Report No. 177

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.)

   Near Antler Lake, Gold River, Vancouver Island

3. Indicate the biogeoclimatic zone of which the reserve is representative.

   CWH (probably: CWHb)

4. Approximate total acreage.

   251 acres (1:154, 2:97 acres)

5. Purpose of the reserve.

   To conserve Douglas-fir trees of the tallest height class to be found in the valley (216+') with some trees reaching an estimated height of 270' (82m).

   (a) Primary (state acreage)

   251 (1:154, 2:97) acres

   (b) Others if any (state acreage)
   - -

   (c) Buffer areas (state acreage)
   - -

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 grandis, Acer glabrum, A. macrophyllum, Alnus rubra, Cornus nuttallii, Picea sitchensis, Populus trichocarpa, Pseudotsuga menziesii var. menziesii, Thuja plicata, Tsuga heterophylla

Signature H.L. Roemer, Dick Kosick,
I.B.P. Surveyor
and V.J. Krajina

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 | | | | | | | |

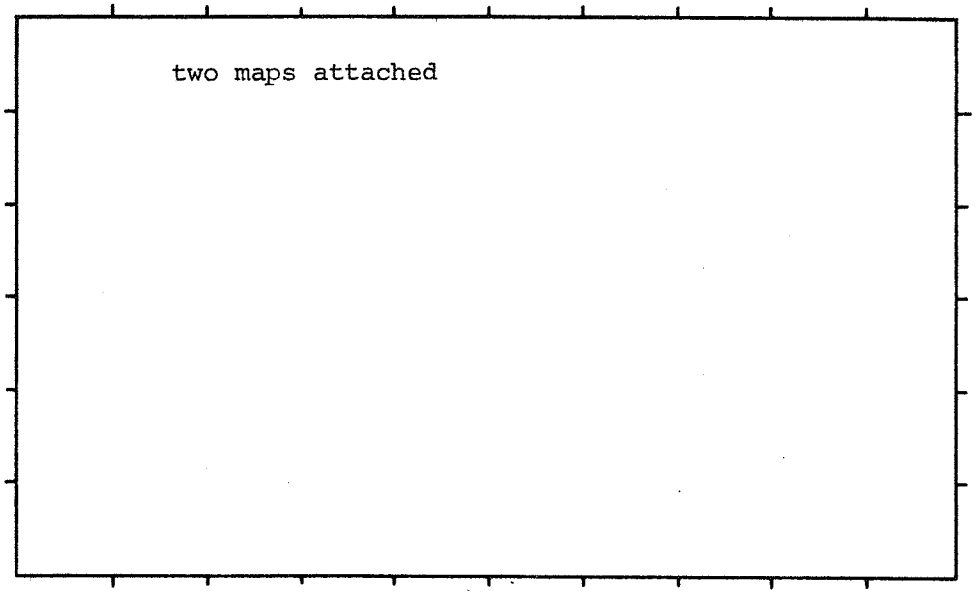
For Data Centre Use only

1.

1. Name of surveyor H.L. Roemer*, Dick Kosick**, and V.J. Krajina*
2. Address of surveyor *Department of Botany, U.B.C., Vancouver
   **Forester, Tahsis Company Ltd.,
   1201 West Pender, Vancouver, B.C.
3. Check Sheet completed (a) on site X (b) from records X
4. Date Check Sheet completed November 11, 1974

2.

1. Name of IBP Area Near Antler Lake, Gold River, Vancouver Island
2. Name of IBP Subdivision (or serial letter) CWH (possibly CWHb)
3. Map of IBP Area* showing boundaries attached? Yes X No .....
4. Sketch map of IBP Area*. Please mark direction of north, the scale and grid numbers where applicable.



* For " IBP Area ", read IBP Area and/or IBP Subdivision.

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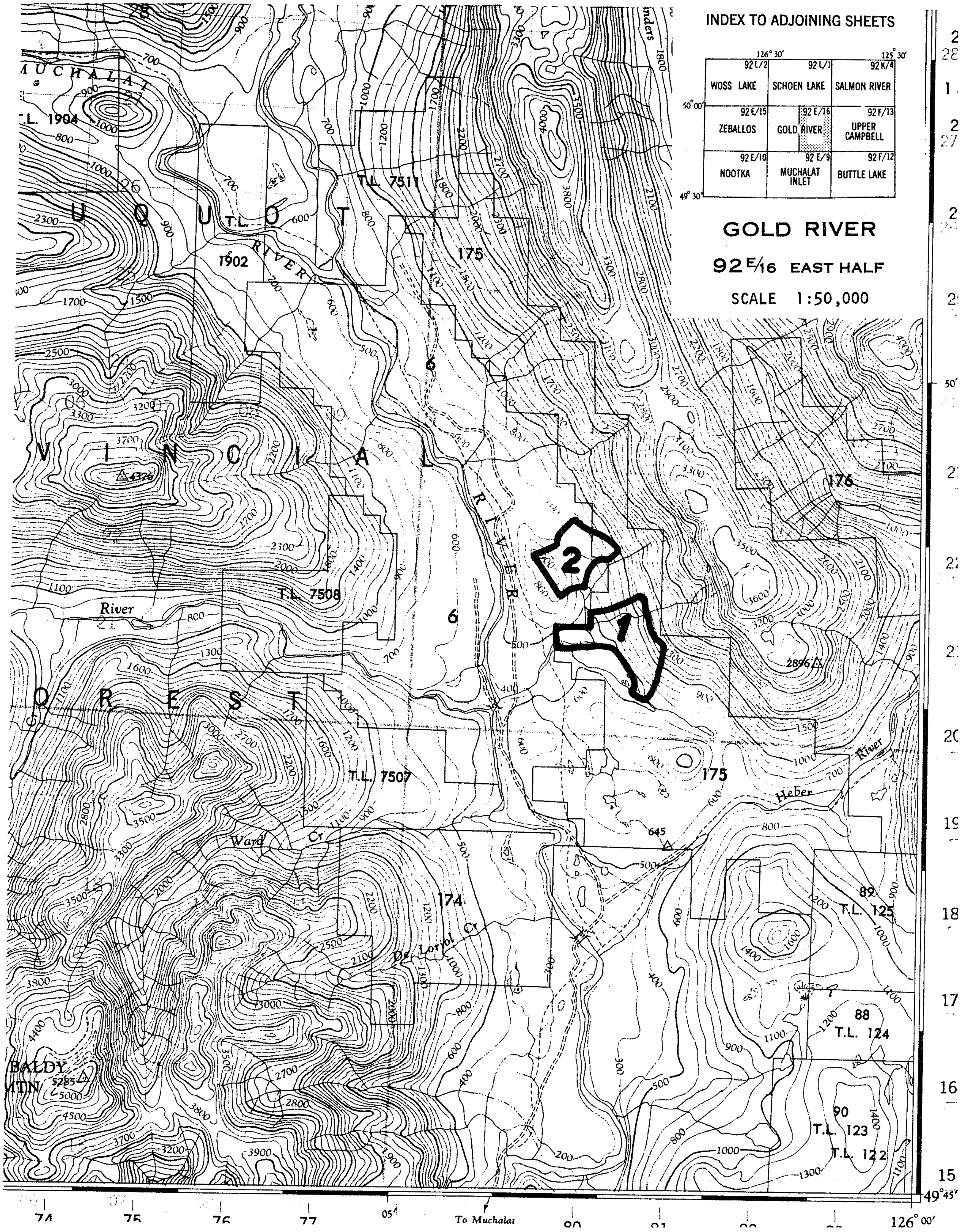
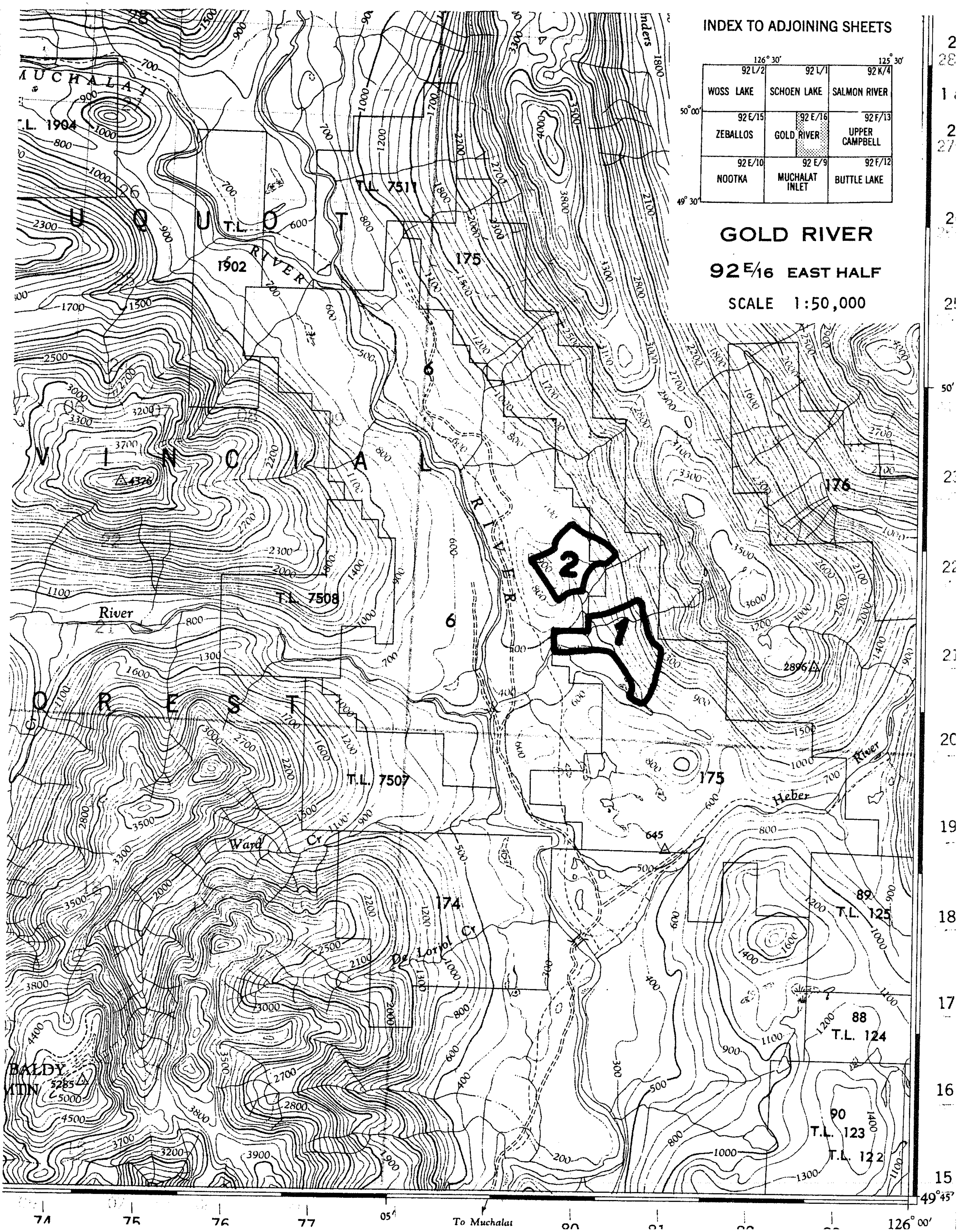
3. Map of IBP Area* showing boundaries attached? Yes X No .....
4. Sketch map of IBP Area*. Please mark direction of north, the scale and grid numbers where applicable.

two maps attached

* For " IBP Area ", read IBP Area and/or IBP Subdivision.



INDEX TO ADJOINING SHEETS
126° 30'
125° 30'
50° 00'
49° 30'
92 L/2
WOSS LAKE
92 L/1
SCHOEN LAKE
92 K/4
SALMON RIVER
92 E/15
ZEBALLOS
92 E/16
GOLD RIVER
92 F/13
UPPER CAMPBELL
92 E/10
NOOTKA
92 E/9
MUCHALAT INLET
92 F/12
BUTTLE LAKE
GOLD RIVER
92 E/16 EAST HALF
SCALE 1:50,000
MUCHALAT
T.L. 1904
T.L. 7511
T.L. 1902
RIVER
175
6
T.L. 7508
River
176
2
1
T.L. 7507
175
Heber
River
645
Ward Cr
174
De Loriol Cr
89
T.L. 125
88
T.L. 124
90
T.L. 123
T.L. 122
BALDY MTN
5285
4376
2896
To Muchalat
49° 45'
126° 00'


INDEX TO ADJOINING SHEETS
126° 30'
125° 30'
50° 00'
49° 30'
92 L/2 WOSS LAKE
92 L/1 SCHOEN LAKE
92 K/4 SALMON RIVER
92 E/15 ZEBALLOS
92 E/16 GOLD RIVER
92 F/13 UPPER CAMPBELL
92 E/10 NOOTKA
92 E/9 MUCHALAT INLET
92 F/12 BUTTLE LAKE
GOLD RIVER
92 E/16 EAST HALF
SCALE 1:50,000
MUCHALAT
T.L. 1904
T.L. 7511
T.L.
1902
RIVER
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2
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RIVER
T.L. 7508
River
T.L. 7507
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Heber
River
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Ward
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BALDY
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To Muchalat
49° 45'
126° 00'
50'
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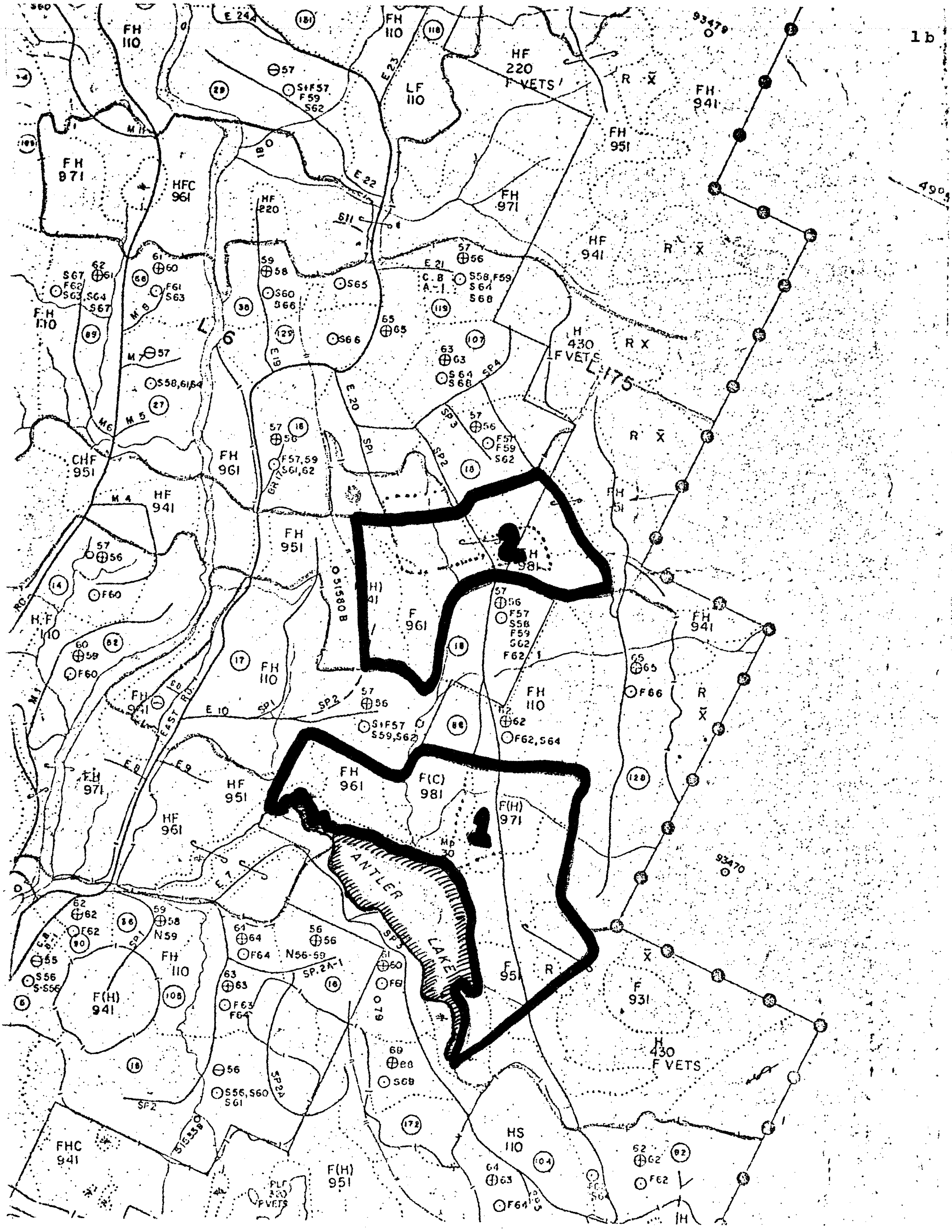
75
76
77
80
81

1b


ANTLER LAKE
1
2
FH 971
HFC 961
FH 110
LF 110
HF 220 F VETS
FH 941
FH 951
FH 971
HF 941
R X
H 430 F VETS
L 175
L 6
CHF 951
FH 961
HF 941
FH 951
F 961
FH 110
FH 961
F(C) 981
F(H) 971
HF 951
HF 961
FH 971
F(H) 941
FH 110
F 931
F 951
HS 110
F(H) 951
FHC 941
EAST RD.
93479
93470
O 51580 B
Mp 30

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3. **Location of IBP Area***

1. Latitude 49 ° 48-49.2' N Longitude 126 ° ~~47.4-48.7'~~ 02.4-03.7' W
2. Country Canada

State or Province British Columbia County Gold River

(State or Province ..... County .....)

4. **Administration**

National 1. Official category *Crown Land; T.F.L. 19, parts of L. 175
**Tahsis Company ?

2. Address of administration *British Columbia Department of Lands, Forests, and Water Resources, Parliament Buildings, Victoria, B.C.
**Tahsis Company Ltd., 1201 W. Pender, Vancouver, B.C.

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) 251 acres (1:154, 2:97 acres)
2. Altitude (state units of measurement) Maximum 1350' (411m)
   Minimum 450' (137m)

6. **Climate** Cfb (after Köppen)

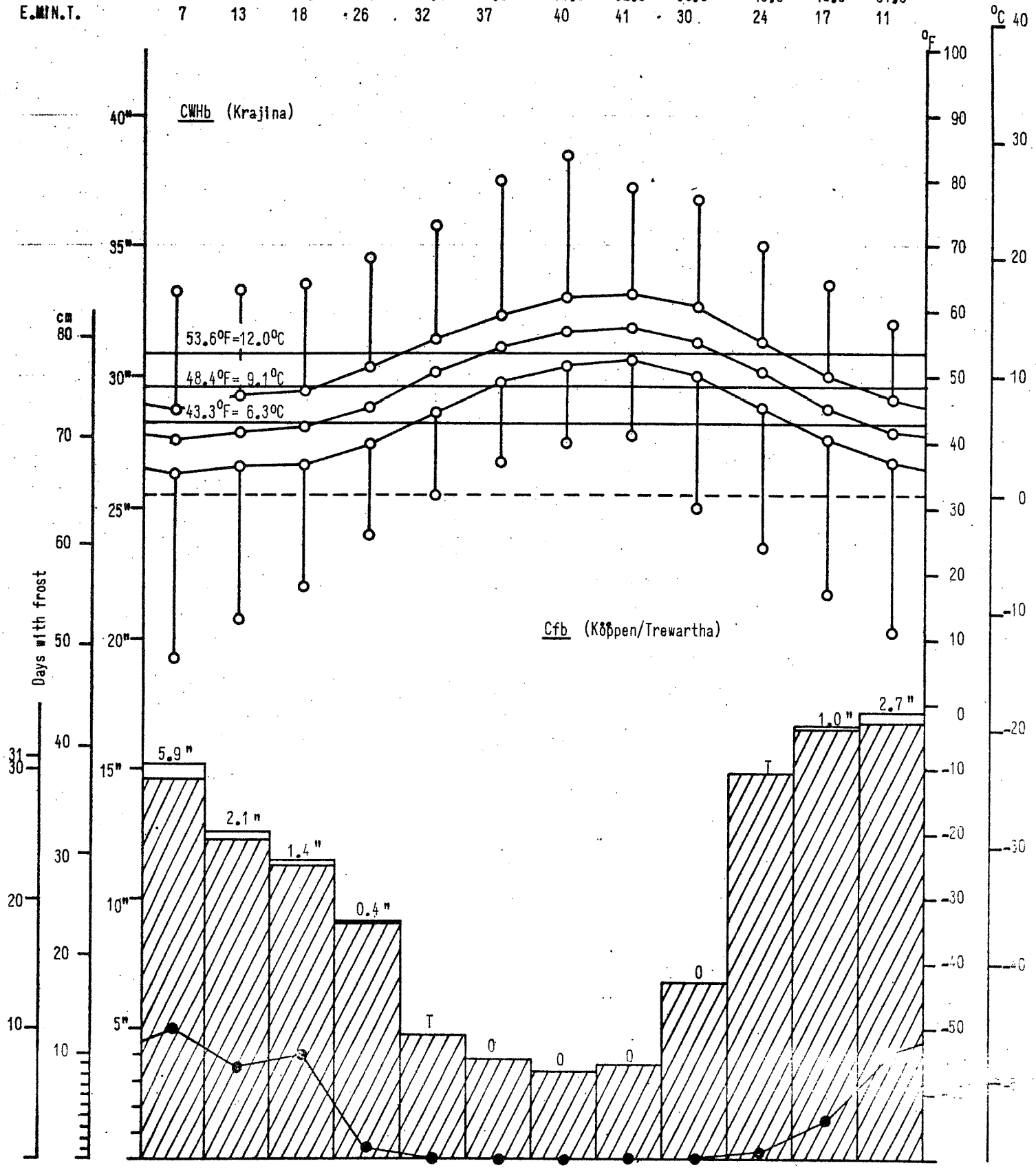
Nearest climatological station :

1. Name *Estevan Point; **Tahsis (only precip.); ***Kyuquot (only precip.)
2. Climatological station on IBP Area*? Yes ..... No ...X....
3. If (2) not, distance from edge of IBP Area* (state units) *45 mi.; **24 mi.; ***54 mi.
4. Direction from IBP Area* *SSW; **WWSW; ***WWNW
5. Additional data sheet attached? Yes X ..... No .....

Estevan Point, Tahsis, Kyuquot

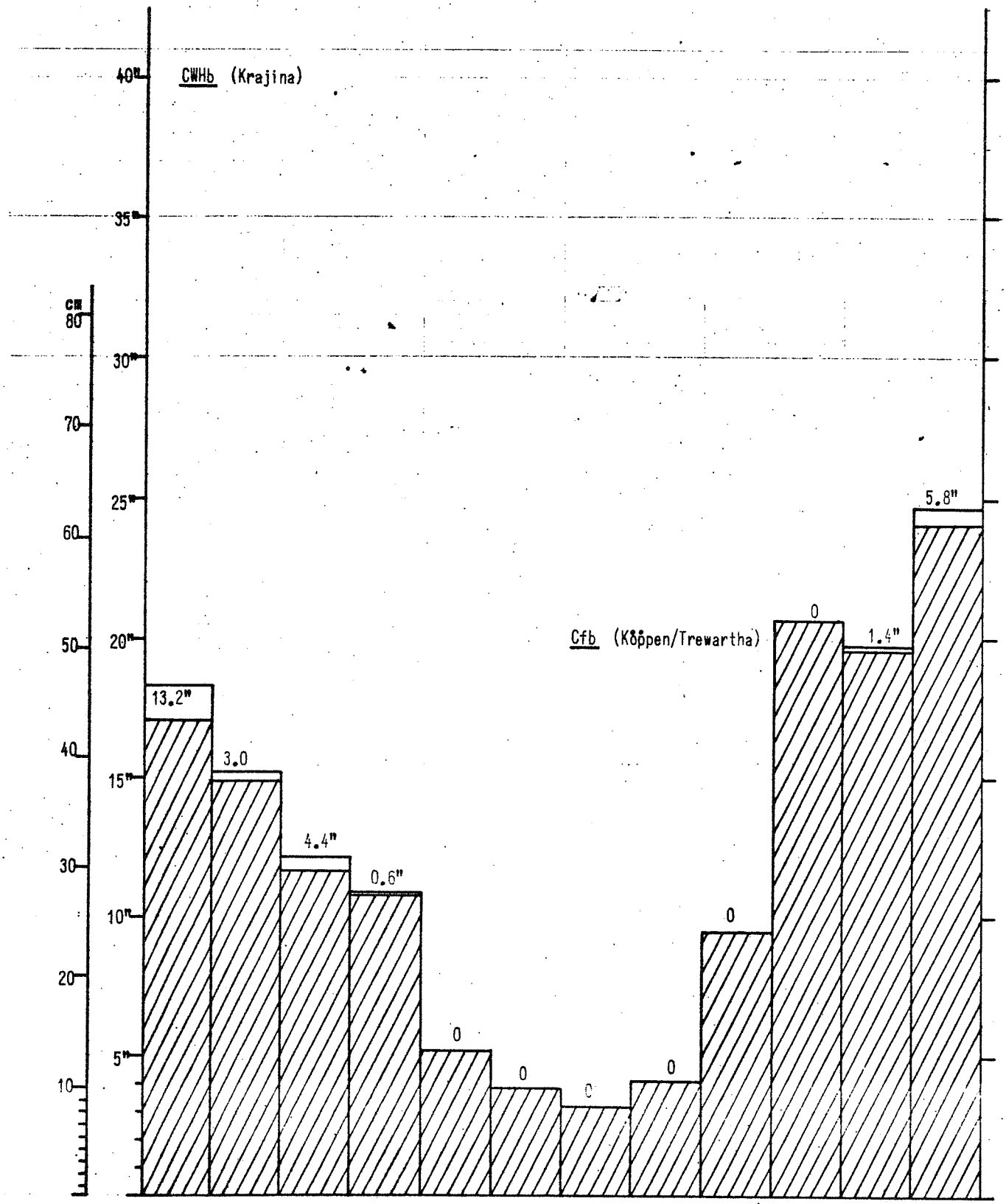
ESTEVAN POINT 49°23'N, 126°32'W, 20' ASL. Record: 47-50 years.
Months above 50°F: 6, below 32°F: 0, A.M.T.P. 119.21", A.M.S.F. 13.5", snow % A.M.T.P.: 1.13.

E.MAX.T.	63	63	64	68	73	80	84	79	77	70	64	58
M.D.MAX.T.	44.7	47.0	47.8	51.1	55.8	59.2	62.0	62.5	60.7	55.5	50.0	46.5
M.D.T.	40.1	41.8	42.1	45.5	50.2	54.3	56.9	57.4	55.3	50.4	45.2	41.9
M.D.MIN.T.	35.5	36.6	36.4	39.9	44.6	49.3	51.8	52.3	50.0	45.3	40.3	37.3
E.MIN.T.	7	13	18	26	32	37	40	41	30	24	17	11

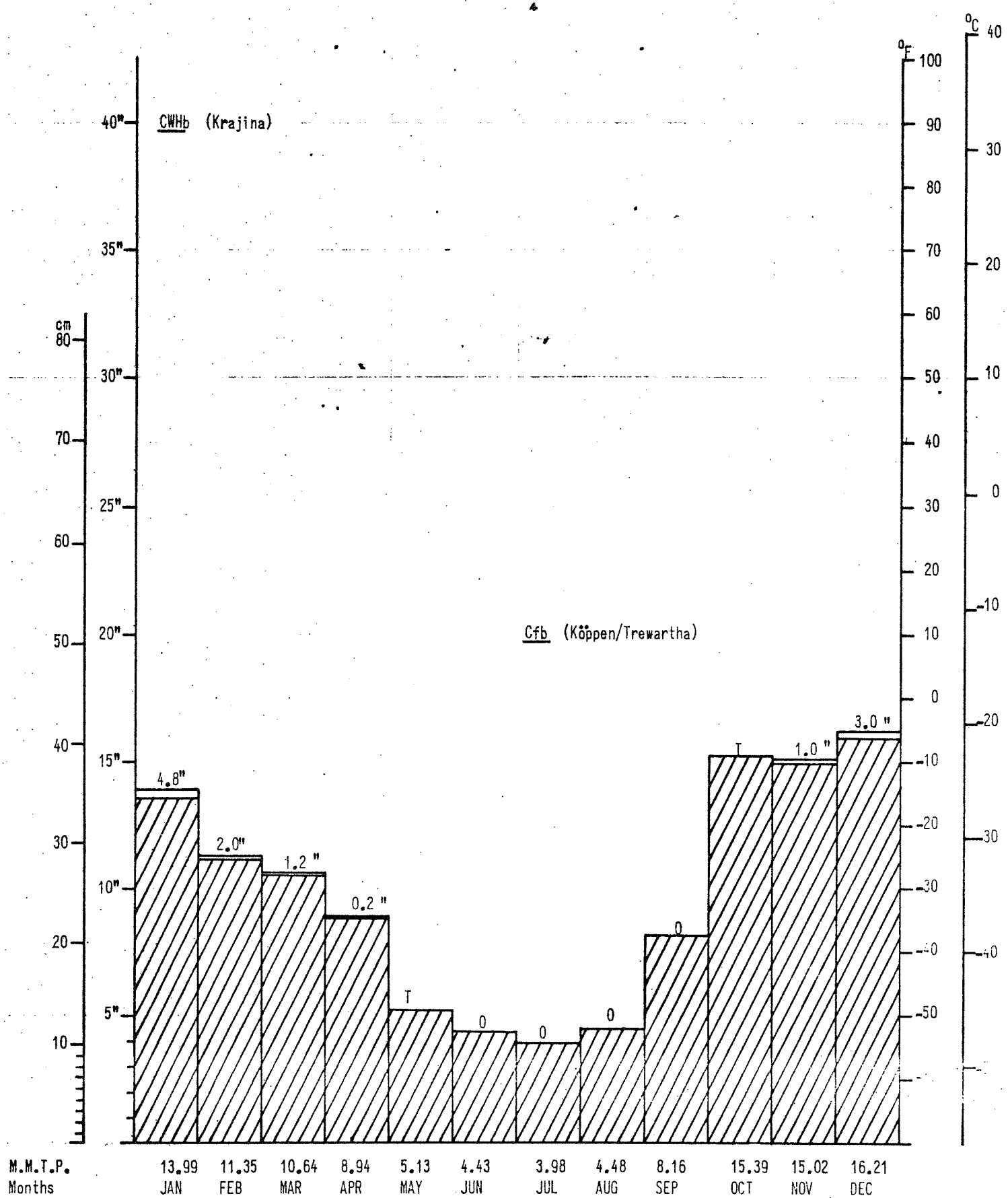


Days with frost	10	7	8	1	0	0	0	0	0	*	3	6
M.M.T.P.	15.17	12.52	11.50	9.16	4.74	3.82	3.45	3.54	6.76	14.80	16.59	17.16
Months	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

TAHSIS 49°55'N, 126°39'W, 15' ASL. Record: 17-19 years.(adjusted).
A.M.T.P. 147.29", A.M.S.F. 28.4", snow % A.M.T.P.: 1.93.



KYUQUOT 50°02'N, 127°22'W, 10' ASL. Record: 26-27 years,(adjusted).
A.M.T.P. 117.72", A.M.S.F. 116.50", snow % A.M.T.P.: 9.90.



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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	Hylocomio (splendentis) - Rhytidiadelpho (lorei) -	
						Polysticho (muniti) - Tiarello (trifoliatae) -	
						Achlydo (triphyllae) - Rubo (spectabilis) -	
						Pseudotsugo (menziesii) - Tsugo (heterophyllae) -	
						Thujetum plicatae	
2	1	A	1	7	a	Plagiomnio (insignis) - Polysticho (muniti) -	
						Achlydo (californicae) - Asaro (caudati) -	
						Adianto (pedati) - Oplopanaco (horridi) - Pseudotsugo (menziesii) - Thujetum plicatae	
3	1	A	1	7	a	Rhytidiadelpho (lorei) - Plagiothecio	
						(undulati) - Blechno (spicantis) - Rubo (pedati) -	
						Vaccinio (alaskaensis) - Pseudotsugo (menziesii) - Tsugetum heterophyllae	
4	1	A	1	7	a	Rhytidiadelpho (triquetri) - Plagiomnio (insignis) -	
						Achlydo (triphyllae) - Polysticho (muniti) - Acero	
						(macrophylli) - Corno (nuttallii) - Pseudotsugo	
						(menziesii) - Thujetum plicatae	

Please give information about further communities on a separate sheet.

H. L. Roemer

ANTLER LAKE DOUGLAS FIRS, GOLD RIVER

Main feature of potential reserve: stands of prime Douglas-fir

Tahsis Company, Tree Farm Licence 19. Visited with Mr. Dick Kosick, Oct. 16, 1973.

The attached sketch map shows two alternative areas of 136 and 85 acres respectively. They are situated in very close vicinity to each other, one on the north to east shores of Antler Lake and one in the next firebreak further north from it. These have been selected from a total of five areas visited.

Both alternative areas contain Douglas-fir of the tallest height class to be found in the valley (216+') with some trees reaching an estimated height of 270'. Both would be excellent samples of highly productive forests in this part of the Western Hemlock Zone, subzone a. These Douglas-firs are of a different growth type compared with the record-size trees of the Nimpkish valley, being more slender, even where they reach comparable heights. Diameters of the tallest trees are only 45 to 65 " DBH. The oldest Douglas-firs in the vicinity are probably not more than 450 years.

Where the tallest Douglas-firs occur, both areas have been somewhat disturbed by salvage logging. This amounts to surface soil disturbances, primarily of the H (Ah) and B horizons on cat and tractor trails and a following invasion of herbaceous weedy species in these places.

The normal species combination of both areas on the SW slope is as follows: (in order of dominance)

Pseudotsuga menziesii
Tsuga heterophylla

Mahonia nervosa
Vaccinium parvifolium
Rubus ursinus
Rosa gymnocarpa
(Gaultheria shallon)

Polystichum munitum
Achlys triphylla
Disporum hookeri
Viola sempervirens
Linnaea borealis
Festuca subuliflora
Tiarella trifoliata
Chimaphila menziesii
Monotropa uniflora

Hylocomium splendens
Eurhynchium oreganum
Rhytidiadelphus loreus
Plagiothecium undulatum

Portions with apparently better texture and/or watersupply have the following additional species:

Thuja plicata
Acer macrophyllum

Rubus spectabilis
Oplopanax horridus
Sambucus pubens

Athyrium filix-femina
Dryopteris austriaca
Galium triflorum
Lactuca muralis
Carex deweyana

Other features vary for the two alternative areas and are described under "Antler lake" and "Firebreak" in the following.

ANTLER LAKE

Size: 136 acres as outlined on attached sketch.

Topography: Steep SW slopes gradually levelling out to flat portion N of the lake.

Soil parent materials: Colluvial materials dominate on the slope, especially where the taller trees occur, but pockets of till are also present. Colluvial and alluvial material in the flat portion.

Vegetation specific to this area: Close to the lakeshore a stand of Acer macrophyllum is found with several large specimens of Abies grandis and the following indicators of rich and moist sites (most of the additional species mentioned above are also present):

Oplopanax horridus
Rubus parviflorus
Adianthum pedatum
Viola glabella
Trillium ovatum
Adenocaulon bicolor
Festuca subulata
Montia sibirica
Asarum caudatum
Circaea alpina
Carex hendersonii
Tellima grandiflora
Plagiomnium insigne

On the eastern margin of the area several interesting species occur in combination with the normal species set in an open forest type on very steep slopes with shallow soils:

Acer glabrum
Cornus nuttallii
Holodiscus discolor
Symphoricarpus mollis v. hesperius
Pteridium aquilinum
Chimaphila umbellata
Trientalis latifolia
Festuca occidentalis
Fragaria vesca
Polypodium glycyrhiza
Rhytidiadelphus triquetrus

An ecotone exists between the rich sites near the lake, the normal forest as described above and the latter type.

This locality has special plant-geographical significance as it is the westernmost outpost for plants such as Abies grandis, Cornus nuttallii and Trillium ovatum. Acer macrophyllum in similar abundance is also absent in localities further west and north.

Boundaries and disturbance: The stand is exposed on three sides (N, E and SE) by clearcuts. The southern and southwestern border towards the lake and a belt of boggy vegetation are naturally grown. Apart from the mentioned salvage logging, there is some disturbance by fire along the eastern margin and throughout the northern corner of the area. This must not necessarily be considered as too serious as all Douglas-fir forests in this biogeoclimatic zone are closely associated with the natural occurrence of fire. It does, however, increase the exposure of this relatively narrow belt of remaining forest to wind and to the clearcut microclimate and may eventually result in brush and dense hemlock regeneration

in these parts. Fires in the past account for a hemlock tree generation of 60 to 80 years forming a second tree layer under the crowns of scattered mature Douglas-firs east of the lake.

FIREBREAK

Size: 85 acres as outlined on sketch map.

Topography: The proposed portion includes both slopes of the valley from the top of the small ridge in the SW to the main sidehill of the Gold River valley in the NE, thus containing two significantly different aspects with a flat or depressional portion in between.

Soil parent materials: Colluvial material dominates the SW slope, supporting most of the very tall trees, while glacial till appears to prevail on the NE slope.

Vegetation: The normal species combination given in the first species list covers most of this area except for the till-covered NE slope where species of the wet subzone of the Western Hemlock Zone are more common such as

Vaccinium alaskaense
Blechnum spicant
Cornus canadensis
Streptopus roseus
Rubus pedatus.

Boundaries and disturbance: The stand is now exposed on the NW and SE sides by clearcuts and will eventually be exposed also on the other sides, once the rest of the firebreak is logged. The total length of road disturbance is less than in the former area. Disturbance by recent fires has not been observed. The entire area is mature Douglas-fir forest with some hemlock, mainly in the lower layers.

COMPARISON OF THE ALTERNATIVES

	1) Antler Lake	2) Firebreak
advantageous points	* More variation in forest types than in 2 * Greater range in moisture regime * Potentially richer sites than in 2 * Species of plant geographical interest * Naturally grown border towards the lake * This choice would maintain magnificent backdrop to Antler Lake as seen from picknick site on opposite shore	* Area of tallest height class of trees considerably larger than in 1 * Tallest trees are well inside stand * Two distinctly different aspects
disadvantageous points	* Tallest height class of trees constitutes only small part of total acreage. * Tallest trees are exposed on northerly margin of stand * Greater disturbance by roads and by fires than in 1	* Small variation in species combination and moisture regime than in 1

Air Photos: BC 4419 144-146
Topographic map 92E 16 East

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7. (cont.) 2 **Soil**

Community Reference Number	Soil type	Other notes (Evidently basaltic rocks are dominant)
1	$^{ABC}/_{AGC}\ ^{F5}/_{P_1}$	Gleyed Ferro-Humic Podzol
2	$^{AC}/_{AGC}\ ^{I2}/_{P_1}$	Gleyed Regosol → Gleyed Ferro-Humic Podzol
3	$^{ABC}\ ^{F5}$	Humic Podzol
4	$^{AC}/_{AGC}\ ^{I2}/_{P_1}$	Gleyed Regosol → Gleyed Ferro-Humic Podzol
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

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8. **Similar Communities in Country (or State)**

Community Reference Number	Protected					Protected and Unprotected				
	Abundant	Infrequent	None known	Decreasing	Increasing	Abundant	Infrequent	None known	Decreasing	Increasing
1			X						X	
2			X						X	
3			X						X	
4			X						X	
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

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9. **Landscape**

1. General Landscape (give brief description) Bottomland of a river valley at the foot of a mountain ridge.

2. Relief Type

	Flat	Undulating (0)-200 m.	Hilly 200-1000 m.	Mountainous > 1000 m.	%
Sharply dissected		10	40		50
Gently dissected			50		50
Incised					
Skeletonised					
%		10	90		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

3. Physiography. % of coast

Cliffed	Sloping	Flat

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

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

6. Total length of coastline :

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

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11. **Freshwater within IBP Area***

1.

	Permanent	Intermittent
General		
Standing	X	
Running	X	

2. Standing Water

	Permanent	Intermittent	Unproductive	Productive
Swamps				
Ponds				
Lakes				

3. Running Water

	Permanent	Intermittent
Springs, cold		
Springs, hot		
Streams	X	
Rivers		

4. Special freshwater features .....Strong seepage water affects most soils.....

.....

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

Salt Lakes		Lagoon		.....	
Estuaries		Salt pools		.....	

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

1. Fresh [ ] Lake [X] River [X] Stream [X]

Antler Lake Gold River

2. Salt and Brackish

Estuary	Salt lake	Salt pool	Lagoon	Ocean		
				X		

Muchalat Inlet

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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						X		X		
Aves	X	X				X		X	X	X		
Reptilia		X										
Amphibia		X										
Pisces												
Insecta	X	X				X		X		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						
herbs	X	X			X						
grass		X									
Gymnospermae	X	X			X						
Pteridophyta	X	X			X						
Bryophyta	X	X			X						
Lichens and Algae	X	X			X						

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

Abies grandis, Cornus nuttallii, Holodiscus discolor and Acer macrophyllum (with several mosses) at their most western (and northern) limits.

15. **Exceptional Interest of IBP Area***

Douglas-fir reaches here an estimated height of 270'(82m).

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16. **Significant Human Impact**

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

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					X	
Drainage					X	
Other soil disturbance					X	
Grazing					X	
Selective flora disturbance					X	
Logging			X*		X	
Plantation					X	
Hunting			X			
Removal of predators			X			
Pesticides					X	
Introductions — plants			X			
Introductions — animals					X	
Fire					X	
Permanent habitation					X	
Recreation and tourism					X	
Research					X	

* in the vicinity

3. Additional details on each type of impact attached?

Yes ..... No X .....

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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	
Fauna			X	X					X		X	
Non-living			X	X					X		X	

18. **References**

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

   Sheet attached? Yes ..... No .....

2. List main maps available for the IBP Area.

   92 E/16 East Half (Gold River)

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

3. Aerial photographs for the IBP Area available?

   For whole area X..... For part of area ..... None .....
   BC 4419 144-146

19. **Other Relevant Information**

Most desirable for conservation of habitats where Douglas-fir grows extremely well (better than in the so-called Cathedral grove). These trees may be easily observed because the road is not very far.

Signed H.L. Roemer, Dick Kosick .....
(Surveyor)

and V.J. Krajina