

APPLICATION FOR ECOLOGICAL RESERVE

1. Legal description of the area (or general "Metes and bounds" description)
  
2. Geographical location (relate to nearest settlement, mountain, river, etc.)  
"Big Bend" Douglas-firs, along the north side of the Fraser River, near the apex of its "big bend" ca. 25 miles N.E. of Prince George.
  
3. Indicate the biogeoclimatic zone of which the reserve is representative.  
  
SBS
  
4. Approximate total acreage.  
  
1,200 acres
  
5. Purpose of the reserve.  
Conservation of outstanding and unique forest vegetation on nutrient-rich substrate with some exceptional specimens of Douglas-fir.
  - (a) Primary (state acreage)  
  
1,200 acres
  - (b) Others if any (state acreage)  
  
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  - (c) Buffer areas (state acreage)  
  
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6. Attach a map and indicate: (a) the perimeters and acreage of the areas detailed in 5 above, and  
(b) indicate the species and total timber volumes in these areas:

Abies lasiocarpa, Betula papyrifera (common), Picea engelmannii,  
P. glauca, x P. glauca x P. engelmannii, P. mariana, Populus tremuloides,  
P. trichocarpa, Pseudotsuga menziesii (frequent old specimens  
 150 ft.+ tall, dbh 50-65"+) (some under attack by bark beetles),  
Tsuga heterophylla (occasional), Pinus contorta

Signature

*V. J. Krajina*  
 V. J. Krajina, R. C. McMinn  
 J. Pojar, Dennis Araki,

*J. Pojar* I.B.P. Surveyor C. Parsons  
 C. Parsons.

INTERNATIONAL BIOLOGICAL PROGRAMME  
SECTION CT : CONSERVATION OF TERRESTRIAL BIOLOGICAL COMMUNITIES

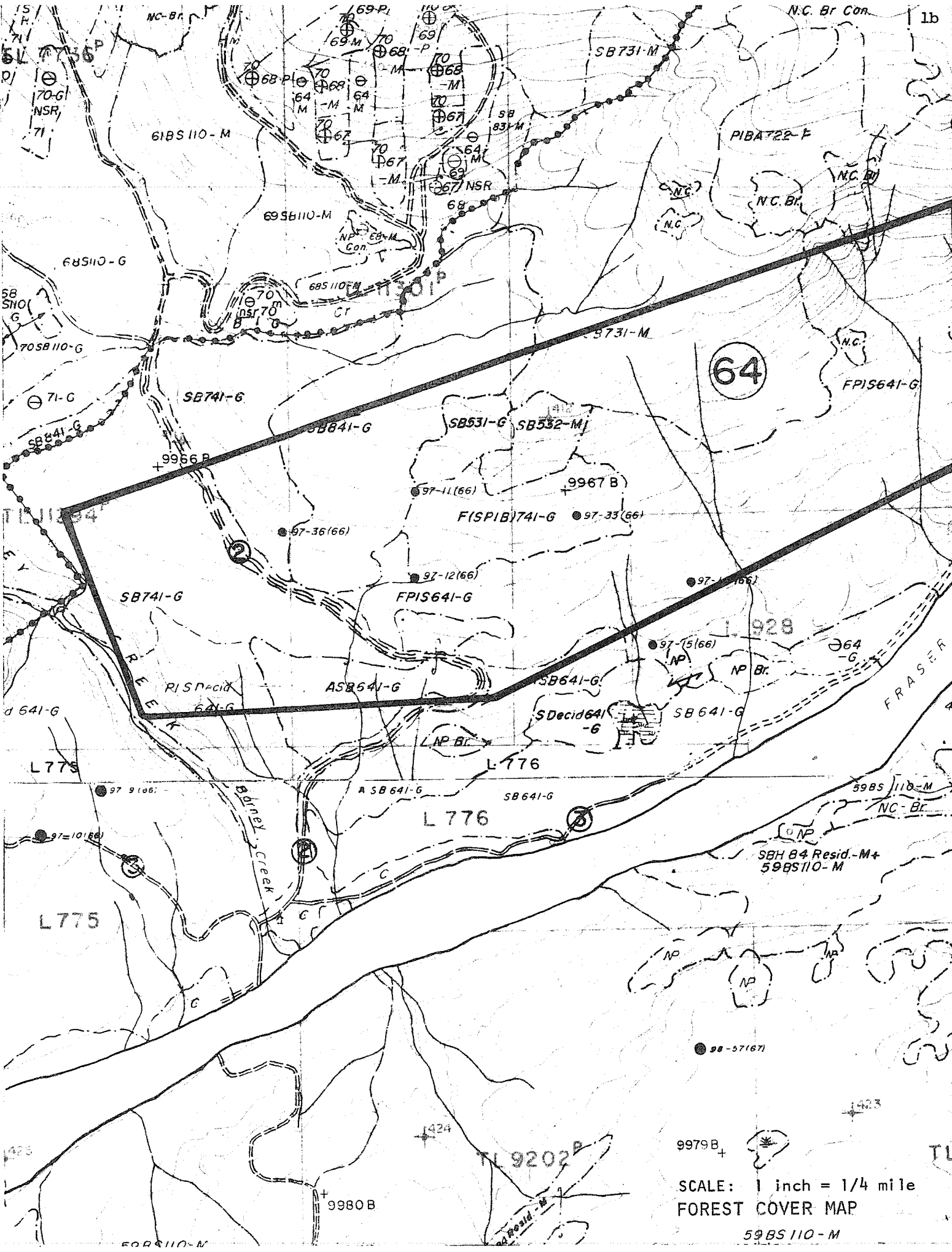
**CHECK SHEET (Mark VII) FOR SURVEY OF IBP AREAS\***  
To be completed with reference to the GUIDE TO THE CHECK SHEET

	Serial Number						
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1.	<p style="text-align: right;">*Dennis Araki</p> <p>1. Name of surveyor *V...J...Krajina, *J...Pojar, *C. Parsons, **R. G. McMinn.....</p> <p>2. Address of surveyor *Dept. of Botany, Univ. of British Columbia Vancouver, B. C. ..... ** Canada Dept. of Environment, Victoria, B. C. .....</p> <p>3. Check Sheet completed (a) on site ..... X ..... (b) from records ..... X .....</p> <p>4. Date Check Sheet completed Oct. 15, 1974 .....</p>	For Data Centre Use only
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2.	<p>1. Name of IBP Area "Big Bend" Douglas-firs, along the north side of the Fraser River, ca. 25 miles N.W. of Prince George.</p> <p>2. Name of IBP Subdivision (or serial letter) S85 .....</p> <p>3. Map of IBP Area* showing boundaries attached? Yes ..... X ..... No .....</p> <p>4. Sketch map of IBP Area*. Please mark direction of north, the scale and grid numbers where applicable.</p> <div style="border: 1px solid black; height: 200px; width: 100%; margin-top: 10px;"></div>	
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\* For "IBP Area", read IBP Area and/or IBP Subdivision.



SCALE: 1 inch = 1/4 mile  
 FOREST COVER MAP

59BS 110-M

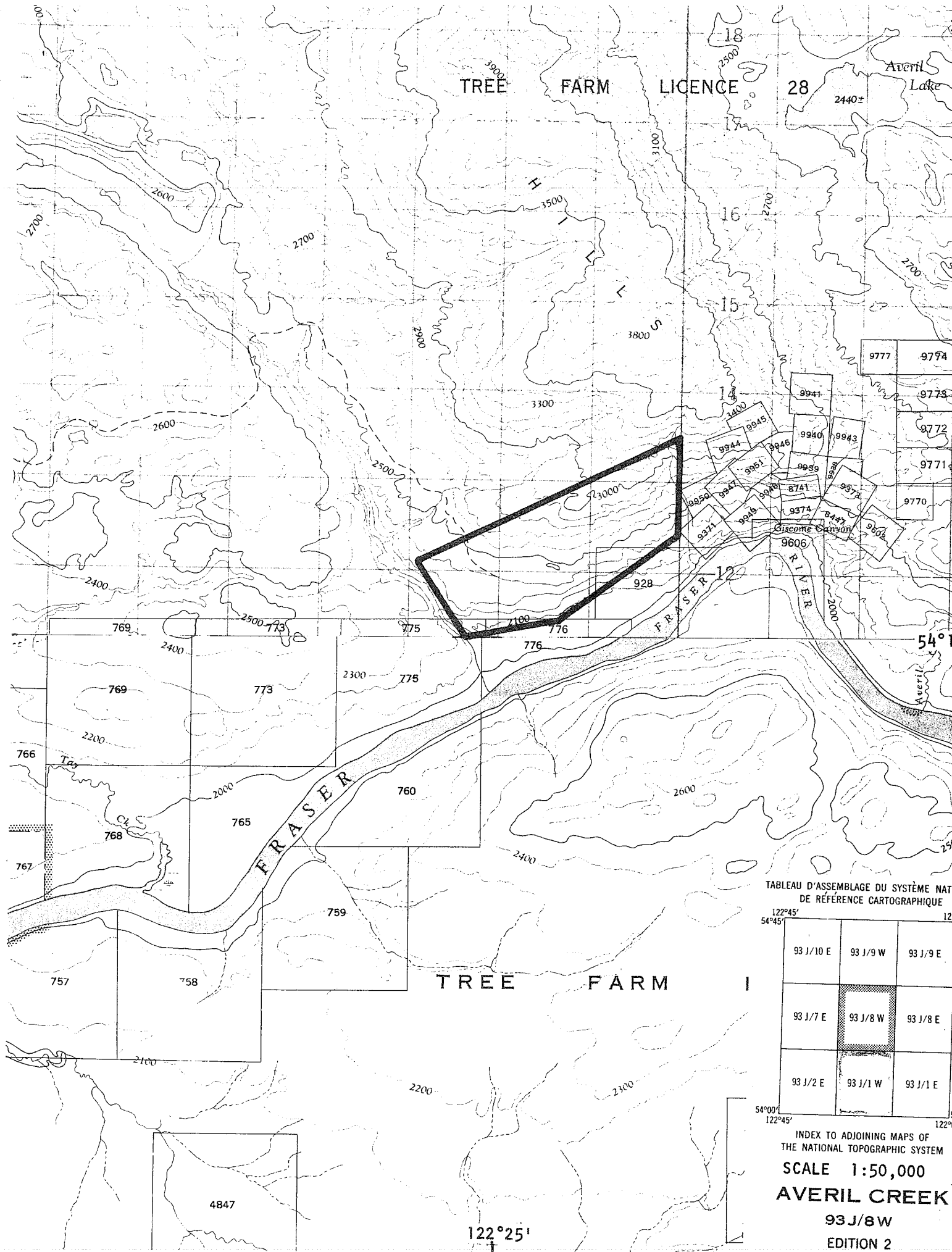


TABLEAU D'ASSEMBLAGE DU SYSTÈME NAT DE RÉFÉRENCE CARTOGRAPHIQUE

122°45'			12
93 J/10 E	93 J/9 W	93 J/9 E	
93 J/7 E	93 J/8 W	93 J/8 E	
93 J/2 E	93 J/1 W	93 J/1 E	
54°00'	122°45'		122°

INDEX TO ADJOINING MAPS OF THE NATIONAL TOPOGRAPHIC SYSTEM  
**SCALE 1:50,000**  
**AVERIL CREEK**  
**93 J/8 W**  
**EDITION 2**

3. Location of IBP Area\*

- 1. Latitude ..... 54° 15-16.1' N Longitude ..... 122° 22.9-25.6' W
- 2. Country ..... Canada
- State or Province ..... British Columbia County ..... Prince George
- (State or Province ..... County .....)

4. Administration

- National 1. Official category ..... Crown Land (T.F.L. 28)
- 2. Address of administration ..... B. C. Department of Lands, Forests, and Water Resources  
Victoria, B. C., Canada

International Class

3.	Included in U.N. List	Rejected from U.N. List	Area with formal conservation status	No formal cons. status
	(A)	(B)	(C)	(D) X

5. Characteristics of IBP Area\*

- 1. Surface area (state units of measurement) ..... 1,200 acres
- 2. Altitude (state units of measurement) Maximum ..... 3,100 ft. (945 m)  
Minimum ..... 2,000 ft. (610 m)

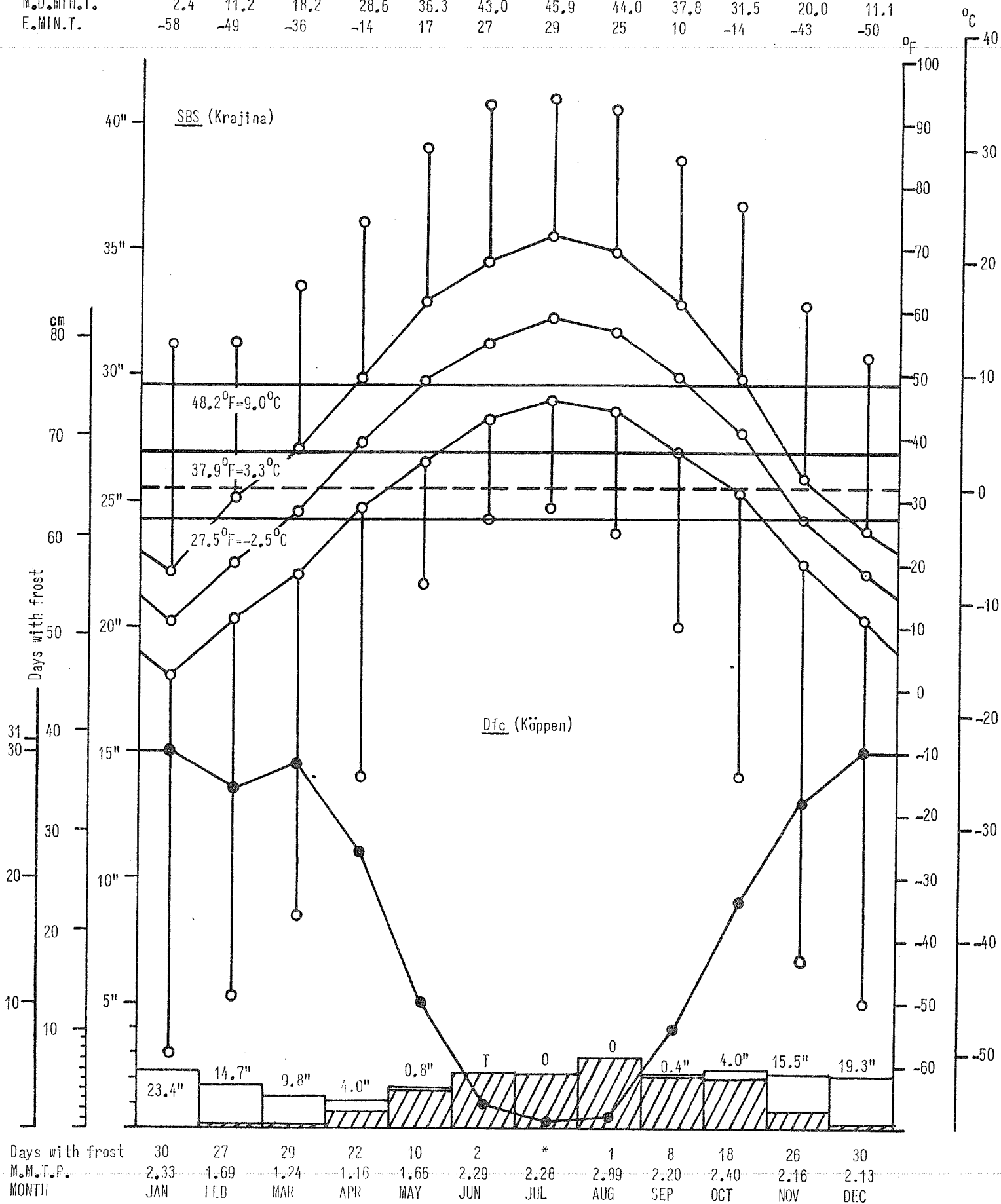
6. Climate

Nearest climatological station :

- 1. Name ..... 1) Prince George airport; 2) Aleza Lake
- 2. Climatological station on IBP Area\*? Yes ..... No X
- 3. If (2) not, distance from edge of IBP Area\* (state units) ..... 1) 26 mi. 2) 18 mi.
- 4. Direction from IBP Area\* ..... 1) S.W. 2) E.S.E.
- 5. Additional data sheet attached? Yes X No .....  
Prince George airport and Aleza Lake

Months above 50°F: 3, below 32°F: 5, A.M.T.P. 24.43", A.M.S.F. 91.9", snow % A.M.T.P.: 37.61, days with frost, yearly: 203.

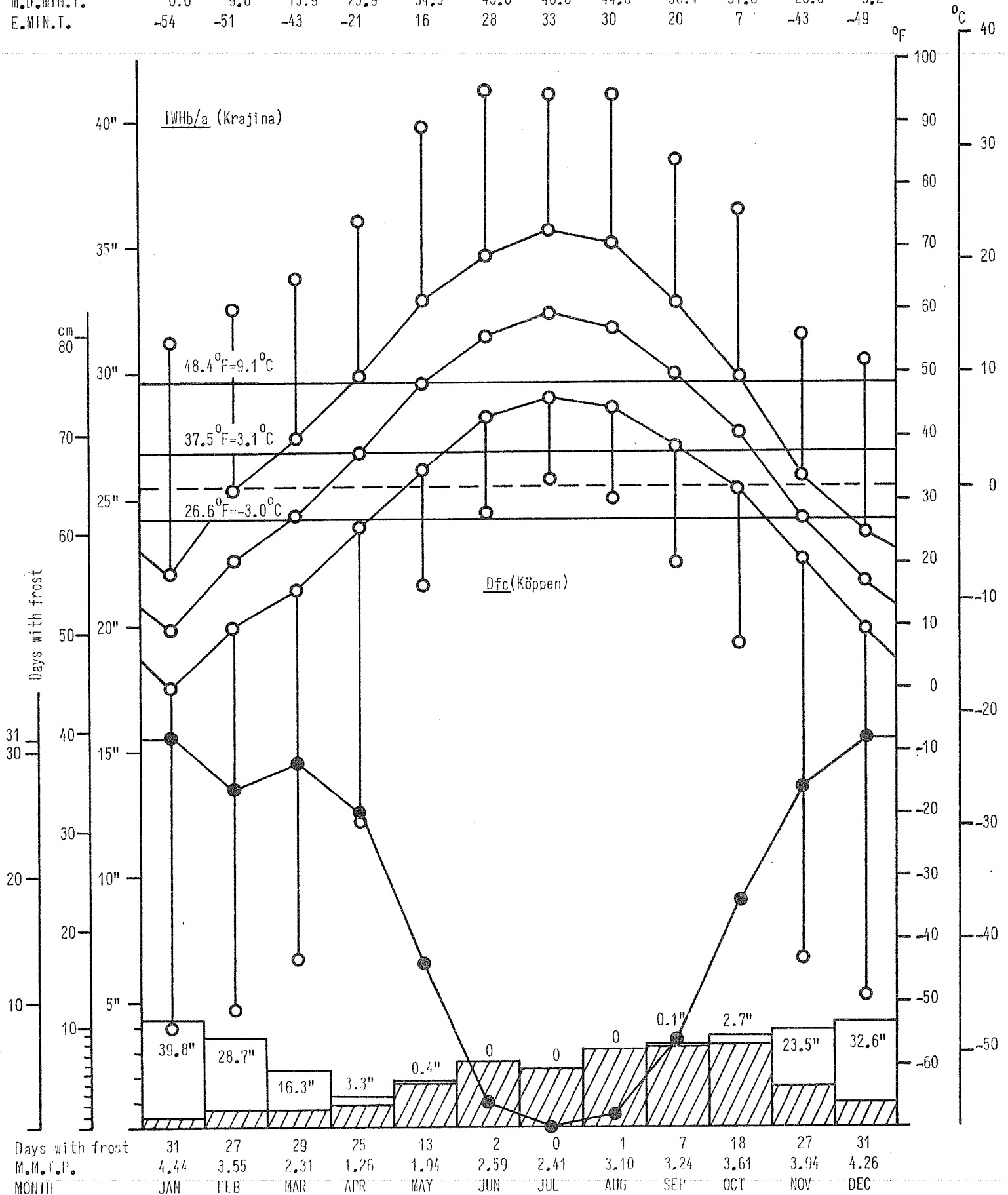
E.MAX.T.	55	55	64	74	86	93	94	92	84	77	61	53
M.D.MAX.T.	19.0	30.5	38.3	49.6	61.6	67.8	71.8	69.4	61.5	49.3	33.8	25.4
M.D.T.	10.7	20.8	28.3	39.1	49.0	55.4	58.9	56.7	49.7	40.4	26.9	18.3
M.D.MIH.T.	2.4	11.2	18.2	28.6	36.3	43.0	45.9	44.0	37.8	31.5	20.0	11.1
E.MIN.T.	-58	-49	-36	-14	17	27	29	25	10	-14	-43	-50



ALEZA LAKE 54°07'N, 122°04'W, 2050' ASL. Record: 15-19 years, adjusted.

Months above 50°F: 3, below 32°F: 5, A.M.T.P. 36.65", A.M.S.F. 147.4", snow % A.M.T.P.: 40.21, days with frost, yearly: 211

E. MAX. T.	55	60	65	74	89	95	94	94	84	76	56	52
M. D. MAX. T.	18.5	31.6	39.3	49.6	61.6	68.3	72.5	70.2	61.2	49.2	33.7	24.9
M. D. T.	9.6	20.7	27.6	37.7	48.1	55.7	59.3	57.3	49.8	40.5	27.0	17.1
M. D. MIN. T.	0.0	9.8	15.9	25.9	34.5	43.0	46.0	44.8	38.4	31.8	20.3	9.2
E. MIN. T.	-54	-51	-43	-21	16	28	33	30	20	7	-43	-49



7.

Vegetation and Soil

1

Vegetation

Community Reference Number	Vegetation Code					Plant communities (give usual name using full Latin names of a species where applicable)	Area (state units)
	Primary Structural Group	Class	Group	Formation	Sub-Formation		
1	1	A	1	7	a	<u>Pleurozium schreberi</u> - <u>Hylocomium splendens</u> - <u>Pinus contorta</u> - <u>Pseudotsuga menziesii</u> - <u>Abies lasiocarpa</u> association (with <u>Picea glauca</u> and <u>Picea engelmannii</u> )	
2	1	A	1	7	a	<u>Hylocomium splendens</u> - <u>Rhytidiadelphus triquetrus</u> - <u>Chimaphila umbellata</u> - <u>Pseudotsuga menziesii</u> - <u>Abies lasiocarpa</u> association.	
3	1	A	1	7	a	<u>Gymnocarpium dryopteris</u> - <u>Rubus strigosus</u> - <u>Colobanax horridum</u> - <u>Pseudotsuga menziesii</u> - <u>Picea engelmannii</u> x <u>P. glauca</u> - <u>Abies lasiocarpa</u> association	
4	1	A	2	1		<u>Heracleum lanatum</u> - <u>Cornus stolonifera</u> - <u>Corylus cornuta</u> - <u>Populus trichocarpa</u> association	
5	1	D	2	1	a	<u>Matteucia struthiopteris</u> - <u>Alnus tenuifolia</u> association	
6	1	A	2	1		<u>Aralia nudicaulis</u> - <u>Gymnocarpium dryopteris</u> - <u>Rubus parviflorus</u> - <u>Betula papyrifera</u> association	
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							

Please give information about further communities on a separate sheet.



"Big Bend" Douglas-firs -  
preliminary species list

- trees:
- Abies lasiocarpa*
  - Betula papyrifera* (common)
  - Picea engelmannii*
  - P. glauca*
  - Pinus contorta*
  - Populus tremuloides*
  - P. trichocarpa*
  - Pseudotsuga menziesii*
  - Tsuga heterophylla* (occasional)
- shrubs:
- Acer glabrum*
  - Alnus sinuata*
  - A. tenuifolia*
  - Amelanchier alnifolia*
  - Cornus stolonifera*
  - Corylus cornuta*
  - Lonicera involucrata*
  - Oplopanax horridum*
  - Pachystima myrsinites*
  - Ribes lacustre*
  - Rosa acicularis*
  - Rubus parviflorus*
  - R. strigosus*
  - Salix scouleriana*
  - Sambucus racemosa*
  - Sorbus scopulina*
  - Spiraea betulifolia*
  - Symphoricarpos albus*
  - Vaccinium membranaceum*
  - V. ovalifolium*
  - Viburnum edule*
- herb layer:
- Actaea rubra*
  - Adenocaulon bicolor*
  - Agrostis exarata*
  - Alopecurus aequalis*
  - Aralia nudicaulis*
  - Aruncus sylvester*
  - Asarum caudatum*
  - Aster ciliolatus*
  - A. conspicuus*
  - Athyrium filix-femina*
  - Bromus anomalus*
  - B. vulgaris*
  - Calamagrostis canadensis*
  - Carex brunnescens*
  - C. mertensii*
  - C. stipata*
  - Chimaphila umbellata*
  - Cinna latifolia*
  - Circaea alpina*
  - Clintonia uniflora*
  - Corallorhiza maculata*
  - Cornus canadensis*
  - Disporum hookeri*
  - D. trachycarpum*
  - Dryopteris austriaca*
  - Elymus glaucus*
  - Epilobium angustifolium*

herb layer  
(cont'd):

*Equisetum arvense*  
*E. pratense*  
*E. sylvaticum*  
*Erigeron philadelphicus*  
*Festuca subulata*  
*Fragaria virginiana*  
*Galium triflorum*  
*Geum macrophyllum*  
*Glyceria elata*  
*G. striata*  
*Goodyera oblongifolia*  
*G. repens*  
*Gymnocarpium dryopteris*  
*Habenaria saccata*  
*H. orbiculata*  
*H. unalaschcensis*  
*Heracleum lanatum*  
*Hieracium albiflorum*  
*H. canadense*  
*Impatiens noli-tangere*  
*Lathyrus ochroleucus*  
*Listera convallarioides*  
*L. cordata*  
*Lycopodium annotinum*  
*L. obscurum, L. complanatum*  
*Matteucia struthiopteris*  
*Melampyrum lineare*  
*Melica subulata*  
*Oryzopsis asperifolia*  
*Osmorhiza chilensis*  
*Polystichum lonchitis*  
*Pteridium aquilinum*  
*Pyrola secunda*  
*P. asarifolia*  
*Rubus pedatus (occasional)*  
*Senecio triangularis*  
*Smilacina racemosa*  
*Streptopus amplexifolius*  
*S. roseus*  
*S. streptopoides*  
*Thalictrum occidentale*  
*Tiarella trifoliata*  
*T. unifoliata*  
*Urtica dioica*  
*Veratrum viride*  
*Veronica americana*  
*Viola canadensis*  
*V. glabella*

bryophytes:

*Brachythecium* sp.  
*Dicranum fuscescens*  
*Hylocomium splendens*  
*Pleurozium schreberi*  
*Polytrichum juniperinum*  
*Ptilium crista-castrensis*  
*Rhytidiadelphus triquetrus (abundant)*

lichens: *Alectoria sarmentosa*  
*Cetraria canadensis*  
*Cladonia* spp.  
*Hypogymnia physodes*  
*Icmadophila ericetorum*  
*Lobaria pulmonaria*  
*Peltigera aphthosa*  
*P. canina*  
*P. spuria*  
*Platismatia glauca*

7.  
(cont.)

2

Soil

Community Reference Number	Soil type	Other notes
1	ABC F <sub>5</sub>	Brunisol
2	ABC F <sub>5</sub>	Brunisol
3	AGC/ABC P <sub>1</sub> /F <sub>5</sub>	Gleyed Brunisol
4	AC I <sub>2</sub>	Regosol
5	AC/ABC I <sub>2</sub> /P <sub>1</sub>	Gleyed Regosol
6	ABC F <sub>5</sub>	Luvisol
7		
8		
9		
10		
11		
12		
13		
14		
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16		
17		
18		
19		
20		



9. Landscape

1. General Landscape (give brief description) ..... Moderately steep, S- and S.W.-  
facing slopes rising above the N. bank of the Fraser River, dis-  
sected by numerous low ridges and shallow gullies.

2. Relief Type

	Flat	Undulating (0)-200 m.	Hilly 200-1000 m.	Mountainous > 1000 m.	%
Sharply dissected			35		35
Gently dissected			40		40
Incised			25		25
Skeletonised					
%			100		100%

3. Special landscape features (list) .....

.....

.....

10. Coastline of IBP Area\* none

1. Protected bays and/or inlets Many  Few  None

2. Substratum. % of coast

Rock	Boulder Beach	Shingle Beach	Sand Beach	Shell Beach	Mud	Coral	Ice
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Physiography. % of coast

Cliffed	Sloping	Flat
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Special Coastal Features (list) .....

.....

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5. Tide. Maximum range (state units of measurement) .....

6. Total length of coastline :

Less than 1 km.  1-10 km.  Above 10 km.

11. Freshwater within IBP Area\*

1.

	Permanent	Intermittent
General		X
Standing		
Running		X

2. Standing Water none

	Permanent	Intermittent	Unproductive	Productive
Swamps				
Ponds				
Lakes				

3. Running Water

	Permanent	Intermittent
Springs, cold		
Springs, hot		
Streams		X
Rivers		

4. Special freshwater features .....

.....

12. Salt and Brackish Water within IBP Area\* none

Salt Lakes	<input type="checkbox"/>	Lagoon	<input type="checkbox"/>	.....	<input type="checkbox"/>
Estuaries	<input type="checkbox"/>	Salt pools	<input type="checkbox"/>	.....	<input type="checkbox"/>

13. Adjacent Water Bodies (not within IBP Area\*)

1. Fresh  Lake  River  Stream   
Fraser River

2. Salt and Brackish none

Estuary	Salt lake	Salt pool	Lagoon	Ocean		

14. Outstanding Floral and Faunal Features

1. None .....

2. Fauna

	Species diversity	Abundance of individuals	Superabundance of individuals	Rare species	Threatened/Relict species	Spp. of biogeographical interest	Exceptional Associations	Breeding or Nesting Populations	Migrating Populations	Wintering Populations		
Mammalia		X				X						
Aves		X				X			X			
Reptilia												
Amphibia		?										
Pisces												
Insecta		X										

3. Names of main threatened, endemic, relict and rare species

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4. Flora

	Species diversity	Abundance of particular species	Rare species	Threatened/relict species	Spp. of biogeographical interest	Exceptional associations	Outstanding specimens				
Angiospermae :											
trees		X			X		X				
shrubs	X	X			X		X				
herbs		X			X		X				
grass		X			X						
Gymnospermae		X			X	X	X				
Pteridophyta		X	X		X		X				
Bryophyta		X									
Lichens and Algae		X									

5. Names of main threatened, endemic, relict and rare species

Mattuccia struthiopteris, Listera convallarioides, Asarum caudatum and Adenocaulon bicolor near the northern limit of their ranges.

15.

**Exceptional Interest of IBP Area\*** Most outstanding area for conservation.

- exceptional growth of Douglas-fir at such a northerly latitude
- excellent opportunity for study of edaphic control of vegetation (substratum high in calcium) in an area transitional between subboreal spruce-fir and interior western hemlock zones
- relatively rich flora
- very exceptional variation of the CBS zone (related to the TWH)

16. Significant Human Impact

1. General : None in entire IBP Area\* .....

None in part of IBP Area\* .....

Impact on entire IBP Area\* .....

2. Particular

	Past impact	Present impact	Trend			
			Increasing	Decreasing	No change	No information
Cultivation					<input checked="" type="checkbox"/>	
Drainage		<input checked="" type="checkbox"/>				
Other soil disturbance		<input checked="" type="checkbox"/>				
Grazing					<input checked="" type="checkbox"/>	
Selective flora disturbance					<input checked="" type="checkbox"/>	
Logging	<input checked="" type="checkbox"/>					
Plantation					<input checked="" type="checkbox"/>	
Hunting						
Removal of predators	<input checked="" type="checkbox"/>					
Pesticides					<input checked="" type="checkbox"/>	
Introductions — plants		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Introductions — animals					<input checked="" type="checkbox"/>	
Fire	<input checked="" type="checkbox"/>					
Permanent habitation					<input checked="" type="checkbox"/>	
Recreation and tourism			<input checked="" type="checkbox"/>			
Research			<input checked="" type="checkbox"/>			

-road  
-building

3. Additional details on each type of impact attached?

Yes ..... No .....

17. Conservation Status (required)

	Protection			Utilisation			Conservation Management			Permitted Research		
	none	partial	total	none	controlled	uncontrolled	none	to alter status	to maintain status	experimental	observational	prohibited
Flora			X	X					X	X	X	
Fauna			X	X								
Non-living			X	X								

18. References

1. List major biological/geographical references for the IBP Area.

Sheet attached? Yes ..... No .....<sup>X</sup>.....

2. List main maps available for the IBP Area.

93 J/8 West Half

93 J/1 West Half

List attached? Yes ..... No .....

+ Forest Cover Map

3. Aerial photographs for the IBP Area available?

For whole area .....<sup>X</sup>..... For part of area ..... None .....

19. Other Relevant Information

There is a considerable infestation of Douglas-fir by bark beetles in the areas adjacent to logging, but that should be well salvaged by entomologists if they would be asked to do so. However this area must become an ecological reserve. There is so much to learn from this area that it is difficult to describe briefly.

*V. J. Krajina*

V. J. Krajina, R. G. McMinn

Signed J. Pojar, Dennis Araki, C. Parsons

*J. Pojar* (Surveyor)

*C. Parsons*