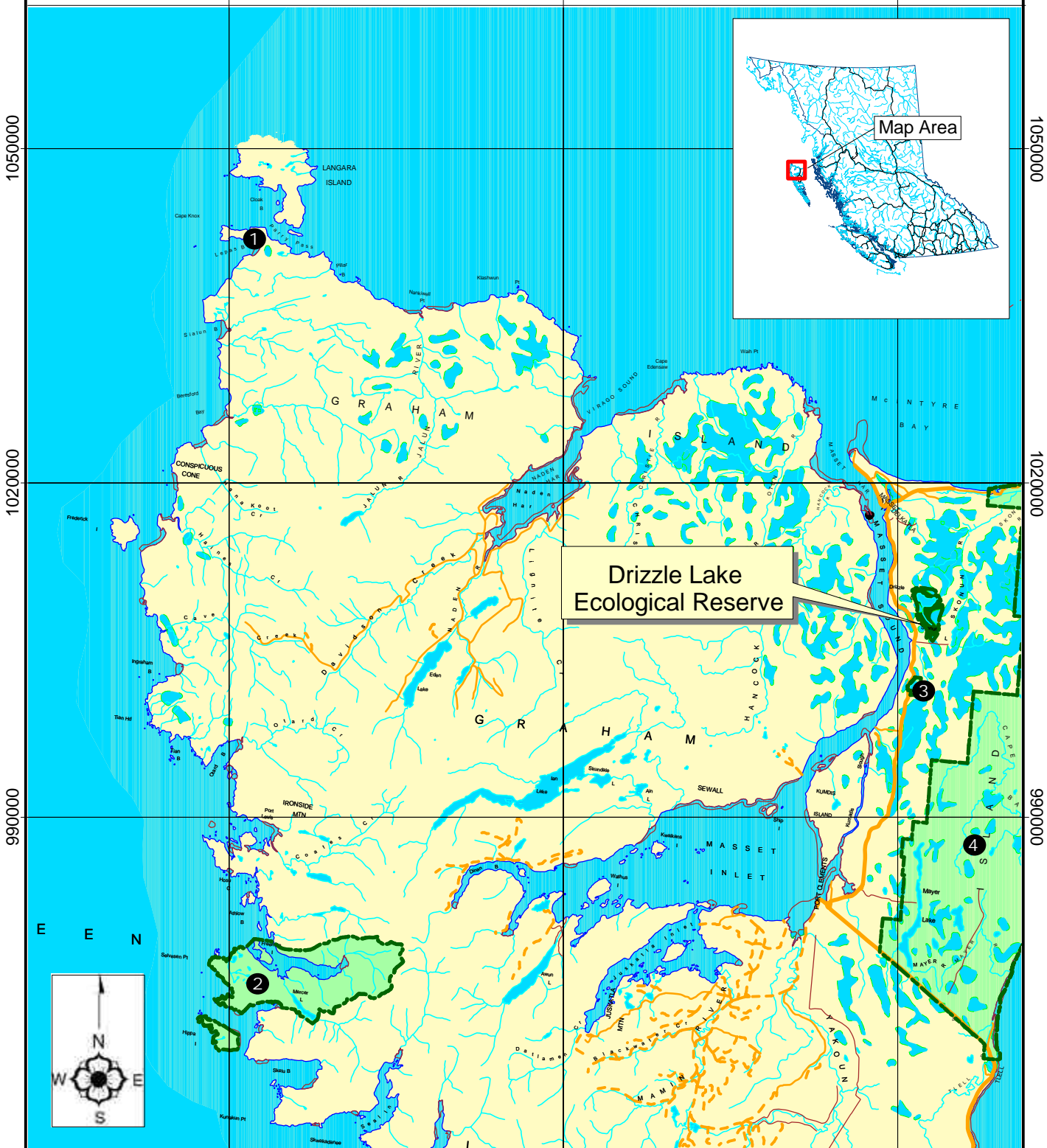
Context

Drizzle Lake Ecological Reserve is located 10 km south - southeast of the community of Masset, which is located on Graham Island, the large northern island in the Queen Charlotte Islands. The 837 hectare ecological reserve was established on August 10, 1973 to maintain undisturbed lake and bog ecosystems on the Argonaut Plain for research on unique stickleback populations and their predators. Drizzle Lake is 148 hectares in size and 16 metres deep and supports populations of a unique large stickleback fish, the provincially red-listed and globally ranked, critically imperiled giant black stickleback, which is only found on the Queen Charlotte Islands. The ecological reserve is also known habitat for one provincially red-listed and one blue-listed wildlife species and may contain habitat for up to six (6) additional provincially-listed wildlife species and eight (8) listed plant communities. In addition, the ecological reserve is home to red-throated loons and a diverse year-round assemblage of aquatic birds.

Drizzle Lake Ecological Reserve is within the Queen Charlotte Lowland Ecosection, an area of low relief, poor drainage and extensive muskegs and wetlands that cover the northeastern part of the Queen Charlotte Islands. Drizzle Lake Ecological Reserve together with Naikoon Provincial Park, Pure Lake Provincial Park, Tow Hill Ecological Reserve and Rose Spit Ecological Reserve protect 21.34% of the Queen Charlotte Lowland Ecosection. However, only Drizzle Lake Ecological Reserve contains the critically imperiled giant black stickleback. The Haida have identified the Queen Charlotte Islands, which Drizzle Lake Ecological Reserve lies within, as asserted traditional territory.

Figure 1: Regional Context

Drizzle Lake Ecological Reserve



540000 570000 600000

Scale 1:500000 3 0 3 6 9 12 Kilometers

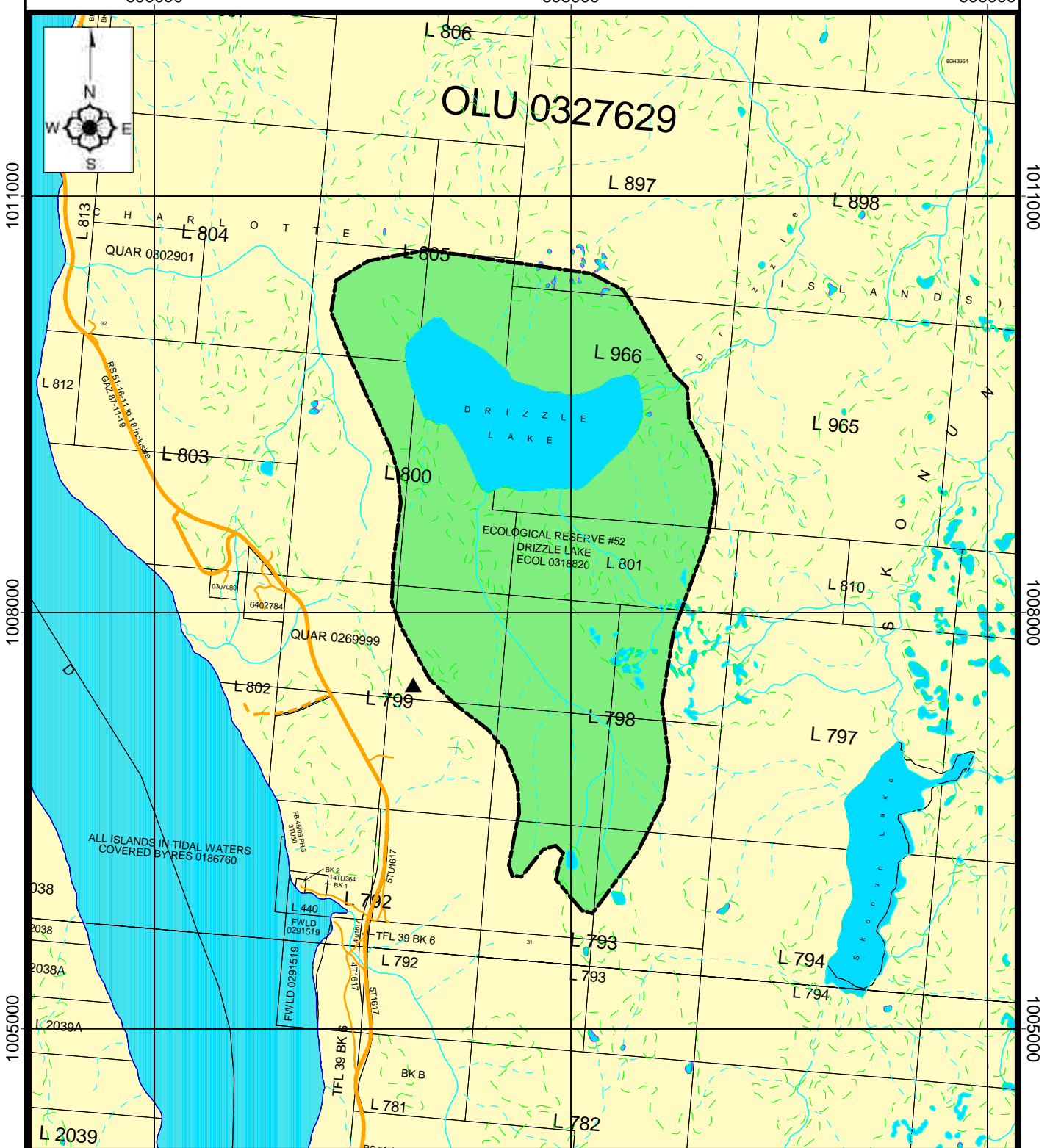


- MDS Study Area
- Lakes, Ocean
- Rivers
- 1** Lepas Bay Ecological Reserve
- 2** Vladimir J. Krajina Ecological Reserve
- 3** Pure Lake Park
- 4** Naikoon Park



Figure 2: Tenures and Land Use

Drizzle Lake Ecological Reserve



600000 Scale 1:40000 603000 200 0 200 Meters 606000

	Water		Drizzle Lake (ER) Boundary		Protected Areas
	Roads		Cadastral Data/Tenures		
	Rail		EMPR Mines and Showings		

Ecological Reserve Attributes

Conservation

- Drizzle Lake Ecological Reserve is situated in the Queen Charlotte Lowland Ecosection. This ecosection is well represented in the protected areas system (21.34%). Drizzle Lake's contribution to the representation of this ecosection is minimal (1.17% of the overall protected area representation of the ecosection). Naikoon Park is the principal contributor to the representation of this ecosection (97.41%).
- Drizzle Lake Ecological Reserve is situated in the Coastal Western Hemlock, Submontane Wet Hypermaritime (CWHwh1). This variant is well represented (18.66%) and Drizzle Lake's contribution is minimal (only 0.69% of the overall representation). Naikoon Park is the principal contributor (65.51%).
- Drizzle Lake Ecological Reserve contains an internationally significant population of giant black stickleback, which is globally ranked G1 (critically imperiled) and provincially red-listed (endangered or threatened). The species is only found in the Queen Charlotte Islands.
- Drizzle Lake Ecological Reserve is known habitat for the red-listed ermine (*haidarum* subspecies) and blue-listed northern saw-whet owl (*brooksi* subspecies).

Fauna

- Two provincially red-listed and one blue-listed species are found in Drizzle Lake Ecological Reserve (CDC, 2003)

Scientific Name	Common Name	Global Rank	BC Status
<i>Gasterosteus</i> sp. 1	Giant Black Stickleback	G1	RED
<i>Mustela erminea haidarum</i>	Ermine, <i>haidarum</i> subspecies	G5T2	RED
<i>Aegolius acadicus brooksi</i>	Northern Saw-whet Owl, <i>brooksi</i> subspecies	G5T3	BLUE

- Although there are no registered occurrences, six (6) additional wildlife species that are on the provincial red and blue lists are associated with habitats found in Drizzle Lake Ecological Reserve. Wildlife inventories are required to confirm the presence of the following listed species

Scientific Name	Common Name	Global Rank	BC Status
<i>Myotis keenii</i>	Keen's Long-eared Myotis	G2G3	RED
<i>Ardea herodias fannini</i>	Great Blue Heron, <i>fannini</i> subspecies	G5T4	BLUE
<i>Cyanocitta stelleri carlottae</i>	Steller's Jay, <i>carlottae</i> subspecies	G5T3	BLUE
<i>Falco peregrinus pealei</i>	Peregrine Falcon, <i>pealei</i> subspecies	G4T3	BLUE
<i>Grus canadensis</i>	Sandhill Crane	G5	BLUE
<i>Picoides villosus picoideus</i>	Hairy Woodpecker, <i>picoideus</i> subspecies	G5T3	BLUE

- Drizzle Lake Ecological Reserve contains a provincially significant endemic subspecies of the threespine stickleback.

- Threespine stickleback are a rare, freshwater fish, that have inhabited the Queen Charlotte Islands for the last 12,000 years.
- Research indicates the species morphology changes with geographic location (unique subspecies are found in several freshwater lakes on the Queen Charlotte Islands).
- There is a predator-prey relationship between diving waterfowl and stickleback.
 - Diving waterfowl feed on the stickleback. It has been found that morphological differences in the fish improve their swimming speed and increase their chances of escaping the waterfowl.
- Red-throated loons have been known to nest in Drizzle Lake Ecological Reserve.
- The ecological reserve provides year-round habitat for a diverse mix of aquatic birds.

Flora

- Drizzle Lake Ecological Reserve contains provincially significant undisturbed lake and bog plant communities.
 - Plant communities form a complex mosaic within the ecological reserve.
- The ecological reserve contains regionally significant forest ecosystems
- There are no registered occurrences of provincially red- or blue-listed plant species or plant communities in the Drizzle Lake Ecological Reserve, however inventory data are lacking.
 - Eight (8) rare plant communities are associated with the CWHwh1 biogeoclimatic zone. It is likely that one or more of these provincially significant plant communities occur in Drizzle Lake Ecological Reserve, however, further inventory data are necessary to confirm their presence.

Scientific Name	Common Name	BEC	Provincial List	Provincial Rank
<i>Picea sitchensis</i> / <i>Maianthemum dilatatum</i> Wet Hypermaritime 1	Sitka spruce / false lily-of-the- valley Wet Hypermaritime 1	CWHwh1/07	Red	S2
<i>Picea sitchensis</i> / <i>Trisetum</i> <i>canescens</i>	Sitka spruce / Trisetum	CWHwh1/08	Red	S2
<i>Picea sitchensis</i> / <i>Calamagrostis nutkaensis</i>	Sitka spruce / reedgrass	CWHwh1/15	Blue	S3
<i>Picea sitchensis</i> / <i>Carex</i> <i>obnupta</i>	Sitka spruce / slough sedge	CWHwh1/17	Blue	S3
<i>Picea sitchensis</i> / <i>Kindbergia</i> <i>oregana</i>	Sitka spruce / Kindbergia	CWHwh1/14	Blue	S3
<i>Picea sitchensis</i> / <i>Malus fusca</i>	Sitka spruce / Pacific crabapple	CWHwh1/18	Blue	S3
<i>Thuja plicata</i> - <i>Picea sitchensis</i> / <i>Conocephalum conicum</i>	Western redcedar - Sitka spruce / Conocephalum	CWHwh1/06	Blue	S3
<i>Thuja plicata</i> - <i>Picea sitchensis</i> / <i>Polystichum munitum</i>	Western redcedar - Sitka spruce / sword fern	CWHwh1/03	Blue	S2S3
<i>Thuja plicata</i> / <i>Picea sitchensis</i> - <i>Lysichitum americanum</i>	Western redcedar/Sitka spruce - skunk cabbage	CWHwh1/12	Blue	S3
<i>Tsuga heterophylla</i> - <i>Picea</i> <i>sitchensis</i> / <i>Rhytidiadelphus</i> <i>loreus</i>	Western hemlock - Sitka spruce / lanky moss	CWHwh1/01	Blue	S3

Research and Education

- Drizzle Lake Ecological Reserve provides a unique opportunity to study internationally and provincially significant wildlife species and plant communities.
 - The internationally significant giant black and threespine sticklebacks.
 - Provincially red-listed ermine (*haidarum* subspecies) and blue-listed northern saw-whet owl (*brooksi* subspecies).
 - Six (6) additional red- and blue-listed species that may be found in the ecological reserve (Keen's long-eared myotis, sandhill crane, great blue heron (*fannini* subspecies), hairy woodpecker (*picoideus* subspecies), Stellers jay (*carlotta* subspecies), and peregrine falcon (*pealei* subspecies).
 - Eight (8) red- and blue-listed Sitka spruce plant communities that may be found in the ecological reserve.

Recreation and Commercial Opportunities

- Due to the sensitive nature of the ecological reserve, human use activities, except for research and limited education, should be discouraged. There are no opportunities for commercial use.

Other Values of Importance

- The Haida First Nation has identified the Queen Charlotte Islands, which includes Drizzle Lake, as part of their traditional territory.
 - Other cultural heritage attributes have not been identified to Environmental Stewardship Division.
- Pioneer research cabins are located within the ecological reserve.

Significance in the Protected Areas System

- Protects an internationally significant population of critically imperiled giant black stickleback.
- Protects provincially significant lake and bog ecosystems and regionally significant forest ecosystems.
- Provides a unique opportunity for scientific research on internationally and provincially significant wildlife and plant communities.
- Is representative of the Queen Charlotte Lowland Ecoregion.

Land Uses, Tenures and Interests

Access

- Access to the ecological reserve is via an unmaintained trail from Highway 16.
 - The ecological reserve boundary is 0.6 km, and Drizzle Lake is 1.5 km from the highway.

Existing Tenures, Alienations and Encumbrances

- There are four, derelict buildings approximately 250 metres from Drizzle Lake.
 - Buildings include: a main cabin (16' x 16'), laboratory (14' x 12'), greenhouse (8' x 8'), and a pit toilet.
 - Buildings are in poor (unusable) condition

Adjacent Patterns of Land Use

- There are two (2) trapping licences adjacent to the ecological reserve.
 - Licence numbers 0613T033 and 0613T032.
- The Ministry of Transportation Reserve file no. 0269999 is adjacent to the ecological reserve (sand and gravel quarrying).
- Timber forest licence 39BK6 is located directly south of the ecological reserve.

First Nations Interests

- The Haida have identified the Queen Charlotte Islands, which Drizzle Lake Ecological Reserve lies within, as asserted traditional territory. The Haida have advised that:
 - Haida culture represents evidence of Haida activity over millennium and into the present modern age.
- The Council of the Haida Nation has expressed an interest in co-management of all protected areas within their traditional territory and have advised that:
 - The Haida would like to see all research methods designed and approved by the Council of the Haida Nation.
 - Archaeological content should be controlled by the Council of the Haida Nation.
 - Researchers selection should be controlled by Council of the Haida Nation.
 - All researchers should sign the Council of the Haida Nation's Archaeology paper that recognises Council of Haida Nations ownership.
- The Haida would like to see "Haida Occupancy and Resource Use" noted as an existing tenure.

Other Agency Interests

- Land and Water BC administers adjacent development
- Ministry of Forests has an interest in adjacent forest land
- Ministry of Transportation has an interest in the adjacent gravel pit and its ongoing use

Private and Public Stakeholder Interests

- University of Victoria, Evolutionary and Ecological Studies, has been conducting research in the Drizzle Lake Ecological Reserve for over 20 years.
- Scientific research and education communities.

Ecological Reserve Statement

Conservation Role

Drizzle Lake Ecological Reserve serves a conservation role within the British Columbia protected areas system. The ecological reserve protects an international significant and critically imperiled population of giant black stickleback that is one of only three known populations in British Columbia. The ecological reserve also protects provincially significant wildlife and plant communities including the red-listed ermine (*haidarum* subspecies) and blue-listed northern saw-whet owl (*brooksi* subspecies), unique high moor bogs and related forest ecosystems.

Research and Education Role

Drizzle Lake Ecological Reserve offers unique scientific research opportunities for internationally and provincially significant wildlife and provincially and regionally significant plant communities. The giant black and threespine stickleback populations are endemic to the area and coexist with coho salmon, Dolly Varden, and cutthroat trout. Due to the sensitivity of the area, scientific and educational use should be limited. However, as Drizzle Lake contains one of only three giant stickleback populations known, scientific research and monitoring must be conducted to determine if introduced species are present (mainly beaver).

Management Commitments and Issues

Management Direction from Previous Planning

Observations and scientific research determined that Drizzle Lake Ecological Reserve has significant stickleback communities. As this community is only one of three known, the 837-hectare ecological reserve, which includes the entire lake ecosystem and surrounding bog and forest ecosystems, was protected as an ecological reserve on August 10, 1973.

Previous planning has been restricted to the preparation of an annual management plan detailing current year activities.

Management Issues

Environmental Stewardship Division identified the following management issues.

Theme	Issue
Protecting ecological values	<ul style="list-style-type: none">• Introduced species (beavers) damming of the lake outlet could result in flooding of shorelines with subsequent changes in the littoral areas used for spawning by the sticklebacks.• Native vegetation may be impacted by introduced species (deer and beaver).• Access<ul style="list-style-type: none">▪ Stickleback populations are susceptible to damage through recreational and scientific research and monitoring access.▪ Unknown amount of use by visitors.▪ The unmaintained trail is advertised in local hiking books.
Protecting cultural features	<ul style="list-style-type: none">• Cultural features have not been identified to the Environmental Stewardship Division.<ul style="list-style-type: none">▪ The Council of the Haida Nation would like control of archaeological and cultural materials.

Theme	Issue
First Nation Involvement	<ul style="list-style-type: none">• The Council of the Haida Nation would like to co-manage protected areas within their claimed territory.• The Haida assert historic use of the area and would like all necessary research to be conducted with Council of the Haida Nation's direction and control of content.

Management Direction

Priority Management Objectives and Strategies

Objective	Strategy
<p>Protect natural features</p>	<ul style="list-style-type: none"> • Implement a management approach that will conserve biodiversity and allow natural processes to predominate. <ul style="list-style-type: none"> ▪ Monitor the Drizzle Lake drainage for introduced species/predators (e.g. beavers) annually. <ul style="list-style-type: none"> – Develop and conduct control strategies for introduced species as necessary. ▪ Monitor the effects of scientific research and study and limit access if research is impacting the conservation values of the ecological reserve. ▪ Monitor stickleback population health. ▪ Prepare a fire management plan. ▪ Conduct an inventory to identify sensitive habitats and red- and blue-listed wildlife and plant communities. <ul style="list-style-type: none"> – Develop special management plans for rare, threatened and endangered species as required. ▪ Review option of trapping introduced species – beaver. ▪ Liaise with Ministry of Forests to ensure harvesting practices on neighbouring forest land does not impact the integrity of the ecological reserve. ▪ Liaise with Land and Water BC to ensure any future developments do not impact the natural hydrology of Drizzle Lake or vegetation in the ecological reserve. ▪ Determine the area of impact on the ecological reserve (greater park ecosystem) and monitor activities within it that might adversely affect the conservation values. • Develop a non-extractive research program for known internationally and provincially significant species in the ecological reserve <ul style="list-style-type: none"> ▪ Issue research permits (non-extractive) for all acceptable research • Attempt to recruit and retain an ecological reserve warden. • Minimize visitor impacts on lake ecology and drainage. <ul style="list-style-type: none"> ▪ Identify the boundaries of the ecological reserve. ▪ Post signs identifying the ecological reserve at potential access points. ▪ Monitor human use in conjunction with other agencies (Ecological Reserve wardens, Conservation Officer Service, Ministry of Forests, etc.) to determine impacts on the ecosystem. ▪ Contact publishers/authors of local hiking books to remove the Drizzle Lake hiking trail from publications.

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| | <ul style="list-style-type: none">• Establish a working relationship with the Council of the Haida Nation to preserve the conservation values of the ecological reserve. |
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Objective	Strategy
Protect cultural heritage values	<ul style="list-style-type: none"> • Investigate and collate existing information on cultural heritage values. • Prepare a Cultural Features Information Summary (based on Haida interests and desires). • Work with the Council of the Haida Nation to identify cultural heritage sites and traditional use in area. <ul style="list-style-type: none"> ▪ Work to determine how the Council of the Haida Nation and the Environmental Stewardship Division can work together on issues related to archaeology and cultural materials.
Involve First Nations	<ul style="list-style-type: none"> • Through the treaty process or other mechanisms in place, investigate options for a more formal relationship with the Haida. Relationships should facilitate increased First Nation involvement in the stewardship and protection of the ecological reserve. • Work with the Council of the Haida Nation to develop cultural resource information for the public and define protective measures for their culture. • Honour aboriginal traditional uses and activities subject to conservation and safety concerns.

Consultation and Future Planning

Environmental Stewardship Division will continue consultations with the Haida First Nation to design and implement research programs that properly identify and locate heritage and cultural values while ensuring their protection. The division will also work with other agencies to ensure that the values within the ecological reserve are considered in future development and harvesting activities that are planned nearby. Internally, the Park and Protected Areas Section will continue to work with the Fish and Wildlife Science and Allocation Section to ensure effective protected area management within Drizzle Lake Ecological Reserve.

Figure 3. Table of acceptable uses, activities and facilities in the Drizzle Lake Ecological Reserve.

Activity/Use/Facility	Acceptability
Aboriginal Traditional Uses and Activities	Y
Hunting	N
Fishing	N
Trapping	N
Grazing (domestic livestock)	N
Recreational Gold Panning/Rock Hounding	N
Utility corridors	N
Communication Sites	N
Horse Use/ Pack Animals	N
Guide Outfitting (hunting)	N
Guide Outfitting (fishing)	N
Guide Outfitting (nature tours)	N
Guide Outfitting (river rafting)	N
Cat-Assisted Skiing	N
Ski Hills	N
Commercial Recreation (facility-based)	N
Commercial recreation (non-facility based)	N
Backcountry Huts	N
Water Control Structures	N
Fish Stocking and Enhancement	N
Road Access	N
Off-road Access (snowmobiling)	N
Off-road Access (motorised)	N
Off-road Access (mechanical activities)	N
Motorised Water Access	N
Aircraft Access	N
Fire Management (suppression)	N1
Fire Management (prescribed fire management)	N1
Fire Management (prevention)	N1
Forest Insect/Disease Control	M
Noxious Weed Control	N1
Exotic Insect/Disease Control	N1
Scientific Research (specimen collection)	M
Scientific Research (manipulative activities)	M

Y= allowed subject to conditions identified in the management direction statement or management plan

M= may be permitted if compatible with protected area objectives

N= not allowed

N1= allowed for expressed management purposes only

N2= present and allowed to continue but not normally allowed