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STAMP FALLS PROVINCIAL PARK
WILDLIFE VIEWING PLAN

Prepared for: B.C. Ministry of Parks
South Coast Region
North Vancouver, B.C.

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December 29, 1989

PART A. PLAN SUMMARY

Stamp Falls Provincial Park has a single primary wildlife viewing feature - the summer salmon run into Great Central Lake. The salmon run is large and spectacular, making it well worthwhile to promote in the Wildlife Viewing Program. However, the remaining flora and fauna are not unique; they are common to most of the other parks in the area.

The most reasonable and effective method to promote wildlife viewing in Stamp Falls Provincial Park is by a series of interpretive signs. The park will be celebrating its 50th anniversary in 1990, which would make next year a particularly good time to proceed with the interpretive program. There are several safety concerns which should also be addressed.

A. Land Tenure

The 233 hectares of the park belong to the Provincial government. Stamp Falls is classified as Class A, Category 6, in the Provincial Park system. Surrounding lands are about 50% privately owned, and the remainder is part of a tree farm licence.

B. Other Agencies With Interests On-Site

The agencies with an interest on-site are the: Department of Fisheries and Oceans (DFO; fish ladder, fisheries enforcement, salmon research); Ministry of the Environment (MOE; fisheries enforcement); Port Alberni Salmon Festival Society (promotion of salmon for recreational fishing), and; Port Alberni Chamber of Commerce (tourism).

C. Term of Plan

A 3-year management plan is sufficient to implement measures necessary to promote wildlife viewing. Most of the interpretive and safety items should occur in the first year.

D. Existing Uses and Facilities

Park access is by public road from Port Alberni. The park itself has 2 roads, 2 trails, an 18 space parking lot, a 22 space campground, 6 picnic tables, and 6 pit toilets. Day-use attendance is 10,000-11,000 parties annually, and the campground attendance is currently at 1,900 parties for 1988, the highest usage ever.

The 2 km VIP signs on the public access road are missing and should be installed. There are 3 safety signs in the park

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pertaining to the falls, which seems sufficient. A Type I shelter sign is at the entrance to the campground, containing only a campground map and 3 DFO salmon posters. The signage in the shelter should be improved to include: a map of parks in the surrounding area with a photo-panel; a detailed map of the park and campground sites, and; an explanation of the role of the park in the Salmonid Enhancement Program.

E. Viewing Features and Locations

The single primary viewing feature in the park is the large run of sockeye salmon (Ochorhynchus nerka) occurring from late June to late October. A large run of chinook salmon (O. tshawytscha) also occurs from early September to late November, providing an additional wildlife viewing opportunity.

The secondary wildlife viewing features do not provide a unique viewing opportunity, except perhaps the Pacific lamprey (Lampetra tridentata) which is found in the Stamp River from late May to September.

F. Other Opportunities

Although there are numerous salmon runs on Vancouver Island, none other in the area provides an excellent viewing area for salmon (especially sockeye), during the summer months tourist season. The nearest other summer salmon run is in the Sproat River going into Sproat Lake, but it is not as easily accessible.

G. Interpretive Themes

Four interpretive signs are recommended. Their locations and themes are as follows: 1) park campground entrance - Salmonid Enhancement Program, 2) falls viewpoint - salmon migration, 3) upstream exit of fish ladder - operation and history of the fish ladder, and 4) lower pool viewpoint - range and natural history of salmon.

H. Viewing Feature Sensitivity

The wildlife viewing occurs on the periphery of the fish habitat and does not cause any interference. The remainder of the park is already designed for recreational use.

I. Limitations to Viewing Use and User Capacity

The number of parking spaces is insufficient and should be increased. It appears that this can be readily accomplished. Other limitations relate to crowding on the trails and fish ladder, which may jeopardize public safety.

J. User and Facility Management

Illegal fishing may be discouraged by improving trail access behind the fish ladder. This would encourage greater public use and make a well-known illegal fishing spot more visible.

K. Wildlife and Habitat Management

A viewing window for the fish ladder should be considered and investigated with an engineering study.

Land not in the park on the opposite bank of the Stamp River should be purchased. To protect the visual integrity of the park a 50 m strip is recommended.

L. Public Safety

Public safety is a major concern in the park. New fencing should be added to sections along the trail to the fish ladder and beyond, and to the outer edge of the fish ladder as well. Existing fences need repair.

The gaps beside some grids over the fish ladder should be closed, and the grate covering the tunnel at the end of the fish ladder should have the spacing between the bars reduced. Some debris along the trail as it goes downhill to the fish ladder should be removed.

The bank overlooking the trail close to the falls viewpoint needs to be stabilized. The trail down to Deer Creek needs steps, and a new bridge should be constructed over the creek.

M. Marketing

An information card (Pro-4) should be produced and provided to the Port Alberni Chamber of Commerce. Outdoor writers should be invited to tour the site run each year to encourage the wildlife viewing opportunities in the park.

N. Research and Inventory

The park will continue to be used by the DFO in its research of salmon and the Pacific lamprey. An inventory of the park's vegetation and wildlife should be produced to ensure that future management plans are informed and accurate.

There is a unique opportunity to determine if the introduction of interpretive signs has a positive impact on day-use attendance. Day-use figures appear to have stabilized and a future change may be attributed to improvements in wildlife viewing and marketing measures.

O. Development Plan and Budget

The interpretive signs, road signs, critical safety measures, and possibly the engineering study of the fish ladder window should be implemented in 1990-1991. The total cost would be approximately \$26,000, with some costs being shared by the Port Alberni Salmon Festival Society (it appears that \$2,750 - more than the cost of one sign, is already available), and perhaps the DFO and MOE.

The 1991-1992 period should concentrate on facilities expansion and additional safety measures, for a cost of approximately \$9,000. The installation of the fish ladder window (cost undetermined), with the DFO as a possible sharing agency, could also occur at this time.

The biophysical inventory and wildlife survey is a low priority and could occur in 1992-1993 or later. Other future considerations include land acquisition and further promoting the wildlife viewing of the Pacific lamprey.

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PART C. DETAILED PLAN

A. Land Tenure

A.1 Legal Tenure

All lands in Stamp Falls Provincial Park belong to the Province of British Columbia, Ministry of Parks. They occur within the Alberni/Clayoquot Regional District of the Alberni Land District, and the Comox Electoral District. The park's area is 233 hectares (583 acres).

A.2 Legal Description

The park was created in 1940 with Order in Council 1687. Subsequent Orders in Council pertaining to the park are: 333/42 (addition); 540/44 (purchase); 972/63 (addition), and; 134/67 (addition and reclassification). The legal description of the land is:

All those parcels of land situated in the Alberni District containing 580 acres more or less and more particularly described as follows:

- 1) Lots 1, 2, 3, 4, and 5, Block H of lot 259, Alberni District, Plan 2024, except thereout from said Lot 2, Plan 8374 deposited in the Victoria Land Registry Office.
- 2) Lot 80, except thereout the most northerly 40 chains thereof.
- 3) Lot 193.

The land to the south and east is primarily zoned rural with some farmland, all privately owned; the lots are of varying sizes. There is a small portion of a recreation reserve to the northeast. To the south is vacant crown land. Across the river to the west is Tree farm Licence 21, BK1, Bk209.

A.3 Status of Lands

Stamp Falls Provincial Park is a Class A, Category 6 (recreation) park. It is in the South Coast Region (A), Strathcona District, Arrowsmith Zone of the Provincial Park System. All lands are also part of the Agricultural Land Reserve. There are no mineral claims, water rights, forest tenures, trapping licences, guiding activities, outfitting

activities, inholdings, or informal tenures (including life tenants), in the park.

There is one Park Use Permit (#56) to the Department of Fisheries and Oceans (DFO) that includes the access road (33 feet (10 metres) wide) and the fish ladder.

B. Other Agencies With Interests On-Site

B.1 Salmonid Enhancement Program (DFO)

There is a fish ladder built in 1956 beside the falls in the park. Sockeye, chinook, and coho salmon use the fish ladder on their way to Great Central Lake.

B.2 Pacific Biological Station, Nanaimo (DFO)

The DFO regularly monitors the numbers and species of salmon using the Stamp River at this site. The Pacific lamprey is also studied here.

B.3 Fisheries Enforcement (MOE, DFO)

Salmon and steelhead fishing is permitted in the Stamp River. Fisheries Enforcement Officers regularly visit the park during the salmon and steelhead runs to ensure that fishing activities are legal. The local Conservation Officer makes about 150-200 visits annually to the Stamp/Somass Rivers System.

B.4 Port Alberni Salmon Festival Society

This Society conducts a big salmon derby every Labour Day for chinook salmon in Alberni Inlet at the mouth of the Stamp River. The derby, operated from the Clutesi Marina, annually attracts 4,000 people with about \$50,000 in prizes. The Society

(which donated funds to produce this Wildlife Viewing Plan), is interested in promoting public awareness of the salmon run in the Stamp River, in enhancing salmon stocks, and in providing educational opportunities about salmon migration (particularly the role of the fish ladder) in Stamp Falls Provincial Park.

B.5 Port Alberni Chamber of Commerce

The Chamber of Commerce promotes the park as a local wildlife viewing, camping and fishing area. The steelhead run

is mentioned in the publication "Supernatural Islands". Otherwise, only people inquiring at the Chamber of Commerce for local tourist information are directed to the park. The fish ladder and salmon run in the park are regarded as a major local tourist attraction.

The sport fishing industry is very important to the economy of Port Alberni, mainly due to salt water fishing activity. The city was not included in a report on "The Economic Impact of Freshwater Fisheries in B.C.", published by the Ministry of Tourism, because the city does not contain a lodge. However, the owner of the Port Alberni Marina alone operates 35 charter boats, 5 drift boats in the summer, and 5 drift boats in the winter, with 100% capacity. There are also 4 tackle shops in the city.

C. Term of Plan

This Wildlife Viewing Plan covers a period of 3 years. It addresses facilities improvement, safety measures, engineering studies, and resource inventories required to maximize wildlife viewing potential. At the end of the 3 year period no further measures are required, unless the resource inventories reveal unexpected additional opportunities for wildlife viewing.

D. Existing Uses, Access, and Facilities

D.1 Viewing Operators and Activities

There are no wildlife viewing operators in the park, and the B.C. Ministry of Parks does not include it in its annual interpretation program. The major wildlife viewing activity in the park is public viewing of the salmon runs from May to November.

The Ministry's objectives for the park as outlined in the "Interim Policy Statement for Stamp Falls Park" (1976) are to make "...provision of recreation opportunities for Port Alberni residents, tourists in the Alberni Valley, emphasis being on fishing, camping, and picnicking activities..", and "...in a regional context the park functions as a day-use and over-night facility for both residents and tourists in the Alberni Valley".

The park facilities are maintained under contract by West Coast Rangers, Port Alberni, from mid-March to end-October. The contractor also collects revenue from camping use.

D.2 Access

Access to the park is by public road from Port Alberni. The roads and trails occurring within the park are shown in Figure 1. Within the park there is a gravel road leading from the park entrance to the campground, which continues to a small parking area. This road contains many potholes and needs repair. It generates dust during the summer, which is controlled by a dust abatement program.

A trail extends from the parking area beside the river to the fish ladder at the falls, and continues to a lookout just before the junction of the Stamp River and Deer Creek, where the trail ends. This trail needs additional gravel, especially beyond the fish ladder. A second gravel road, blocked off with a gate, occurs in the park and is used as a trail. In total there are two gravel roads and two trails (totalling 2 km in length).

D.3 Facilities

Park facilities were upgraded in 1988 (painting, new wood bin, etc.).

D.3.1 Accommodation

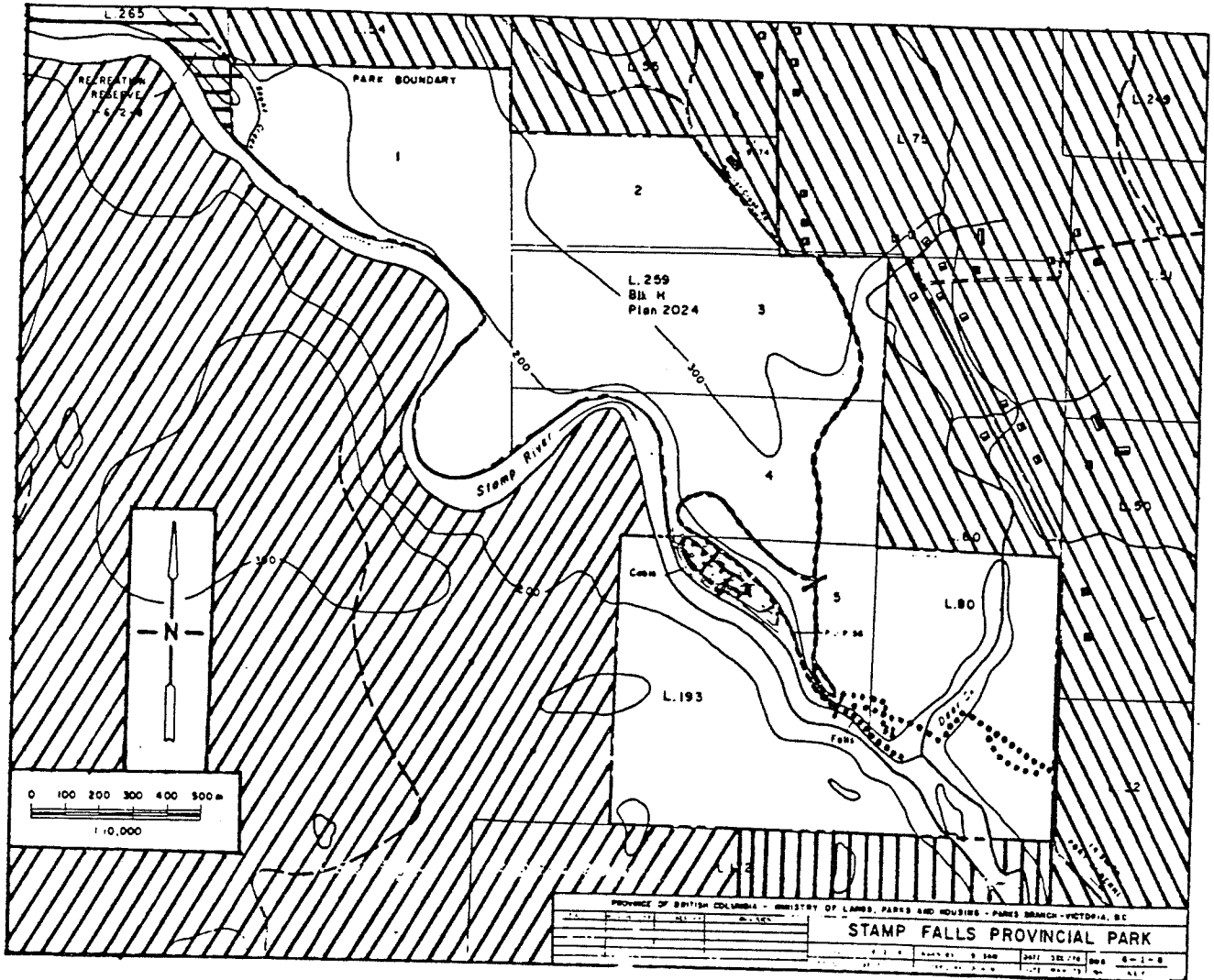
The park contains a campground with 20 single campsites and 1 double campsite, for a total of 22 camping spots. There are 4 pit toilets in the campground, and a single water pump. There are no flush toilets.


D.3.2 Day-Use


There are 6 picnic tables in the day-use area. Two pit toilets are present. The parking lot is gravel with 18 identified stalls in a single row. The parking lot measures approximately 65 x 12 m, the center being somewhat wider at 19 m. This area is large enough that it can easily be expanded to include an additional row of 18 stalls. This expansion should occur soon since the day-use figures would indicate that parking is already a serious problem during the summer. Rowdiness and vandalism are a concern.

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Figure 1. Map of Stamp Falls Provincial Park showing roads and trails.



Tree Farm Licence 

Private Property 

Roads

Undeveloped Crown Land 

Recreation Reserve 

Trails.....

D.4 Visitation

Day-use and campground attendance figures are presented in Table 1. The data was obtained for 1984-1988 from Park Data Handbooks. The numbers represent parties, where a day-use party represents 3.5 individuals, and a campground party 3.2 individuals.

Day-use attendance for 1988 totalled 10,662 parties, peak usage occurring in July (1,874) and August (1,837 - 93% occupancy). The lowest values are from January-March. The annual attendance appears to have stabilized at 10,000-11,000 parties.

Campground attendance is increasing steadily and has currently peaked at 1,917 parties in 1988. The heaviest campground use occurs in August (631). The July-September period is clearly favoured. Campground attendance in the whole Arrowsmith Zone in 1988 was 49,869 parties with Rathtrevor Beach accounting for more than half that total. Stamp Falls is clearly not a favoured camping spot in the zone, with only Pirates Cove Marine and Taylor Arm having lower values. Nevertheless, Stamp Falls was approaching its maximum monthly capacity of 682 camping nights (31 days x 22 spots) in August. The park campground demand probably exceeded capacity on some nights in 1988.

D.5 Signage

D.5.1 Road Signs

The standard 2 km VIP signs are absent from the public road leading to the park and should be added.

D.5.2 Park Signs

D.5.2.1 Safety

There are three important safety signs pertaining to the falls. One is suspended from a cable going across the river warning boaters about the approaching falls. A second occurs on a bank just before the rapids approaching the falls with a similar warning. The third is along the road before the campground entrance.

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Table 1. Park Visitation Figures by Month 1984-1988. The figures are in parties.

Day Use (one party = 3.5 individuals)													
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1984	245	-	-	1219	481	655	1640	1240	2405	1779	149	138	9951
1985	253	174	303	395	327	1231	1426	1774	1693	931	567	217	8183
1986	274	160	416	447	623	1044	1313	2317	1761	1334	431	302	10422
1987	332	298	419	756	1676	740	1425	1873	1299	1224	529	354	10915
1988	374	430	271	-	721	972	1874	1837	1603	1477	562	481	10662

Campground Attendance (one party = 3.2 individuals)													
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
1984					37	61	352	519	562	228h			1759
1985						20	349	458	322	152h			1301
1986				45	50	115	310	586	424	258	15h	8h	1811
1987	22	37h	12	50	44	134	294	600	413	240			1846
1988					61	141	448	631	366	270			1917

* 6 or less days total: figure represents an estimate
 h half month only

D.5.2.2 Information Signs

There is only one park information sign. It is on the Type 1 shelter at the campground entrance. It contains a campground map on one side, with 3 salmon identification posters (laminated) from the DFO on the other side.

This sign should be upgraded to 1990 standards. One side should contain 2 porcelain enamel signs (35 x 38" - standard sign sizes are in inches) as follows:

- 1) a map of the parks in the surrounding area with a photo-panel plus a header
- 2) a detailed map of the park and campground sites with a header

The second side should contain the following:

- 1) laminated DFO posters of the 3 salmon species and the steelhead in the river
- 2) a porcelain enamel sign (35 x 38") explaining the Salmonid Enhancement Program, especially the function of the fish ladder. A header sign should include an acknowledgement of the funding provided by the Port Alberni Salmon Festival Society in promoting the viewing of the salmon run.

Additional information signs will be discussed in the "Interpretation" section of this viewing plan. Other existing signs are for traffic control (e.g. speed).

D.5.2.3 Regulatory Signs

There is a marker next to the river above the rapids indicating the location of legal fishing. An additional sign should be placed at the entrance of the trail from the parking lot to the fish ladder. This sign should contain the following information:

- 1) a directional statement saying: "This Way to the Fish Ladder"
- 2) the rules and regulations controlling fishing activities

E. Viewing Features and Locations

E.1 Primary Features - Fish

The primary viewing feature in Stamp Falls Provincial Park is restricted to the salmon run from the Pacific Ocean to Great Central Lake. The best locations in the park to view the salmon are at the fish ladder itself, and the pool viewpoint beyond the ladder. Salmon run counts are shown in Table 2.

There is a very large run of sockeye salmon (Oncorhynchus nerka) from mid-June to late August. The magnitude of the run can be estimated from the counts in Table 2, which represent samples of total population sizes. Accordingly, the run varies from 120,000 to 350,000 individuals, depending primarily on water temperatures in the ocean (Jim Mitchell, DFO, pers com). The fish are brightly coloured and clearly visible. The jacks average 4-5 lbs (2 kg) in size; adults average 10 lbs (4.5kg).

A smaller run, but still large enough to provide a spectacular wildlife viewing opportunity, occurs for chinook (spring) salmon (O. tshawytscha) from early September to late November. About 30,000-80,000 individuals pass through the Stamp River during this time. Jacks average 5-6 lbs (2.5 kg) and adults 10 lbs (4.5 kg) or larger, with a record of 90 lbs (41 kg) for the species.

A third small and little understood salmon run occurs from September-January. Coho salmon (O. kisutch) pass through the river during this time. The run is too small to provide good wildlife viewing.

About 1,500+ steelhead (Salmo gairdneri) also pass through the river, plus an insignificant number of chum salmon (O. keta).

The salmon migration route from Alberni Inlet to Great Central Lake is shown in Figure 2. They travel from the inlet into the Somass River, and then the Stamp River. The chinook and coho salmon spawn in most of the creeks and tributaries of the Stamp River and Great Central Lake. The sockeye salmon only spawn in the waters of the lake.

The Robertson Creek Hatchery is located on the Stamp River by Robertson Creek, one of its tributaries. It is 2 miles downstream from the dam on Great Central Lake. The hatchery has an annual release of about 10 million chinook smolt, 1.5 million coho smolt, and 250,000 steelhead smolt. The chinook

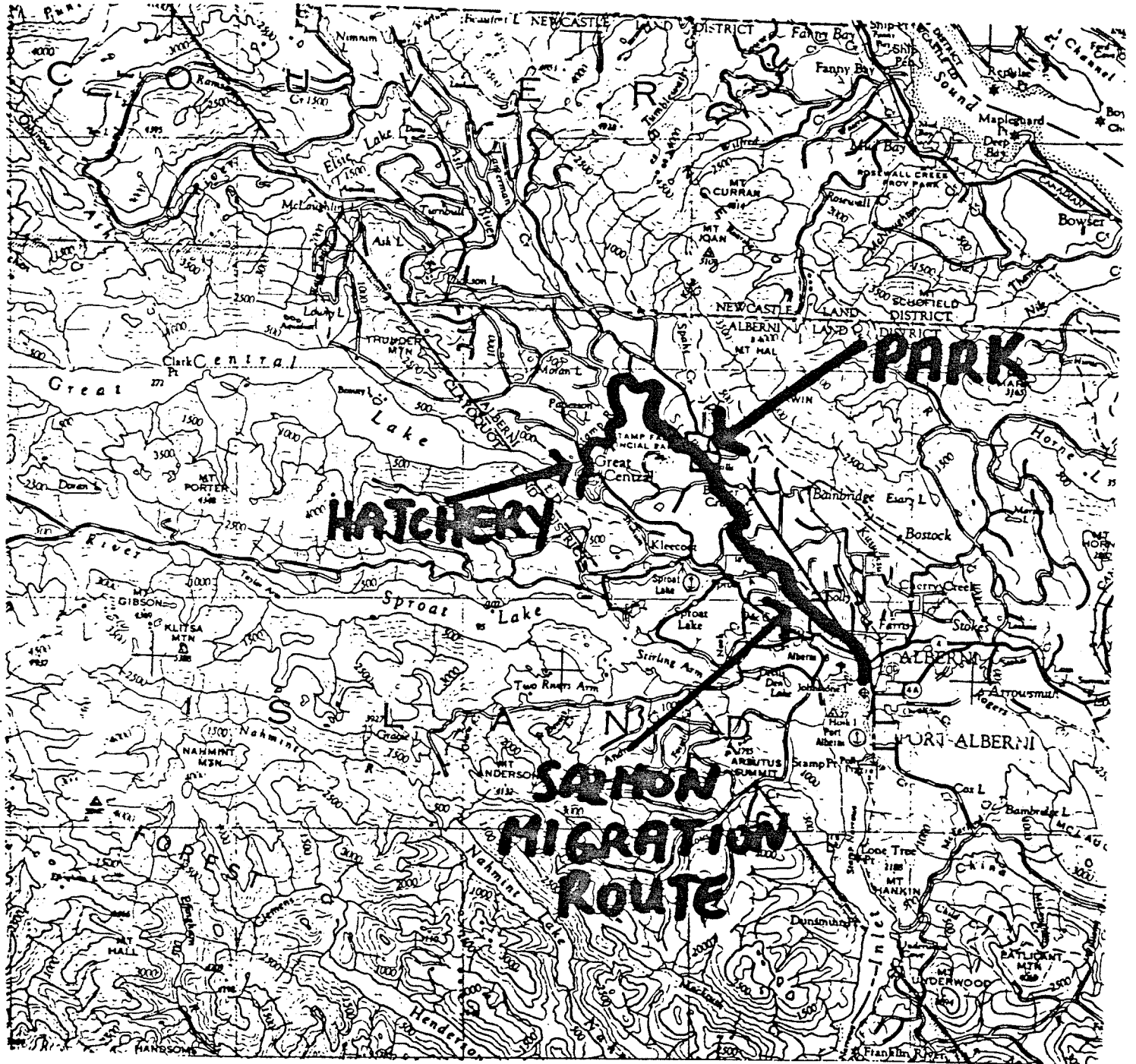
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Table 2. Salmon use of the Stamp River, 1987-1989 (total counts of salmon through Stamp Falls). Data were obtained from Jim Mitchell, DFO.

Year	Chinook	Jack Chinook	Sockeye	Coho	Jack Coho	Steel -head	Unknown
1987	53,216	N/A	55,159	17,052	N/A	825	2,362
1988	66,171	10,149	24,015	10,594	1,735	947	1,592
1989	60,274	15,979	38,270	33,818	4,630	514	1,364

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Figure 2. Migration route of salmon using the Stamp River on their way to Great Central Lake.



are released after 60-90 days in the hatchery; the coho and steelhead after one year. Sockeye salmon are not reared at the hatchery.

Wild fry of chinook salmon spend one year in the river systems before going to sea. Coho salmon remain 1-2 years, and steelhead 1-6 years. Sockeye salmon fry remain in Great Central Lake for one year before migrating out to sea (at the end of April).

The chinook, coho, and steelhead wild fry feed on aquatic insects and smaller fish. The sockeye fry feed primarily on crustaceans (cladocerans, copepods, amphipods) in the lake plankton. Great Central Lake is annually fertilized by airplane (to feed the plankton) as part of the Salmonid Enhancement Program to increase numbers of sockeye salmon. Estimates of numbers of wild fry are not available. They are not particularly conspicuous and do not provide a good wildlife viewing opportunity.

E.2 Secondary Features

E.2.1 Fish Other Than Salmon

The Pacific lamprey (Lampetra tridentata) occurs in the fish ladder from late May to September. It is non-parasitic and non-feeding in freshwater. It is not readily visible but can be observed at times. The river lamprey (L. ayresi) and western brook lamprey (L. richardsoni) may perhaps also be found here.

Information on other fish species in the Stamp River was not available. Some of the more common fish present probably include threespine stickleback (Gasterosteus aculeatus), coastrange sculpin (Cottus aleuticus), prickly sculpin (C. asper), dolly varden (Salvelinus malma), and cutthroat trout (Salmo clarki). They do not provide a good viewing opportunity.

E.2.2 Birds

There is no site-specific information on birds frequenting Stamp Falls Provincial Park. Nevertheless, a list of 85 species of birds which might reasonably be found in the park, or flying overhead, is presented in APPENDIX A.

The Stamp River is an excellent habitat for American Dipper (Cinclus mexicanus), mergansers, Harlequin Duck (Histrionicus histrionicus), Bufflehead (Bucephala albeola), Common

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Goldeneye (Bucephala clangula), Belted Kingfisher (Ceryle alcyon), and gulls. Dippers especially are probably abundant enough to provide good wildlife viewing at all times of the year. Their feeding habits of foraging among rocks in and under the water, plus their conspicuous dipping movements, make them particularly interesting to observe. Harlequin Ducks are brightly coloured, and Common Goldeneyes have beautiful patterning, which makes them interesting as well. The forest is a good habitat for woodpeckers, and there are holes made by Pileated Woodpeckers (Dryocopus pileatus) on some trees.

Glaucous-winged Gulls (Larus glaucescens) are common along the river, and the cliffs on the opposite side of the Stamp River from the trail make a particularly scenic backdrop when viewing these birds in flight. The gulls may also be seen in the open area of the river where it is joined by Deer Creek from the pool viewpoint.

The river also appears to be a good place to occasionally view a Bald Eagle (Haliaeetus leucocephalus).

E.2.3 Mammals

A list of 15 mammal species (excluding bats) which may occur in the park is presented in APPENDIX B. Again, there is no site-specific information. The black bear (Ursus americanus), raccoon (Procyon lotor), red squirrel (Tamiasciurus hudsonicus), black-tailed deer (Odocoileus hemionus), and possibly American beaver (Castor canadensis), would provide possible wildlife viewing. Only the red squirrel would be common.

E.2.4 Amphibians and Reptiles

No site-specific information exists but a short list of species possibly occurring in the area is given in APPENDIX C. Certain salamanders may occur in the forest and may use the permanent standing water for breeding. However, they would be inconspicuous in this area and do not provide a viewing opportunity. Treefrogs (Hyla regilla) were heard within the park during site visits. At least one woodland pond occurs in the park.

The park has very little suitable habitat for reptiles, although some snakes may be infrequent visitors.

E.2.5 Vegetation

The vegetation of Stamp Falls Provincial Park is predominantly a west coast temperate rain forest approximately 150 years in age. It contains Douglas-fir (Pseudotsuga menziesii), western redcedar (Thuja plicata), Sitka spruce (Picea sitchensis), and bigleaf maple (Acer macrophyllum). Along the river edge are young black cottonwood (Populus balsamifera) and red alder (Alnus rubra). Licorice fern (Polypodium sp.) is found occasionally amongst the moss on the trees and rocks. A list of plants common in this type of forest and which may be expected to occur in the park is given in APPENDIX D. A map of the general vegetation associations is presented in Figure 3.

The area which became Stamp Falls Provincial Park in 1940 was burned in 1924. A forest fire may have run through the area, or it was perhaps logged first in the early 1920's (Cruikshank pers com).

E.2.6 Landform Features

By far the most interesting landform feature in the park is the falls and canyon, preceded by rapids. The cliffs on the bank opposite the trail are also scenic.

There is a small cave formed by the cut of the entrance of the fish ladder through a rock outcropping. This provides an interesting viewing spot and may even contain bats.

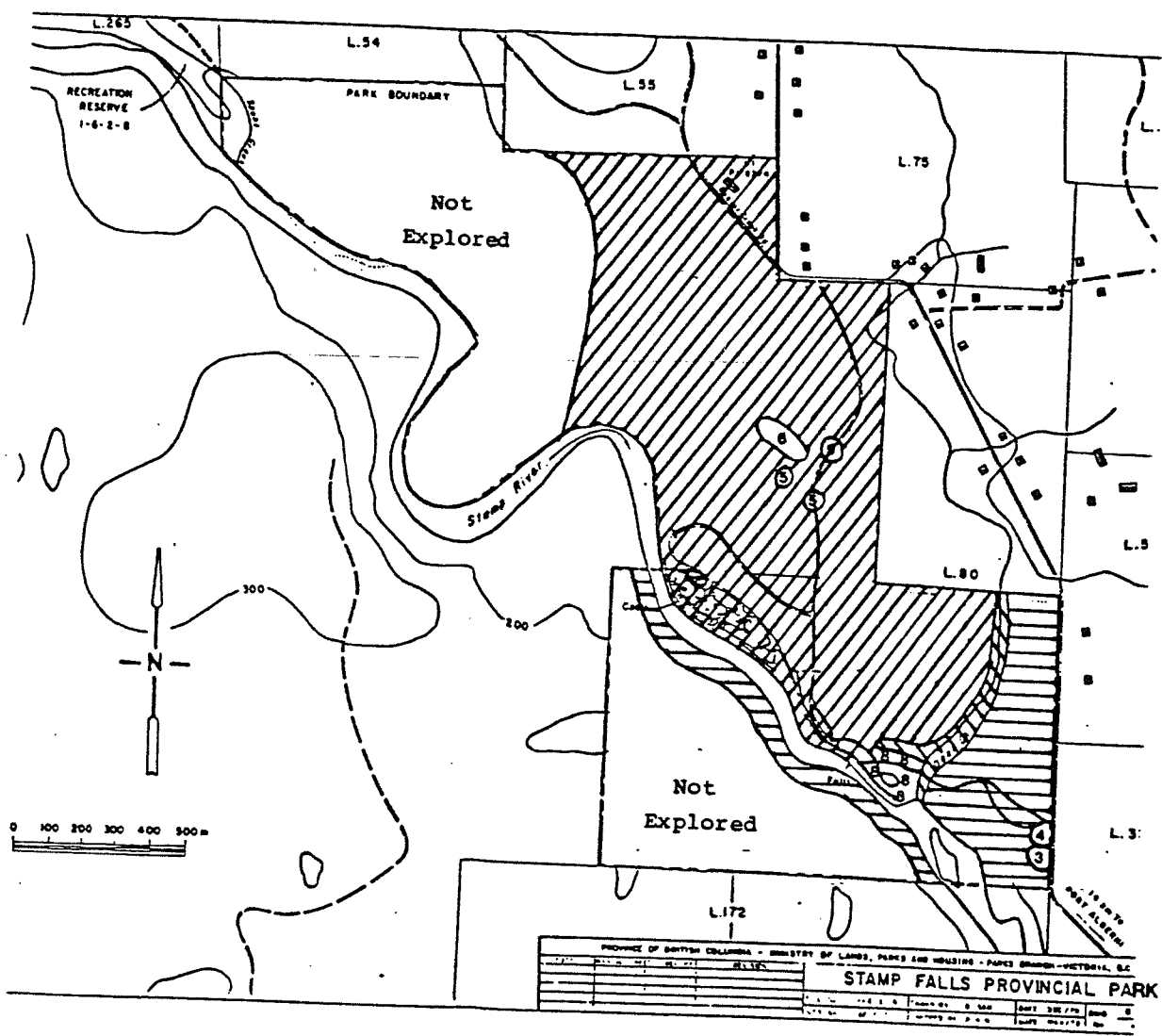
Below the falls viewpoint is a cliff of loose shale containing many concretions.




F. Other Opportunities

Many salmon runs occur in this region of Vancouver Island. However, no other provide excellent viewing during the summer months. The only other local summer salmon run

Stamp Falls Hildlife Viewing Plan

Figure 3. Map of general vegetation associations.



- | | | | |
|--|---|---|---|
| 1. young Douglas-fir (20 m) |  | 5. young alder | |
| 2. yellow cedar (20 m) | | 6. spirea sp. (pond) | |
| 3. Douglas-fir (25 m) |  | 7. older bigleaf maple (25 m) |  |
| 4. young Douglas-fir
bigleaf maple clearing | | 8. same as 1 but taller
Douglas-fir (30 m) | |

Stamp Falls Wildlife Viewing Plan

occurs in the Sproat River going into Sproat Lake which does not have good viewing access or opportunity, and has no falls.

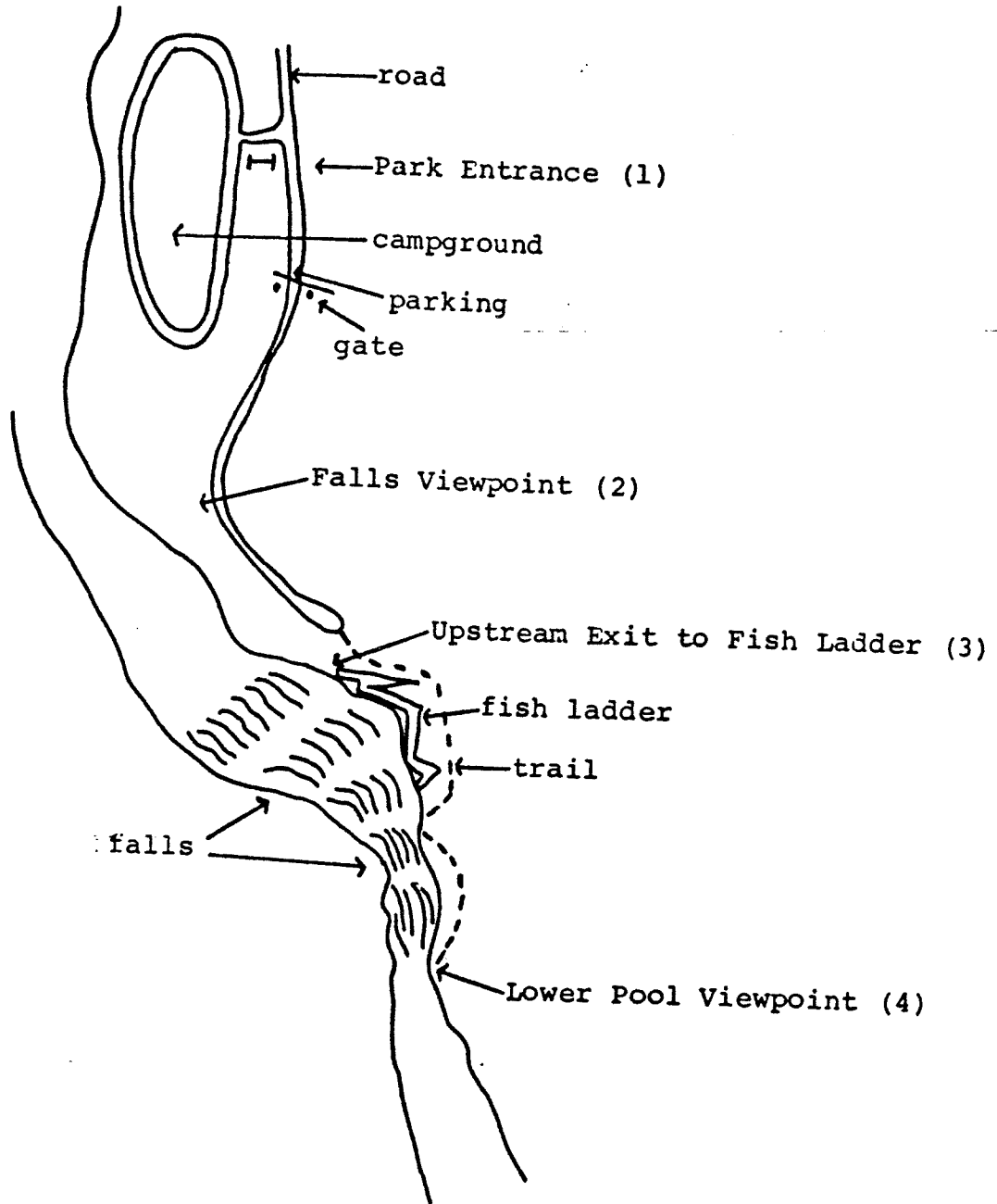
The Robertson Creek Hatchery provides an excellent viewing opportunity for chinook and coho salmon, and steelhead in a facilities environment. The location of the hatchery relative to the park is shown in Figure 4. It is a 20 minute drive from Port Alberni and is open 7 days a week from October first to mid-November. The fish can be seen in a large lagoon before they enter the 2 fish ladders. Each fish ladder has a viewing window. The hatchery also offers school programs and has a self-guided interpretive display.

However, the Robertson Creek Hatchery is not as attractive as Stamp Falls Park in providing salmon viewing opportunities. The hatchery is not in a natural situation because of the rearing facility. Also, the salmon in the park provide a spectacular display as they move up the falls. In addition, the hatchery does not provide a good opportunity to view sockeye salmon, except in the lagoon. Finally, its promotional period is concentrated in the fall, whereas the sockeye salmon in Stamp Falls Park are best viewed at the height of the tourist season during the summer.

Port Alberni itself is at the conjunction of 3 biogeoclimatic zones, making it an interesting location to observe plants; the delta alone has 204 species (van Dendieren 1982). The lookout on the hillside from the Parksville approach to the city, and the Somass River delta, are particularly interesting in their plant species. The areas contain 20 rare species, many of which are remnants of the last ice age. The plant attractions immediately around Port Alberni preclude any promotion of the vegetation of Stamp Falls Provincial Park.

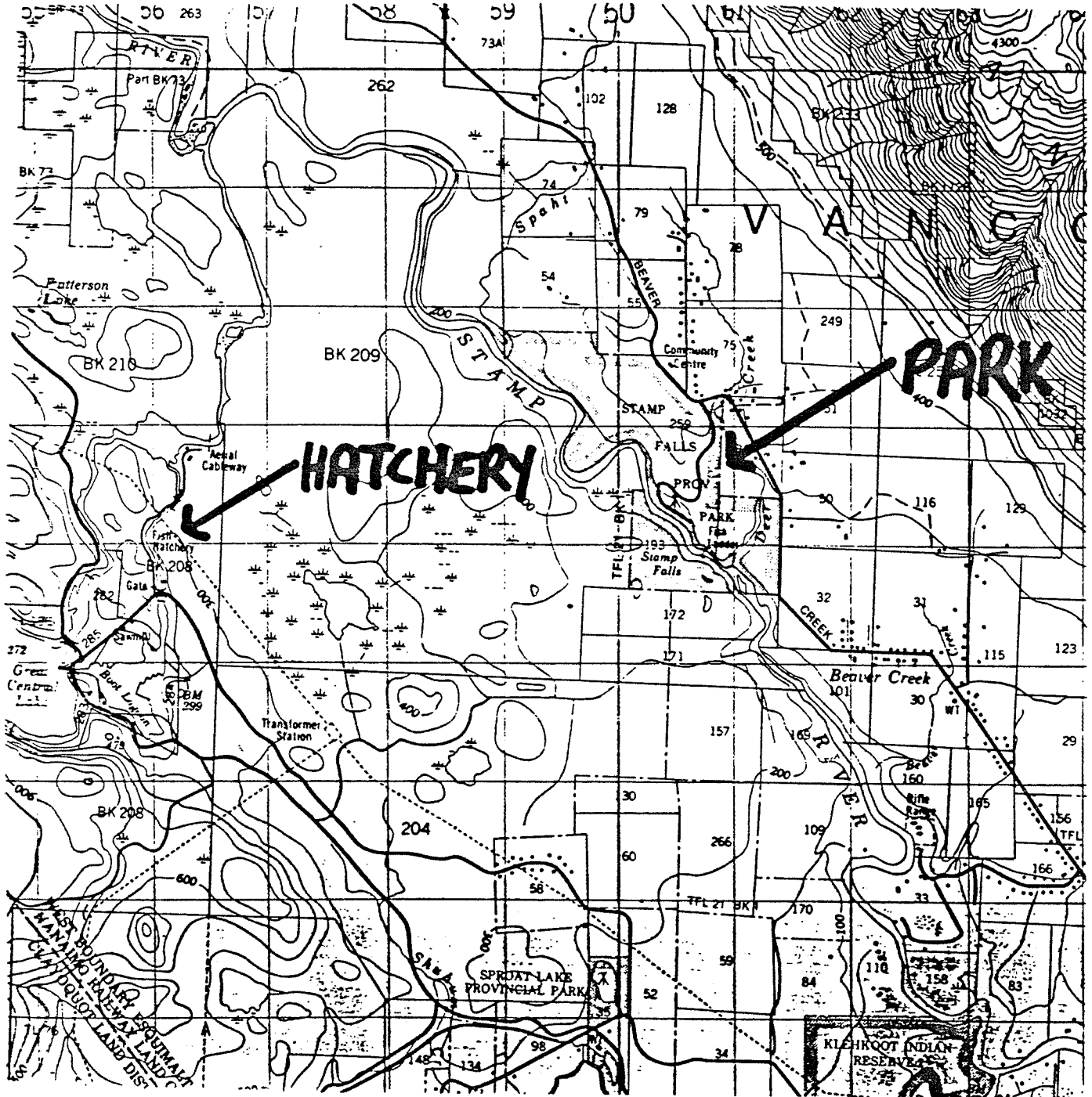
Other wildlife viewing opportunities mentioned in this plan are not unique to the area.

Figure 4. Map showing locations of interpretive signs to be added in the park.



Stamp Falls Wildlife Viewing Plan

Figure 5. Relative locations of Stamp Falls Provincial Park and the Robertson Creek Hatchery.



G. Interpretive Themes

Stamp Falls Provincial Park is an excellent location for nature interpretation, based on the salmon run. According to the Vancouver Island Regional and Interpretation Information Plan (1979), this park does not warrant a major facility or a staffed program. Its identified natural features were its geology, waterfalls, and big trees. The park was classified as a Level 4 park for nature interpretation, limiting interpretation to notice boards and pamphlets. Salmon viewing was not included in this assessment and perhaps the status of Stamp Falls within this plan should be reviewed.

There is a strong need for nature interpretation in the park, which should be limited to signs at this time. A brochure may be considered for the future.

Several interpretive signs are recommended for the park, all of which should be free-standing porcelain enamel. One exception is the interpretive sign mentioned previously under 'Signage' (p. 15). The signs and their locations are described below. A map showing the sign locations is presented in Figure 5.

- 1) Park Entrance (35 x 38"): a porcelain enamel sign on the Type 1 shelter at the park entrance (mentioned on p. 15) explaining the salmonid enhancement program and the role of parks; the contributions of the Port Alberni Salmon Festival Society should also be acknowledged
- 2) Falls Viewpoint (24 x 36"): an explanation of salmon migration, including a map of the Stamp River showing the migration route to Great Central Lake. The Pacific lamprey should also be discussed
- 3) Upstream Exit of Fish Ladder (24 x 36"): a cut-away view of the ladder, an explanation of how it works (the 2 entrances and the steps) and the history of its construction; this sign should be placed high enough on the trail to avoid the flooding of the ladder area which occurs occasionally
- 4) Lower Pool Viewpoint (24 x 36"): a description of the range and natural history of the salmon and steelhead in the river; the second (high water) entrance to the fish ladder is visible from here and should also be mentioned in connection with the operation of the fish

ladder; care should be taken not to obstruct visibility with this sign

Most people would not generally wander beyond the fish ladder. An additional directional sign saying "This Way to Pool Viewpoint" should be placed on the trail next to the fish ladder.

The interpretive signs are by far the most effective method of enhancing the wildlife viewing potential in this park, and address a major omission in people's experience of the park. A program with an interpreter visiting the park once a week during the summer may be considered for the future.

H. Viewing Feature Sensitivity

The salmon in Stamp Falls Provincial Park are not particularly sensitive and would not be disturbed by the viewing use described in this plan. Viewing the salmon should not cause a problem because viewers are on the periphery of the salmon's habitat. Similarly, the forest would not be disturbed by people using the roads and trails.

Vehicle traffic may be of some concern. During the drier summer months there may be considerable dust coming off the road to the campground and parking lot. Paving the road would ensure minimal visual impact on vegetation and the general park environment to dust.

I. Limitations to Viewing Use and User Capacity

I.1 Day Use

The present park usage, along with reasonable expected increases in attendance, would not have a detrimental effect on the wildlife and natural features. However, 18 parking spaces are insufficient, a problem identified by visitors in the past. The number of parking spaces should be increased to 36 (as indicated in the 'Facilities' section of this plan. The latter would be easily accomplished by providing spaces on the opposite side of the lot with minimal construction.

A major limitation is safety. The fencing at the cliff edge along the trail to the fish ladder is incomplete. Also, the grating over the fish ladder is in disrepair; there are gaps between the grates and the concrete frame which are normally filled with wood, but this is missing in many places. In

addition, the grate at the end of the fish ladder by the tunnel has bars spaced 20 cm apart, large enough for a young child to pass through. The current levels of day use already indicate that people may be crowded, forcing them into unsafe situations, and limiting their ability to supervise children.

I.2 Campground

Campground facilities are adequate at the moment. Only in August is usage high enough to suspect an inadequate number of camping spots.

It is recommended that the campground usage in July and August over the next few years be closely monitored. It may be necessary to increase the number of camping spots in the near future.

J. User and Facility Management

The main concern for visitor management in protecting the major viewing feature (salmon) is to deter illegal fishing. This function is best accomplished by Fisheries Officers.

However, it is recommended that the far end of the fence behind the fish ladder be extended another 30 m to include the viewpoint of the island, and close off the end of the trail. Steps should also be installed up to this viewpoint. This spot makes the pools below, which are a common site for illegal fishing, easily visible and may deter this use.

K. Wildlife and Habitat Management

K.1 Viewing Window in Fish Ladder

The public would enjoy viewing the salmon while they are in the fish ladder. There is an opportunity to place such a window in the ladder, either on the side of the upstream exit (some excavation and step construction would be required), or on the side of the last step. The DFO should be contacted to discuss such a possibility, and an engineering study may be necessary to determine if this is possible.

Although a window would be an attractive feature, it might not be feasible in this case because there are many bubbles in the water from turbulence, and the area is poorly lit. It would also be very costly to install. Nevertheless, the possibility should be investigated because of its benefit to

wildlife viewing. If a window is installed it should have appropriate signage next to it - species identification and perhaps additional life history notes.

K.2 Land Acquisition

The land on the opposite bank along part of the Stamp River in the park is not in the park lands. It is desirable to acquire a 50m buffer strip in that area to act as a visual backdrop for the park. This would protect the visual integrity of the area from any future development of this privately owned property.

L. Public Safety

There are numerous public safety concerns in the park and it is surprising that there have not already been some serious mishaps. The hazards and their remedies are itemized below.

L.1 Fencing

- 1) the fencing along the cliff between the parking lot and falls viewpoint is incomplete - the two segments of fencing need to be joined
- 2) some of the fencing on the trail beyond the fish ladder is loose - this should be secured
- 3) the outer upper edge of the fish ladder is not fenced; someone could easily fall over into the swiftly running water and rocks below - this edge must be fenced (a rail fence is recommended for aesthetics, and to resist damage from debris)

L.2 Fish Ladder

- 1) the grids over the fish ladder have gaps between them and the cement frame - these should be filled with wooden dividers
- 2) the width between the bars of the grate covering the tunnel through the outcropping allows for the passage of a child (leading to a 5 m drop into a pool below - the spacing should be reduced with additional bars

L.3 Debris

- 1) there is some rusted piping in the ground beside the trail on the way down to the fish ladder - this should be removed
- 2) there is some rebar fencing in the water below the falls viewpoint - however, this serves to catch boulders and debris coming down the river, preventing a jam in the falls; it should not be removed but perhaps needs repair

L.4 Bank Stabilization

- 1) the bank at the top of the hill overlooking the trail on the approach to the fish ladder appears unstable - a reinforcing wall should be constructed

L.5 Trails

- 1) the trail down to Deer Creek and the bridge over the creek are unsafe - steps should be installed, and a new bridge built

M. Marketing

The salmon run on the Stamp River has already been identified as an excellent opportunity for wildlife viewing. People can be guaranteed a good view of migrating salmon if they come to the falls from late June to late November. The most effective promotional opportunities are as follows.

M.1 Port Alberni Chamber of Commerce

The Port Alberni Chamber of Commerce should be encouraged to include information about the salmon run in its written materials promoting tourism in the area. It may be necessary to produce and provide them with a one-panel flyer (Pro-4) dedicated to this purpose.

M.2 Print Media

An annual media tour for outdoor writers should be arranged. Authors of wildlife and recreation articles in newspapers and magazines from Port Alberni, Nanaimo, Victoria, and Vancouver should be invited to view the beginning of the salmon run each year with a naturalist. This would encourage them to promote the event in their publications.

M.3 Park Publications and Brochures

The summer salmon migration in Stamp Falls Provincial Park should be highlighted in park publications and brochures promoting tourist opportunities in the Provincial Park system. Other ministries promoting tourism on Vancouver Island should be encouraged to do the same. In particluar, Pacific Rim and Parksvilles tourist information outlets should at least be provided with a promotional sign.

N. Research and Inventory

The park has been used extensively in the past for salmon run enumeration, research and enhancement by the DFO, and this will continue. The DFO also does research on the Pacific lamprey in this area. Additional research was limited to two collecting permits, one to R.Y. Edwards (1971) and another to R. Ritcey (1962). The former was unaware that he ever possessed such a permit; R. Ritcey was not contacted.

N.1 Viewing Use

There is no site-specific detailed information about the flora and fauna in the park. A comprehensive biophysical inventory and wildlife survey may reveal additional viewing opportunities. This could be accomplished at minimal cost considering the relatively small size of the park.

N.2 Management of Use

As mentioned previously, consultation should occur with the DFO and an engineering study be conducted to determine the feasibility of installing a viewing window in the side of the fish ladder. If the window is possible and desirable, it should be constructed to enhance wildlife viewing.

N.3 Relationship Between Viewing Use and Wildlife and Habitats

Day attendance figures in the park appear to have stabilized between 10,000-11,000 parties from 1986-1988. The park therefore provides a unique opportunity to determine if the measures taken to increase wildlife viewing opportunities have had a positive impact on the number of people using the park.

O. Development Plan and Budget

The following is an itemized list of all improvements recommended in this plan to ensure public safety, increase wildlife viewing opportunities, and accommodate visitor usage. The safety items related to fencing and the fish ladder should be implemented immediately since real hazards exist, with or without the wildlife viewing plans.

It may be possible to share the costs of some items of mutual concern with other agencies, which are identified. Otherwise the costs are to be assumed by the B.C. Ministry of Parks. The future development plans are summarized in Table 3.

Table 3. Summary of possible future development plans for Stamp Falls Provincial Park.

Phase I 1990-1991

- 1) Interpretation Signs
- 2) Safety Improvements (Fencing, Fish Ladder, Debris Removal)
- 3) Engineering Study (Fish Ladder Window)
- 4) Information Panel (Marketing)

Phase II 1991-1992

- 1) Facilities Improvements (Roads, Trails, Parking Lots)
- 2) Safety Improvements (Bank Stabilization)
- 3) Fish Ladder Window Installation?

Phase III 1992-1993

- 1) Inventory of Flora and Fauna

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O.1 1990-1991

Item	Estimated Cost	Sharing Agency
Interpretation :Park Entrance	\$6,000	
:Parking Lot	400	
:Falls Viewpoint	2,500	Festival
:Fish Ladder	2,500	DFO, MOE
:Lower Pool Viewpoint	2,500	DFO, MOE
:Sign Installation	3,000	DFO, MOE
Road Sign :2 km Park Approaches	600	
Safety :Fencing	5,000	
:Fish Ladder	500	DFO
:Debris Removal	200	
Engineering Studies :Fish Ladder Window	2,000	DFO
Marketing :Information Panel for Chamber of Commerce	<u>1,000</u>	
	TOTAL \$26,200	

O.2 1991-1992

Item	Estimated Cost	Sharing Agency
Facilities :Gravel for Roads and Trails, including labour	4,000?	
:Parking Lot Enlargement	3,000?	
Safety :Bank Stabilization	2,000?	
Interpretation :Installation of Fish Ladder Window	<u>unknown</u>	DFO
	TOTAL \$9,000+	

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O.3 1992-1993

Item	Estimated Cost	Sharing Agency
Research :Biophysical Inventory and Wildlife Survey	\$ 1,500	

O.4 Future Considerations

- 1) purchase of additional lands to create a viewing buffer
- 2) promotion of wildlife viewing of Pacific lamprey

P. References

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Q. Persons Consulted

B.C. Assessment Authority, Port Alberni

Office Staff 724-3271

B.C. Forest Service, Port Alberni District Office 724-9205

Dave Crookshank, Special Tenures Forester

B.C. Ministry of the Environment

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B.C. Provincial Museum

Wayne Campbell, Curator, Vertebrate Biology 387-2483
Rob Cannings, Curator, Entomology 387-6034

B.C. Provincial Parks

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Bill Merilees, Visitor Services Officer

Rick Simmons, Resource Officer

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Anne Holt 723-3006
Sandy McRuer 724-9205

Port Alberni Chamber of Commerce

Office Staff 724-6535

Port Alberni Marina

Marilyn Murphy, Operator 723-8022

Port Alberni Salmon Festival Society

Chris Duncan, President 724-0655

Robertson Creek Fish Hatchery

Mike Wolf, Technical Staff 724-6521

R. Appendices

APPENDIX A. Birds which may be found in Stamp Falls Provincial Park (adapted from: An Annotated List of Birds of Southern Vancouver Island by A.R. Davidson, with comments by Sandy McRuer).

Canada Goose	<u>Branta canadensis</u>
Mallard	<u>Anas platyrhynchos</u>
American Widgeon	<u>Mareca americana</u>
Greater Scaup	<u>Aythya marila</u>
Lesser Scaup	<u>Aythya affinis</u>
Common Goldeneye	<u>Bucephala clangula</u>
Bufflehead	<u>Bucephala albeola</u>
Harlequin	<u>Histrionicus histrionicus</u>
Common Merganser	<u>Mergus merganser</u>
Northern Goshawk	<u>Accipter gentilis</u>
Sharp-shinned Hawk	<u>Accipter striatus</u>
Cooper's Hawk	<u>Accipter cooperii</u>
Red-tailed Hawk	<u>Buteo jamaicensis</u>
Bald Eagle	<u>Haliaeetus leucocephalus</u>
Osprey	<u>Pandion haliaetus</u>
Peregrine Falcon	<u>Falco peregrinus</u>
Merlin	<u>Falco columbarius</u>
American Kestrel	<u>Falco sparverius</u>
Blue Grouse	<u>Dendragapus obscurus</u>
Ruffed Grouse	<u>Bonasa umbellus</u>
California Quail	<u>Callipepla californica</u>
Spotted Sandpiper	<u>Actitis macularia</u>
Common Snipe	<u>Gallinago gallinago</u>
Glaucous-winged Gull	<u>Larus glaucescens</u>
Herring Gull	<u>Larus argentatus</u>
California Gull	<u>Larus californicus</u>
Ring-billed Gull	<u>Larus delawarensis</u>
Mew Gull	<u>Larus canus</u>
Band-tailed Pigeon	<u>Columba fasciata</u>
Western Screech-owl	<u>Otus kennicottii</u>
Great Horned Owl	<u>Bubo virginianus</u>
Northern Saw-whet Owl	<u>Aegolius acadicus</u>
Common Nighthawk	<u>Chordeiles minor</u>
Vaux's Swift	<u>Chaetura vauxi</u>
Rufous Hummingbird	<u>Selasphorus rufus</u>
Belted Kingfisher	<u>Ceryle alcyon</u>
Northern Flicker	<u>Colaptes auratus</u>
Pileated Woodpecker	<u>Dryocopus pileatus</u>
Red-breasted Sapsucker	<u>Sphyrapicus ruber</u>
Hairy Woodpecker	<u>Dendrocopus villosus</u>

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Downy Woodpecker	<u>Dendrocopus pubescens</u>
Western Flycatcher	<u>Empidonax difficilis</u>
Western Wood Peewee	<u>Contopus sordidulus</u>
Olive-sided Flycatcher	<u>Contopus borealis</u>
Violet Green Swallow	<u>Tachycineta thalassina</u>
Northern Rough-winged Swallow	<u>Stelgidopteryx serripennis</u>
Barn Swallow	<u>Hirundo rustica</u>
Cliff Swallow	<u>Petrochelidon pyrrhonota</u>
Steller Jay	<u>Cyanocitta stelleri</u>
Common Raven	<u>Corvus corax</u>
Northwestern Crow	<u>Corvus caurinus</u>
Chestnut-backed Chickadee	<u>Parus rufescens</u>
Bushtit	<u>Psaltriparus minimus</u>
Red-breasted Nuthatch	<u>Sitta canadensis</u>
Brown Creeper	<u>Certhia americana</u>
American Dipper	<u>Cinclus mexicanus</u>
Winter Wren	<u>Troglodytes troglodytes</u>
American Robin	<u>Turdus migratorius</u>
Varied Thrush	<u>Ixoreus naevius</u>
Hermit Thrush	<u>Catharus guttatus</u>
Swainson's Thrush	<u>Catharus ustulatus</u>
Golden-crowned Kinglet	<u>Regulus satrapa</u>
Ruby-crowned Kinglet	<u>Regulus calendula</u>
Cedar Waxwing	<u>Bombycilla cedrorum</u>
Northern Shrike	<u>Lanius excubitor</u>
Hutton's Vireo	<u>Vireo huttoni</u>
Solitary Vireo	<u>Vireo solidarius</u>
Warbling Vireo	<u>Vireo gilvus</u>
Orange-crowned Warbler	<u>Vermivora celata</u>
Yellow Warbler	<u>Dendroica petechia</u>
Yellow-rumped Warbler	<u>Dendroica coronata</u>
Townsend Warbler	<u>Dendroica townsendi</u>
MacGillivray Warbler	<u>Oporonis tolmei</u>
Wilson's Warbler	<u>Wilsonia pusilla</u>
Western Tanager	<u>Piranga ludoviciana</u>
Black-headed Grosbeak	<u>Pheucticus melanocephalus</u>
Evening Grosbeak	<u>Coccothraustes vespertinus</u>
Purple Finch	<u>Carpodacus purpureus</u>
Pine Siskin	<u>Carduelis pinus</u>
Red Crossbill	<u>Loxia curvirostra</u>
Rufous-sided Towhee	<u>Pipilo erythrophthalmus</u>
Dark-eyed Junco	<u>Junco hyemalis</u>
White-crowned Sparrow	<u>Zonotrichia leucophrys</u>
Fox Sparrow	<u>Passerella iliaca</u>
Song Sparrow	<u>Melospiza melodia</u>

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APPENDIX B. Mammals of Stamp Falls Provincial Park (adapted from: Mammals - The Vancouver Island Box Score by William Merilees). Bats are not included.

wandering shrew
navigator shrew
red squirrel
American beaver
deer mouse
Townsend's vole
wolf
black bear
raccoon
marten
short-tailed weasel
mink
river otter
cougar
black-tailed deer

Sorex vagrans
Sorex palustris
Tamiasciurus hudsonicus
Castor canadensis
Peromyscus maniculatus
Microtus townsendii
Canis lupus
Ursus americanus
Procyon lotor
Martes americana
Mustela erminea
Mustela vison
Lutra canadensis
Felis concolor
Odocoileus hemionus

APPENDIX C. Amphibians and Reptiles of Stamp Falls Provincial Park (adapted from B.C. Provincial Museum Handbooks 44 and 45).

AMPHIBIANS

rough skinned newt	<u>Taricha granulosa</u>
long-toed salamander	<u>Ambystoma macrodactylum</u>
northwestern salamander	<u>Ambystoma gracile</u>
western red-backed salamander	<u>Plethodon vehiculum</u>
ensantia	<u>Ensantia eschscholtzi</u>
clouded salamander	<u>Aneides ferreus</u>
western toad	<u>Bufo boreas</u>
Pacific treefrog	<u>Hyla regilla</u>
red-legged frog	<u>Rana aurora</u>
bullfrog	<u>Rana catesbiana</u>
green frog	<u>Rana clamitans</u>

REPTILES

western terrestrial	
garter snake	<u>Thamnophis elegans</u>
northwestern garter snake	<u>Thamnophis ordinoides</u>
common garter snake	<u>Thamnophis sirtalis</u>
northern alligator lizard	<u>Elgaria coerulea</u>

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APPENDIX D. Common plants of Stamp Falls Provincial Park, based on typical plants found in a mature Douglas-fir forest (adapted from: The Natural History of Stanley Park by the Vancouver Natural History Society). Mosses are not considered. Some groups may be conservatively represented.

TREES

vine maple	<u>Acer circinatum</u>
bigleaf maple*	<u>Acer macrophyllum</u>
red alder*	<u>Alnus rubra</u>
paper birch	<u>Betula papyrifera</u>
Sitka spruce*	<u>Picea sitchensis</u>
black cottonwood*	<u>Populus balsamifera</u>
Douglas-fir*	<u>Pseudotsuga menziesii</u>
willow	<u>Salix spp.</u>
western yew*	<u>Taxus brevifolia</u>
Sitka mountain ash	<u>Sorbus sitchensis</u>
western redcedar*	<u>Thuja plicata</u>
western hemlock*	<u>Tsuga heterophylla</u>

SHRUBS

salal*	<u>Gaultheria shallon</u>
salmonberry*	<u>Rubus spectabilis</u>
Douglas' spirea (hardhack)	<u>Spirea douglasii</u>
red huckleberry*	<u>Vaccinium parvifolium</u>
Oregon grape*	<u>Berberis sp.</u>
Scotch broom*	<u>Cytisus scoparius</u>
Evergreen blackberry*	<u>Rubus laciniatus</u>
snowberry*	<u>Symphoricarpos albus</u>
wild rose*	<u>Rosa sp.</u>

*observed during brief survey, December 1989

HERBS

lady fern
deer fern
Siberian miner's lettuce
bunchberry
western bleeding-heart
spiny wood fern*
fireweed
sweet-scented bedstraw
largeleaved avens*
false lily-of-the-valley
licorice fern*
sword fern*
clasping twisted stalk
three-leaved foam flower
piggy-back plant*
horsetail*
wild lettuce*
vanilla leaf*

Athyrium felix-femina
Blechnum spicant
Claytonia (Monita) sibirica
Cornus canadensis
Dicentra formosa
Dryopteris expansa
Epilobium angustifolium
Galium triflorum
Geum macrophyllum
Maianthemum dilatatum
Polypodium glycyrrhiza
Polystrichum munitum
Streptopus amplexifolius
Tiarella trifoliata
Tolmicia menziesii
Equisetum sp.
Lactuca sp.
Achlys triphylla