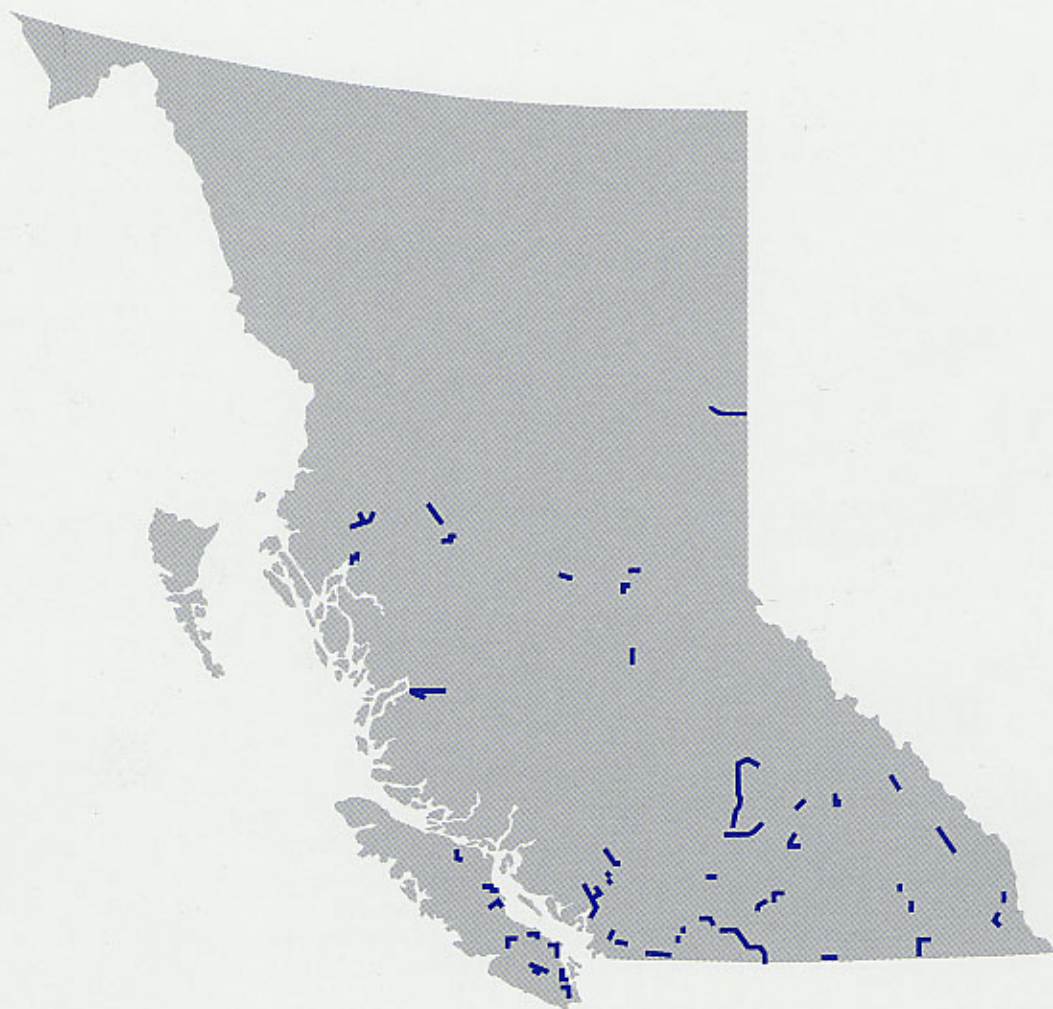


C A N A D A - B R I T I S H C O L U M B I A

A G R E E M E N T R E S P E C T I N G

Floodplain Mapping



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STEERING COMMITTEE
CANADA - BRITISH COLUMBIA AGREEMENT
RESPECTING FLOODPLAIN MAPPING

Canada

K. Johnstone
L. Adamache

British Columbia

J.S. Mattison
R.W. Banera

Dear Mr. Minister:

The Steering Committee responsible for the administration of the Agreement Respecting Floodplain Mapping in the Province of British Columbia herewith submits its 10th Annual Report for the year ending March 31, 1998, in accordance with the requirements of the Agreement signed December 3, 1987.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'J.S. Mattison', written over a horizontal line.

J.S. Mattison, Chair
Steering Committee



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1.0 INTRODUCTION

The 10-year Canada-British Columbia Agreement Respecting Floodplain Mapping was signed on December 3, 1987, to provide information on the extent of floodplain areas within British Columbia. The agreement provides for the designation or interim designation by the Minister of the Environment for Canada and the Minister of Environment, Lands and Parks for British Columbia of the mapped floodplains. The agreement also provides for the preparation and distribution of information about the floodplains to zoning authorities, government agencies and the general public.

The first five years of cost sharing under the agreement came to an end in March 1993. An amending agreement to provide for an additional five years of cost shared funding was signed by the Ministers on August 2, 1994. The amendment provided for the gradual phasing down of the program in British Columbia and for the review of existing projects to maintain their usefulness. The designation powers of the Ministers remain in effect until termination of the agreement on March 31, 2003.

This report summarizes the progress made during the tenth year of the agreement. Up to March 31, 1998 expenditures under the program amounted to \$7,362,083. A total of eighty-nine areas will have been designated or interim designated by the Ministers under the terms of the agreement by September 30, 1998. A significant portion of the technical work under the agreement has been assigned to the private sector under contract.



2.0 ORGANIZATION

Under the terms of the agreement, a four member steering committee was established to be responsible for its general administration and to provide overall coordination and direction of the floodplain mapping program. A technical coordinator and secretary to the steering committee was also appointed. The steering committee reports through its chair to the Minister of Environment, Lands and Parks for British Columbia and to the Minister of the Environment for Canada.

Engineering study contracts are managed by the Resources Inventory Branch, Ministry of Environment, Lands and Parks. The steering committee assigned coordination between the Parties of the public information program under the agreement to selected staff members.

Figure 1 is an illustration of the organization under the agreement.



3.0 STEERING COMMITTEE MEMBERSHIP

The steering committee met on April 16, 1997 and on January 21 and April 7 in 1998. The committee consists of two federal and two provincial members as follows:

Canada

(to July 11, 1997)

C.H. Pharo, Manager
Canadian Wildlife Service
Environmental Conservation
Pacific and Yukon Region
Environment Canada
North Vancouver, B.C.

(from July 11, 1997)

Kirk Johnstone, Manager
Atmospheric and Aquatic Sciences Div.
Environment Canada
Vancouver, B.C.

(from July 11, 1997)

L.N. Adamache, Senior Advisor
Atmospheric and Aquatic Sciences Div.
Conservation and Protection
Environment Canada
Vancouver, B.C.

British Columbia

J.S. Mattison (Chair)

Director, Resources Inventory Branch
Environment and Lands Headquarters
Division
Ministry of Environment, Lands & Parks
Victoria, B.C.

(to August 21, 1997)

R.W. Balsler
TOPO/GIS Section Manager
Surveys and Resource Mapping Branch
Ministry of Environment, Lands & Parks
Victoria, B.C.

(from August 21, 1997)

N.G. Banera, Manager
Water Management Branch
Public Safety Section
Ministry of Environment, Lands & Parks
Victoria, B.C.

R.W. Nichols, P.Eng., Resources Inventory Branch, Ministry of Environment, Lands and Parks, was appointed by the Ministers as technical coordinator and secretary to the steering committee.



4.0 1997/98 PROGRAM

4.1 Highlights

A total of six projects were designated or interim designated by the Ministers during 1997/98.

An additional three projects were proposed for recommendation by the steering committee to the Ministers for designation or interim designation by September 30, 1998.

Engineering project studies were completed in five project areas. River high water mark surveys were completed for four project areas.

The program information available for access on the World Wide Web was updated. The internet address is:

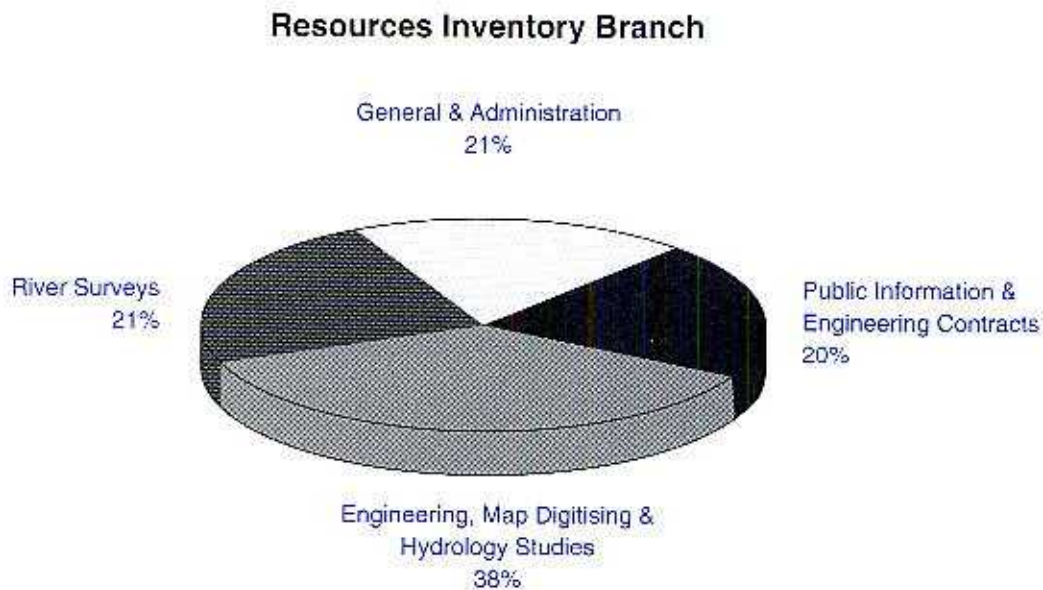
<http://www.env.gov.bc.ca/wat/fpm/fpmhome.html>

The report on "Guidelines for Reviewing Designated Floodplain Areas in British Columbia" and an "Amending Agreement to the Agreement Respecting Floodplain Mapping in British Columbia", August 30, 1997 Draft, were prepared for the steering committee in 1997/98.

At the 15th meeting of the steering committee held on April 7, 1998 there was no confirmation of federal funding sources to proceed with an agreement amendment.

4.2 Expenditures

Total expenditures for the 1997/98 fiscal year amounted to \$242,988. The federal share of these expenditures was \$121,494. Appendix 1 shows the 1997/98 expenditures by projects. Documentation and records of the expenditures have been examined by auditors in accordance with requirements of the agreement. The 1997/98 expenditures under the program were distributed as follows:



4.3 Public Information

Public information has been ongoing since 1974 as regards the Provincial Floodplain Mapping Program. Federal and provincial ministries, agencies and municipalities affected by the September 1997 designations or interim designations were so informed.

A total of 285 floodplain mapping sheets were distributed based on 67 requests to Crown Publications Inc. and issuance of maps to government agencies and municipalities as a result of designations. Copies of the "Users Guide to Floodplain Mapping" pamphlet were issued with map distribution orders during 1997/98. In addition, numerous "over-the-counter" inquiries related to the Floodplain Mapping Program were processed in federal, provincial and municipal offices throughout the Province.


The Floodplain Mapping Homepage on the internet was updated to reflect the September 1997 designations and the 1997/98 program activities. The homepage was used to obtain program information over 1,800 times during 1997.

4.4 Engineering Studies

Three projects were completed and proposed to the steering committee for designation or interim designation by the Ministers in September 1998 as follows:

	Project	No. of Drawings
A.3.23	Nakusp Area, Arrow Reservoir and Kuskanax Creek	2
A.3.63	Shuswap River	8
A.3.76	Bulkley River	6 *

* interim designation



The floodplain mapping digitising project commenced in June after initial training of Branch staff. In Region 1 (Vancouver Island), a total of 58 sheets were digitised. Work commenced in Region 3 (Southern Interior) and 97 out of the 203 mapping sheets in this Region were completed.

The details of providing this data to the public such as file attributes, use and limitations, save harmless clauses and definitions have not been addressed to date.

A small modeling problem was resolved in 1997/98 for the One-D Arc/Info GIS software development project. The project captures dynamic flood images for communication of flood hazard information to a public audience.

4.5 River Surveys

Office preparation of the high water mark data for the Shuswap River (A.3.63) and the Salmon River (A.3.8) was completed by May 1997 and January 1998, respectively.

High water marks for mapping project reviews were identified by BC Environment staff on the Shuswap River from Mara Lake to Mabel Lake (A.1.16), on the South Thompson River (A.1.18) between Kamloops and Chase and on the Thompson River (A.1.19) at Kamloops (obtained by city staff). The data was identified in June due to significant flood levels which occurred during the 1997 freshet in these areas. The flood level information was surveyed during the



September/October period and included levels on the Kettle and Granby Rivers (A.2.3) obtained with the co-operation of Grand Forks municipal staff.

Eighteen high water ice jam elevations on the Nechako River (A.3.13), identified by Prince George Regional staff in December 1996, were surveyed in May of 1997.

Office preparation of the high water mark data was completed by March 31, 1998.

5.0 DESIGNATIONS

Appendix 2 is a list of the eighty-six floodplain areas designated or interim designated by the Ministers by March 31, 1998. Three additional areas, involving sixteen mapping sheets, are to be designated on September 30, 1998 as indicated in Section 4.4 and Appendix 2.



6.0 AGREEMENT OBLIGATIONS AND FUNDING TO 2003

The Parties have obligations under the agreement which remain in effect until March 31, 2003.

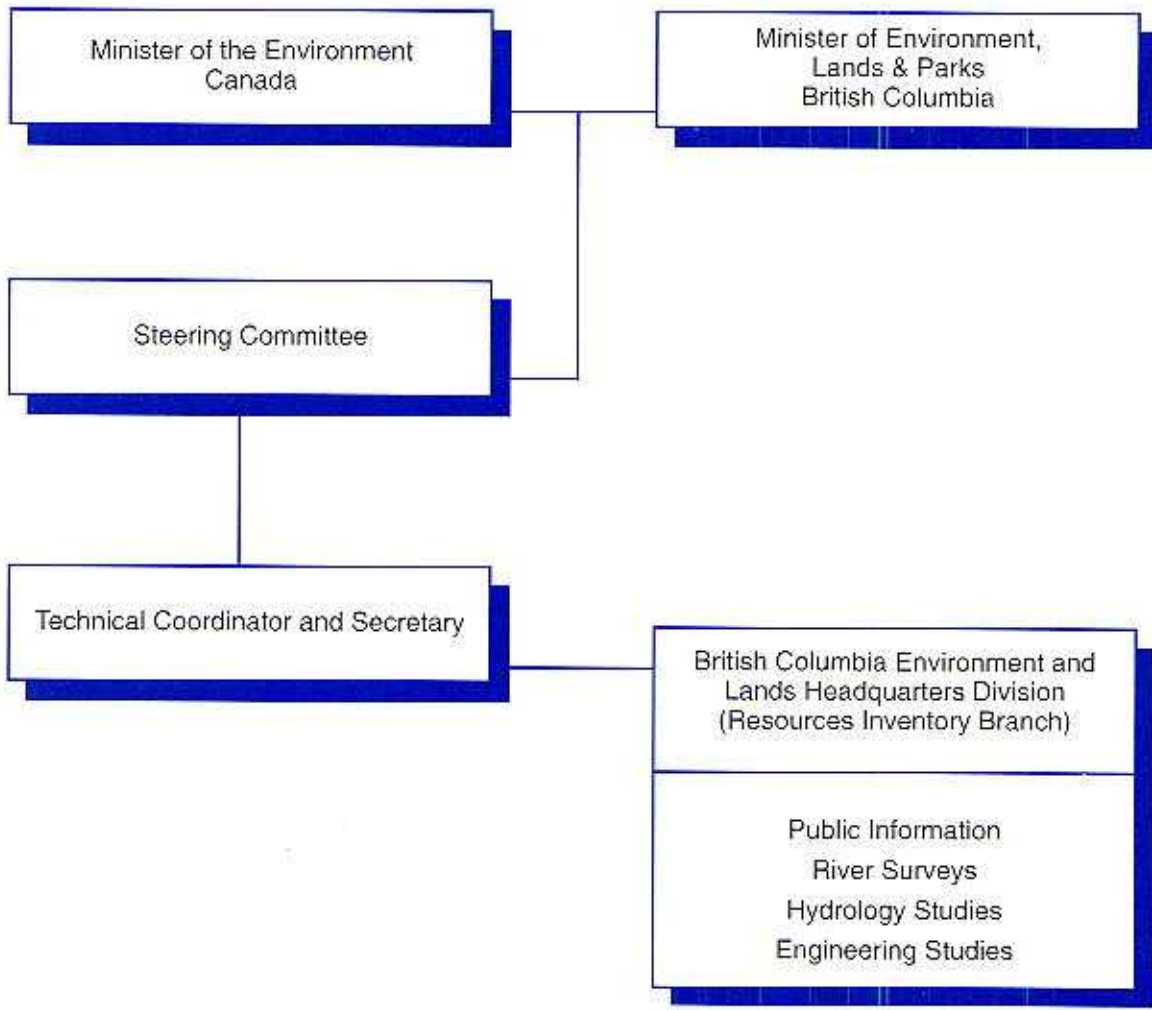
These include designation powers, provisions involving restrictions from further undertakings, discouragement of financial assistance in designated floodplains and the encouragement of local governments to restrict and floodproof new development in a floodplain.

An amending agreement commencing April 1st, 1998 was proposed by the steering committee in seeking the continued participation of the Parties in program funding from 1998 to 2003. The proposal allowed for the continuation of mapping project reviews and the public information program under the articles of the existing agreement. Although the Parties recognized the effectiveness of the floodplain mapping program, financial support was not available to proceed with the steering committee proposal.

Funding beyond the tenth year (1997/98) was shared by the Parties to complete administrative items including annual report preparation and September 1998 designations. Mapping project reviews and public information activities will be held in abeyance pending the availability of future program funding.



Figure 1
ORGANIZATION
CANADA - BRITISH COLUMBIA FLOODPLAIN MAPPING AGREEMENT



Appendix 1
EXPENDITURE SUMMARY 1997/98

PROJECT	TOTAL EXPENDITURE (S)
A.1.16 Shuswap River (Mara Lake to Mabel Lake)	5,255.59
A.1.18/19 South Thompson and Thompson Rivers	7,042.42
A.1.21 Okanagan Lake	8.35
A.3.8 Salmon River (Salmon Arm to Falkland)	6,533.83
A.3.12 Cowichan River	5,596.70
A.3.23 Nakusp Area	8,025.97
A.2.3 Kettle River	13,061.30
A.3.51 Courtenay, Puntledge and Tsolum Rivers	163.13
A.3.56 Little Qualicum River	510.73
A.3.58 Somass River	1,839.43
A.3.63 Shuswap River, Bessette and Duteau Creeks	52,282.67
A.3.67 Chilako River	28.74
A.3.76 Bulkley River	22,827.88
A.3.85 Columbia/Kicking Horse Rivers	411.52
A.3.13 Nechako River	13,208.52
Total Project	136,796.78
General, Administration and Map Digitising	106,190.47
Total Expenditures	242,987.25



Appendix 2 (Page 1 of 3)
DESIGNATED FLOODPLAIN AREAS IN THE PROVINCE OF BRITISH COLUMBIA

	DESIGNATED AREA (December 3, 1978) (From Schedule A.1 of the Agreement)	Issue Date
A.1.1	Chilliwack: Vedder River to Slesse Creek	81-02
A.1.2	Columbia River: Columbia-Windermere Lakes	80-11
A.1.3	Columbia River at Golden	79-02
A.1.4	Columbia River: Windermere Lake-Radium	82-01
A.1.5	Coquitlam River: Coquitlam Lake-Fraser River	76-10
A.1.6	Courtenay River	79-07
A.1.7	Cowichan Lake	84-06
A.1.8	Cowichan & Koksilah Rivers at Duncan	81-05
A.1.9	Eagle River	79-01
A.1.10	Elk River at Fernie	79-05
A.1.11	Elk River at Sparwood	80-03
A.1.12	Kitimat River	82-03
A.1.13	Kootenay River: Kootenay Lake-U.S. Border	81-08
A.1.14	North Thompson River: Kamloops-Vavenby	82-12
A.1.15	Salmon & White Rivers	80-12
A.1.16	Shuswap River: Mara Lake to Mabel Lake	80-06
A.1.17	Skeena River: Lakelse-Terrace-Usk	82-10
A.1.18	South Thompson River: Kamloops-Chase	76-06
A.1.19	Thompson River: Kamloops Area	76-06
A.1.20	Tulameen River: Coalmont-Tulanen	81-04
A.1.21	Okanagan Lake: Westbank to Peachland	82-09
A.1.22	Columbia River at Revelstoke	83-11
A.1.23	Fraser and Nechako Rivers: Prince George	85-09
A.1.24	Kaslo River at Kaslo	84-03
A.1.25	Squamish River	83-10
A.1.26	Goat River	84-09
A.1.27	Mission Creek	84-09
A.1.28	Nanaimo River	84-05
A.1.29	Nechako River at Vanderhoof	84-07
A.1.30	Bulkley and Telkwa Rivers	84-12
A.1.31	Bulkley River at Houston	85-11
A.1.32	Cheakamus River	86-04
A.1.33	Zymoetz (Copper) River	85-06
A.1.34	Englishman River	85-04
A.1.35	Vedder River (Vedder Canal to Vedder Crossing)	85-12

Appendix 2 (Page 2 of 3)
DESIGNATED FLOODPLAIN AREAS IN THE PROVINCE OF BRITISH COLUMBIA

DESIGNATED AREA (SEPTEMBER 30, 1988) (From Schedule A.2 of the Agreement)		Issue Date
A.2.1	Fraser and Quesnel Rivers at Quesnel*	87-05
A.2.5	Shawnigan Lake*	79-09
A.2.7	Coquihalla River at Hope*	85-06
A.2.8	Oyster River*	84-05
A.2.10	Salmon River near Prince George*	86-01
A.2.11	Peace River*	85-12
A.2.12	Fraser River near Hope*	87-07
A.2.13	Crawford Creek	87-06
A.2.15	Bulkley River: Quick Area*	86-11
DESIGNATED AREA		Designation (Issue) Date
A.3.1	Bella Coola River*	89-09
A.3.3	Nicola River - Spences Bridge to Canford*	89-09
	- Canford to Nicola Lake	89-09
A.3.6	Elk River near Elkford*	89-09
A.3.2	Beaver Creek†	90-04
A.3.5	Slocan River	90-04
A.3.10	Campbell/Quinsam Rivers	90-04
A.2.16	Lillooet River	90-09
A.3.48	Williams Lake*	90-09
A.3.29	Lakelse River and Lake	90-09
A.3.51	Courtenay, Pantledge and Isolum Rivers	91-09
A.3.54	Chemainus River	91-09
A.3.49	Seymour River at Seymour Arm	91-09
A.2.9	Alouette and North Alouette Rivers	91-09
A.3.62	Christina Lake*	91-09
A.3.7	Stuart River*	91-09
A.3.39	Salmo River	91-09
A.3.83	Kootenay River-Columbia Lake	91-09
A.3.8	Salmon River (Salmon Arm - Spa Creek)	91-09

* Interim Designation

Appendix 2 (Page 3 of 3)
DESIGNATED FLOODPLAIN AREAS IN THE PROVINCE OF BRITISH COLUMBIA

DESIGNATED AREA		Designation (Issue) Date
A.3.40	Tahsis River	92-09
A.2.3	Kettle and Granby Rivers	92-09
A.3.8	Salmon River (Spa Creek to Falkland)	92-09
A.3.21	Zeballos River*	92-09
A.3.87	Fraser and Quesnel Rivers at Quesnel*	92-09
A.3.9	Okanagan River†	93-09
A.3.50	Whistler Area*	93-09
A.3.16	Bear River at Stewart‡	93-09
A.3.28	Skeena River at Hazelton	94-09
A.3.11	Quatse River at Port Hardy*	94-09
A.3.17	Serpentine-Nicomex Rivers	94-09
A.2.6	Similkameen River (Princeton/Keremeos)	95-09
A.3.45	Seymour River	95-09
A.3.55	Sooke River	95-09
A.3.89/90	Elk River and Michel Creek near Sparwood†	95-09
A.3.31	Bonaparte River (Cache Creek)	96-09
A.3.84	Duncan and Lardeau Rivers	96-09
A.3.69	Naver and Hixon Creeks at Hixon*	96-09
A.3.67	Chilako River‡	97-09
A.3.38	Kettle River	97-09
A.3.56	Little Qualicum River	97-09
A.3.13/92	Fraser and Nechako Rivers	97-09
A.3.58	Somass River	97-09
A.3.12	Cowichan River	97-09
A.3.23	Nakusp Area, Arrow Reservoir and Kuskanax Creek	98-09
A.3.76	Bulkley River‡	98-09
A.3.63	Shuswap River	98-09

* Interim Designation