

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.)

SE of Skutz Falls, near the highway (18) toward Cowichan Lake, South of Cowichan River, Vancouver Island

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

CDFb

4. Approximate total acreage.
800 acres (A:778 acres; B:22 acres)

5. Purpose of the reserve.

Mostly planted Douglas-fir in 1941; 30-50 years old second growth stands of Douglas-fir, alder, maple and cottonwood, several swamps and marshes.

- (a) Primary (state acreage)

~ 230 ha
~~778~~ acres (A)

- (b) Others if any (state acreage)

22 acres (B) (this area should remain accessible for those who will fish in the Cowichan River)

- (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 macrophyllum, Alnus rubra, Pinus contorta, Populus trichocarpa, Prunus emarginata, Rhamnus purshiana, Thuja plicata, Tsuga heterophylla
(young secondary forest, mainly with planted Douglas-fir)

Signature H.L. Roemer, R. Thomas and
V.J. Krajina, I.B.P. Surveyor
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

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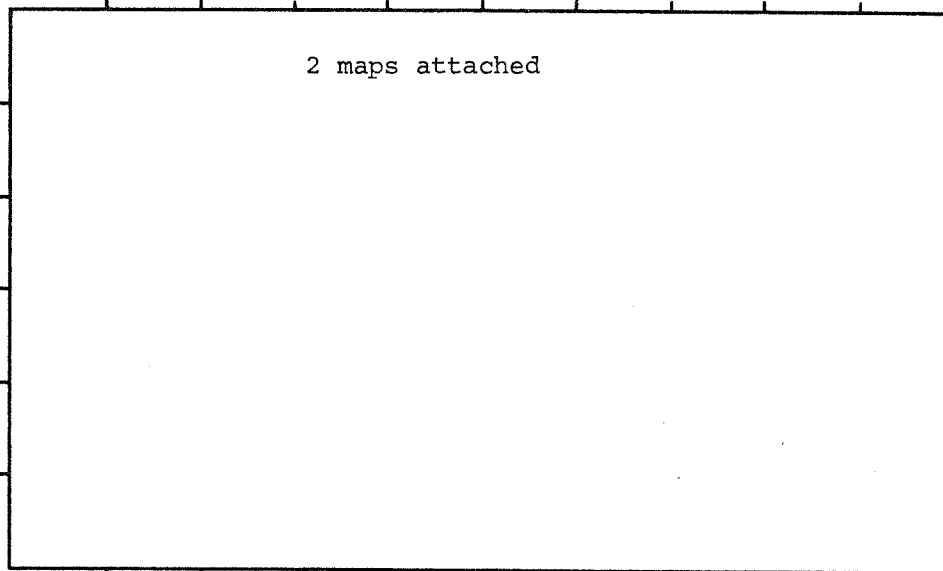
For Data Centre Use only

1.

1. Name of surveyor H.L. Roemer*, R. Thomas **, and V.J. Krajina*
2. Address of surveyor *Dept. of Botany, U.B.C., Vancouver, B.C.
 **Ranger, B.C. Forest Service,
 ..Lake Cowichan.....
3. Check Sheet completed (a) on siteX..... (b) from recordsX.....
4. Date Check Sheet completed November 10, 1974.....

2.

1. Name of IBP Area SE of Skutz Falls, near the highway (18) toward Cowichan Lake, Vancouver Island
2. Name of IBP Subdivision (or serial letter)CDFb.....
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.



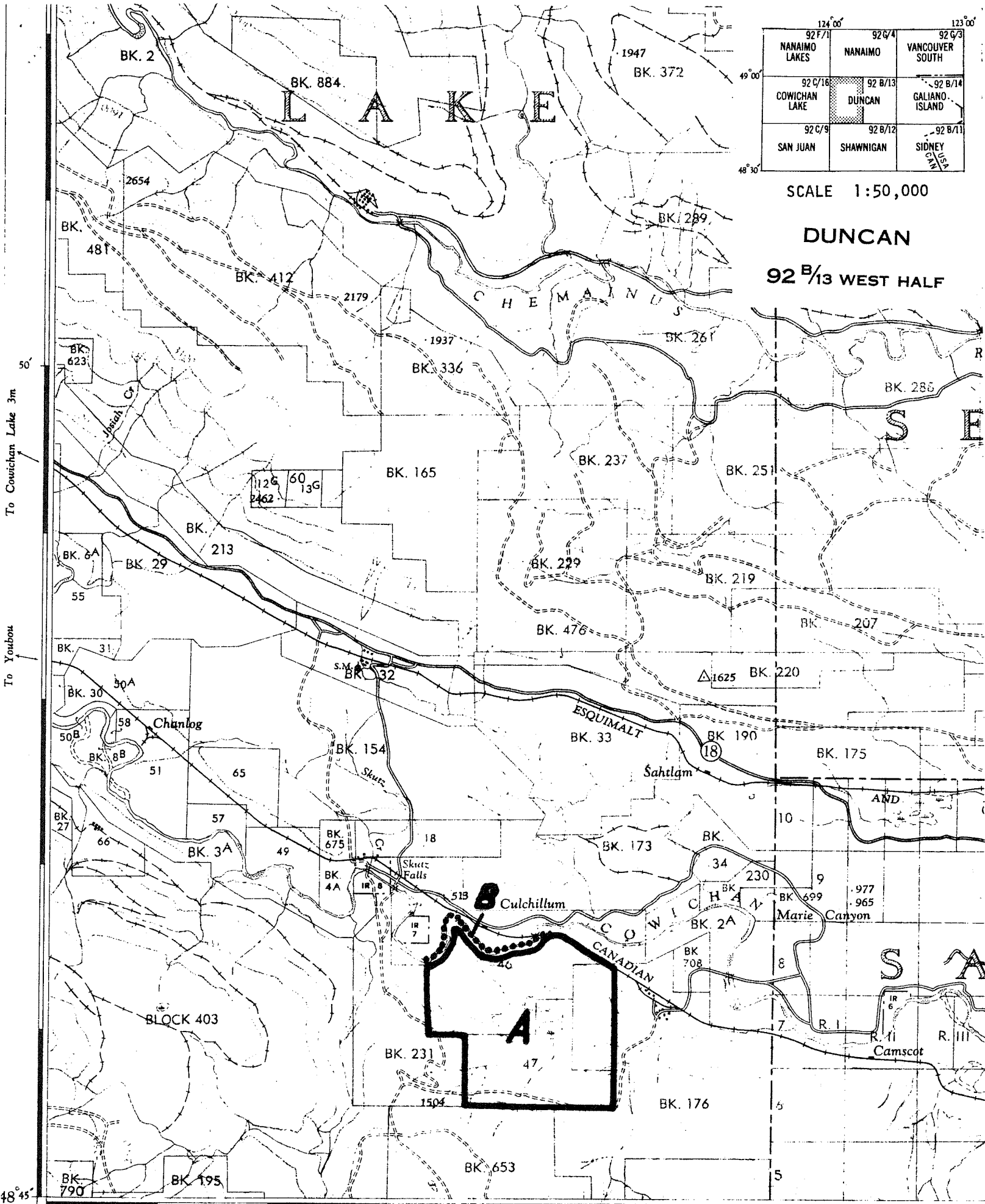
* For "IBP Area", read IBP Area and/or IBP Subdivision.

92 F/7	92 G/4	92 G/3
NANAIMO LAKES	NANAIMO	VANCOUVER SOUTH
92 C/16	92 B/13	92 B/14
COWICHAN LAKE	DUNCAN	GALIANO ISLAND
92 C/9	92 B/12	92 B/11
SAN JUAN	SHAWNIGAN	SIDNEY CAN.

SCALE 1:50,000

DUNCAN

92 B/13 WEST HALF



To Cowichan Lake 3m
To Youbou

3. Location of IBP Area*

1. Latitude 48 ° 45.6-46.7' N Longitude 123 ° 54.9-56.6' W
2. Country Canada
- State or Province British Columbia County Duncan
- (State or Province County)

4. Administration

- National 1. Official category Crown Land
2. Address of administration British Columbia Dept. of Lands, Forests,
and Water Resources,
Parliament Buildings, Victoria, 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) 800 acres (A:778, B:22 acres)
2. Altitude (state units of measurement) Maximum 1200' (366m)
- Minimum 350' (107m)

6. Climate Csb (after Kööpen)

Nearest climatological station :

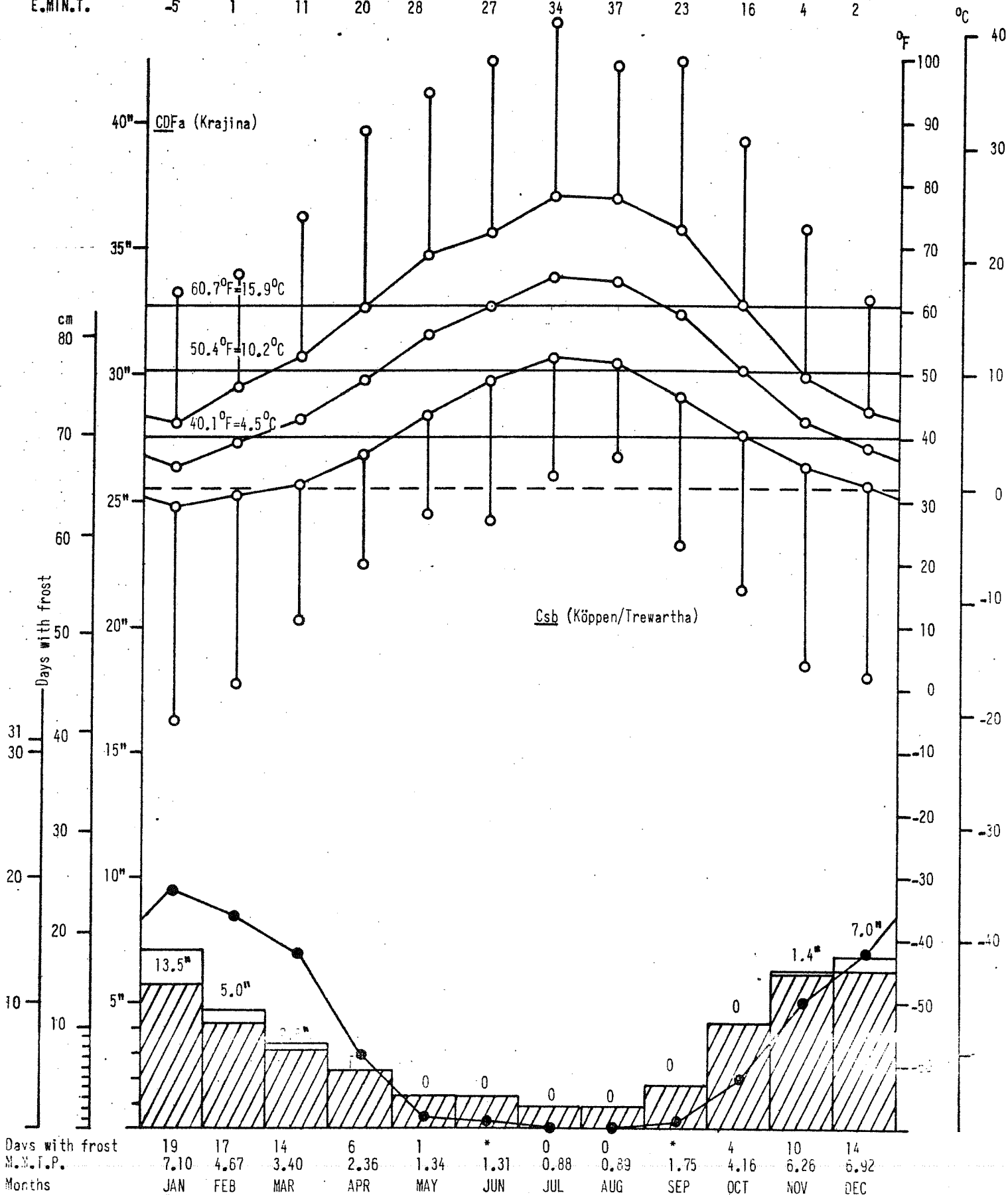
1. Name Duncan (A.M.T.P. 41.04", A.M.S.F. 33.3"; days with frost: 85; months
above 50°F: 6, below 32°F: 0)
2. Climatological station on IBP Area*? Yes No ..X....
3. If (2) not, distance from edge of IBP Area* (state units) 10 mi.
4. Direction from IBP Area* East
5. Additional data sheet attached? Yes ..X.... No
Duncan

DUNCAN 48°47'N, 123°43'W, 28' ASL. Record: 30-32 years.

Months above 50°F: 6, below 32°F: 0, A.M.T.P.: 41.04", A.M.S.F.: 29.5", snow % A.M.T.P.: 7.1, days with frost, yearly: 85.

2a

E. MAX. T.	63	66	75	89	95	100	106	99	100	87	73	62
M. D. MAX. T.	42.3	47.9	52.8	60.4	68.7	72.3	78.2	77.9	72.9	61.1	49.8	44.3
M. D. T.	35.7	39.4	42.9	49.0	56.3	60.6	65.4	64.7	59.5	50.7	42.6	38.4
M. D. MIN. T.	29.1	30.9	32.8	37.6	43.8	48.8	52.4	51.6	46.4	40.3	35.4	32.5
E. MIN. T.	-5	1	11	20	28	27	34	37	23	16	4	2



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	Eurhynchio (oregani) - Gaultherio (shallonis) - Mahonio (nervosae) - Holodisco (discoloris) - Pseudotsugetum menziesii	
2	1	A	2	2		Plagiomnio (insignis) - Leucolepido (menziesii) - Achlydo (triphyllae) - Polysticho (muniti) - Alno (rubrae) - Aceretum macrophylli	
3	1	A	² / ₁	² / ₇	- / a	Plagiomnio (insignis) - Leucolepido (menziesii) - Polysticho (muniti) - Alno (rubrae) - Acero (macrophylli) - Pseudotsugetum menziesii	
4	1	A	1	7	a	Plagiomnio (insignis) - Polysticho (muniti) - Pseudotsugo (menziesii) - Abieto (grandis) - Thujetum plicatae	
5	1	A	1	7	a	Plagiomnio (insignis) - Polysticho (muniti) - Adianto (pedati) - Asaro (caudati) - Pseudotsugo (menziesii) - Abieto (grandis) - Thujetum plicatae	
6	1	A	² / ₁	² / ₇	- / a	Rhizomnio perssonii - Athyrio (filicis-feminae) - Lysichito (americanus) - Alno (rubrae) - Thujetum plicatae	
7	1	A	2	2		Aulacomnio (palustris) - Carico (obnuptae, sitchensis) - Spiraeo (douglasii) - Pino (contortae) - Alnetum rubrae	

Please give information about further communities on a separate sheet.

H. Roemer

CROWN LAND SE OF SKUTZ FALLS, COWICHAN RIVER

Main features of proposal: 30 to 50 years old second growth stands of Douglas-fir, alder, maple and cottonwood, several swamps and marshes.

(Visited on Oct. 11, 1973 with Ray Thomas, Ranger, Lake Cowichan.)

The proposed areas are located on the southern margin of the wide Cowichan Valley and contain mainly undulating terrain between 400 and 600 feet elevation, except in their SW corners where the sidehills rise to 900 (smaller alternative) and 1200 feet (larger alternative). Apart from two portions along the river which show outwash materials on the surface, most of the two areas is covered with glacial till. A few small streams collect from the vicinity and drain several swamps located mainly in the larger alternative.

The most common and extensive forest type is one of Douglas-fir and salal which contains only few other species due to its density and young age:

Pseudotsuga menziesii
(*Thuja plicata*)

Gaultheria shallon
Mahonia nervosa
Vaccinium parvifolium
Rubus ursinus

Pteridium aquilinum
Festuca subuliflora
Trientalis latifolia
Festuca occidentalis
(*Achlys triphylla*)

Eurhynchium oregonum

This uniform Douglas-fir forest occurs on coarse till while a more diverse and somewhat open Douglas-fir community is restricted to the extremely fast draining outwash gravels (NW corner of area). In a mature stand which remained unlogged on the same material outside the proposed reserve the final species combination can be observed. In the following, those species which are additional to the basic set and occur only in this mature stand are listed in a separate block.

Pseudotsuga menziesii
(*Thuja plicata*)
(*Tsuga heterophylla*)
Cornus nuttallii

Gaultheria shallon
Holodiscus discolor
Mahonia nervosa
Vaccinium parvifolium
Rosa gymnocarpa

(list contd.)

Pteridium aquilinum
Achlys triphylla
Chimaphila umbellata
Chimaphila menziesii
Goodyera oblongifolia
Linnaea borealis
Viola sempervirens
Campanula scouleri
Festuca occidentalis
Trientalis latifolia
Festuca subuliflora

Hylocomium splendens
Eurhynchium oreganum
Rhytidiadelphus triquetrus
Homalothecium megaptilum
Pleurozium schreberi

Amelanchier alnifolia
Mahonia aquifolium
Symphoricarpus mollis v. hesperius
Lonicera ciliosa

Melica subulata
Bromus vulgaris
Anemone lyallii
Lathyrus nevadensis

Depressions and small stream valleys contain all gradations of moist and wet sites. Of the wettest sites, only the small swamp located in the smaller alternative was examined. Spot checks would have to establish if the larger swamps to the east are similar:

Siraea douglasii
Carex obnupta
Carex sitchensis
Carex exsiccata
Comarum palustre
Viola palustris
Gentiana sceptrum
Sphagnum fallax
Aulacomnium palustre

These open swamps are surrounded by deciduous forest types, primarily of alder and cottonwood. Cottonwoods have apparently spread after logging and will probably be pushed back by succession to their original alluvial sites which are restricted to the vicinity of the small streams. In this particular section the Cowichan River itself provides no alluvial cottonwood sites as it has cut a deep-sided canyon. Mixed deciduous stands on impervious materials in depressions contain *Cornus stolonifera*, *Carex obnupta*, *Stachys cooleyae*, *Oenanthe sarmentosa*, *Lycopus uniflorus*, *Ranunculus flammula*, *Fontinalis* sp. and others. Their soils are too poorly drained for the growth of conifers.

However, transitional sites between these and the average Douglas-fir forest and sites where wetness is due to faster moving seepage may be highly productive for commercial species although frequently taken over by dense alder and maple regeneration. Where Douglas-fir has not been planted, these sites will now successionaly move towards a hemlock-red cedar combination. A typical species combination for the present stands is as follows:

Alnus rubra
Tsuga heterophylla
Pseudotsuga menziesii
Thuja plicata
Abies grandis

(list contd.)

Rubus spectabilis
 Vaccinium parvifolium
 Ribes lacustre
 Rubus ursinus

Polystichum munitum
 Achlys triphylla
 Carex deweyana
 Adenocaulon bicolor
 Lactuca muralis
 Bromus vulgaris
 Galium triflorum
 Carex hendersonii
 (Blechnum spicant)

Eurhynchium stokesii
 Leucolepis menziesii
 (Eurhynchium oreganum)

A further group of species is strongly bound to alluvial situations, but in the few places where these species occur together with conifers, some of the highest site qualities for Douglas-fir and red cedar are indicated:

Oplopanax horridus
 Adiantum pedatum
 Asarum caudatum
 Mitella ovalis
 Viola glabella
 Plagiomnium insigne

The extent of "swordfern sites", the classical high-production sites for Douglas-fir can only be estimated with the present information. But it too will not be large in comparison to the whole area. On the attached forest cover map these sites appear to correlate best with units marked as FD ...-G (HFD ...G).

A distinctive community of small extent is the alder-skunk cabbage community occurring in seepage pockets on deep muck soil. Its characteristic group of herbaceous species is:

Lysichitum americanum
 Athyrium filix-femina
 Equisetum telmateia
 Streptopus amplexifolius

It has been observed on the upper edge of the slope close to the river, but is likely to occur also elsewhere in the proposed area. Its margins are highly productive sites for red cedar and (as evidenced by huge stumps) even for Douglas-fir.

Evaluation

This is a large and varied area whose vegetation is probably quite typical of the forest pattern to be found naturally in the Cowichan Valley, one of the classical areas of early logging on Vancouver Island. Even though second growth, this area may be as close as one could get to a representative reserve for the whole region, as mature stands are hardly left at all, and if remaining, are unavailable or of the wrong kind.

7.
(cont.)

2

Soil

Community Reference Number	Soil type	Other notes
1	ABC F 5	Dystric Brunisol - Mini Podzol
2	ABC /AGC F5/ P ₂	Gleyed Brunisol
3	ABC /AGC F5/P ₂	Gleyed Brunisol
4	ABC /AGC F5/P ₂	Gleyed Brunisol
5	ABC /AGC F5/P ₁	Gleyed Eutric Brunisol
6	AGC P ₁	Subneutral Gleysol with Black Muck
7	AGC P ₂	Acidic Gleysol
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

9. Landscape

1. General Landscape (give brief description)
 Hills characteristic of eastern slopes of Vancouver Island

2. Relief Type

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

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		
Standing		
Running		

2. Standing Water

	Permanent	Intermittent	Unproductive	Productive
Swamps	X		X	
Ponds				
Lakes				

3. Running Water

	Permanent	Intermittent
Springs, cold	X	X
Springs, hot		
Streams	X	X
Rivers		

4. Special freshwater features

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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

2. Salt and Brackish none Cowichan River with its Skutz Falls

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		X		
Aves	X	X						X	X	X		
Reptilia		X										
Amphibia		X										
Pisces		X										
Insecta	X	X						X		X		

in Cowichan River

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			X						
Gymnospermae	X	X			X						
Pteridophyta	X	X			X						
Bryophyta	X	X			X	X					
Lichens and Algae	X	X			X						

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

Asarum caudatum (is rather rare on Vancouver Island)

15. Exceptional Interest of IBP Area*

Secondary forest which might serve instead of the virgin old forest

 in this biogeoclimatic zone (CDFb), because the latter was mostly

 removed by logging.

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

by logging roads

slash fires?

3. Additional details on each type of impact attached?

Yes No ^X

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

providing that the present status does not correspond to the previous virgin status

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

Sheet attached? Yes No

2. List main maps available for the IBP Area.

List attached? Yes No

92 B/13 West Half
(Duncan)

3. Aerial photographs for the IBP Area available?

For whole areaX..... For part of area None
B C 7082 100-102 (40 ch.) (20 ch. coverage is also available)

19. Other Relevant Information

included in the report of Dr. Hans L. Roemer

Signed H.L. Roemer, R. Thomas
(Surveyor)
and V.J. Krajina
V.J. Krajina

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

Vladimir Krajina

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

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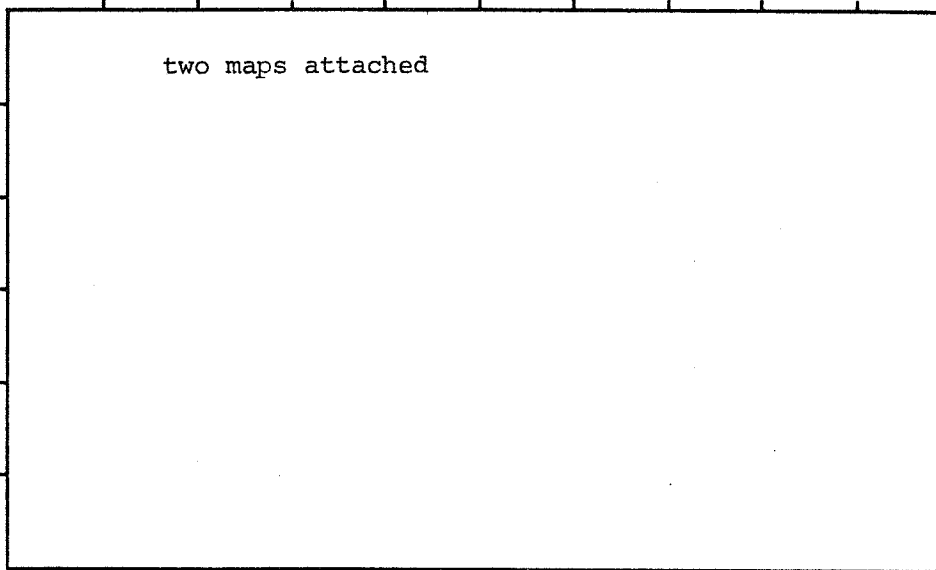
Serial Number

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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 (b) from records
 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 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.