

APPLICATION FOR ECOLOGICAL RESERVE

1. Legal description of the area (or general "Metes and bounds" description)
Part of the Chemainus River delta and estuary (encompassing also the delta and estuary of Bonsall Creek), bounded roughly by Vancouver Island, Mainguy Island, and the Shoal Islands; including tidelands and estuarine waters below mean high tide line.
2. Geographical location (relate to nearest settlement, mountain, river, etc.)
Chemainus River delta and estuary, inside the Shoal Islands, between Crofton and Chemainus
3. Indicate the biogeoclimatic zone of which the reserve is representative.
CDFa + Coast Littoral Biotic Area
4. Approximate total acreage.
250 ha (618 acres)
5. Purpose of the reserve.
Conservation of the inner, relatively undisturbed Chemainus River delta and estuary.
 - (a) Primary (state acreage)
250 ha (618 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.

treeless

Jim Pojar *J. B. Foster*

Signature _____
Jim Pojar, J.B. Foster

I.B.P. Surveyor
K. COATES, K. Sawatsky

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

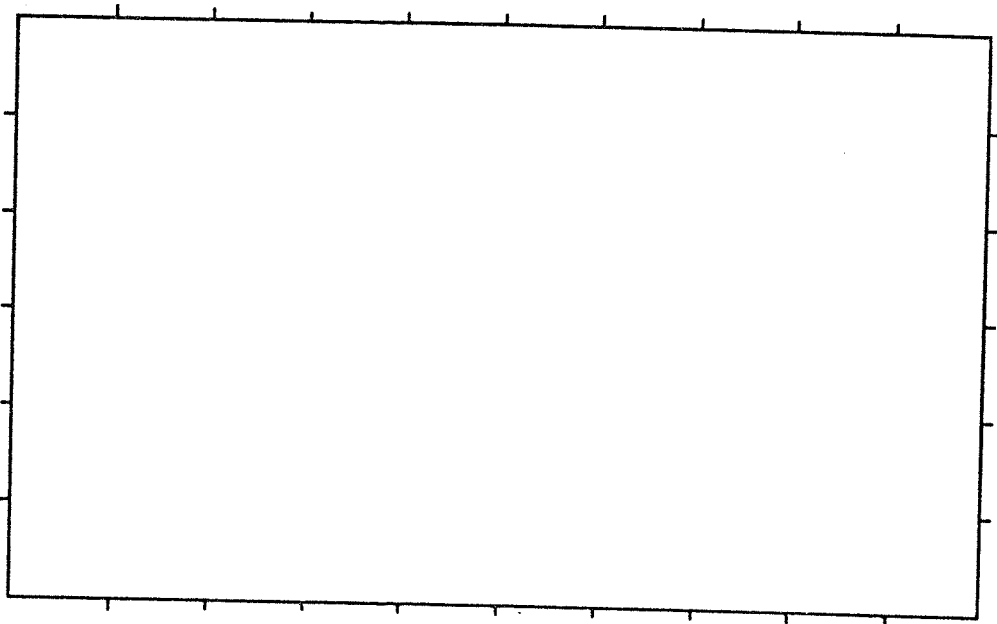
Serial Number

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For Data-Centre Use only

1. 1. Name of surveyor *J. Pojar, *J.B. Foster, **K. Coates, ***K. Kennedy Sawatsky
2. Address of surveyor *Ecological Reserves Unit, Victoria, B.C., V8V 1X5
 **Dept. of Biology, Univ. of Victoria, Victoria, B.C., V8W 2Y2
 ***Dept. of Plant Science, U.B.C., Vancouver, B.C., V6T 1W5
3. Check Sheet completed (a) on site X (b) from records X
4. Date Check Sheet completed September, 1976

2. 1. Name of IBP Area Chemainus River estuary
2. Name of IBP Subdivision (or serial letter) (CDFa)
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.

Ladysmith, 5 1/2 m

Josling Pt

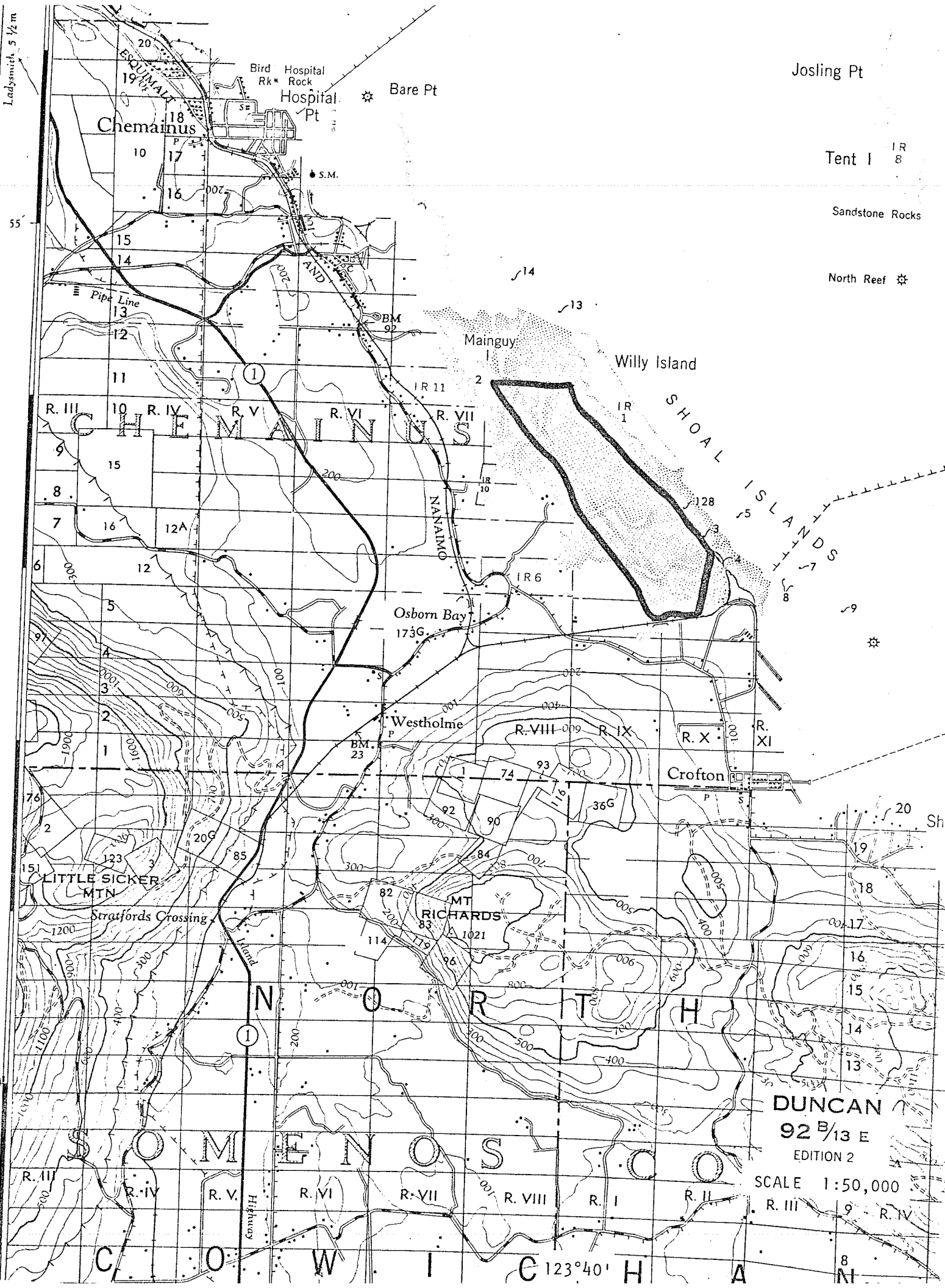
Tent I IR 8

Sandstone Rocks

North Reef

55°

48°50'

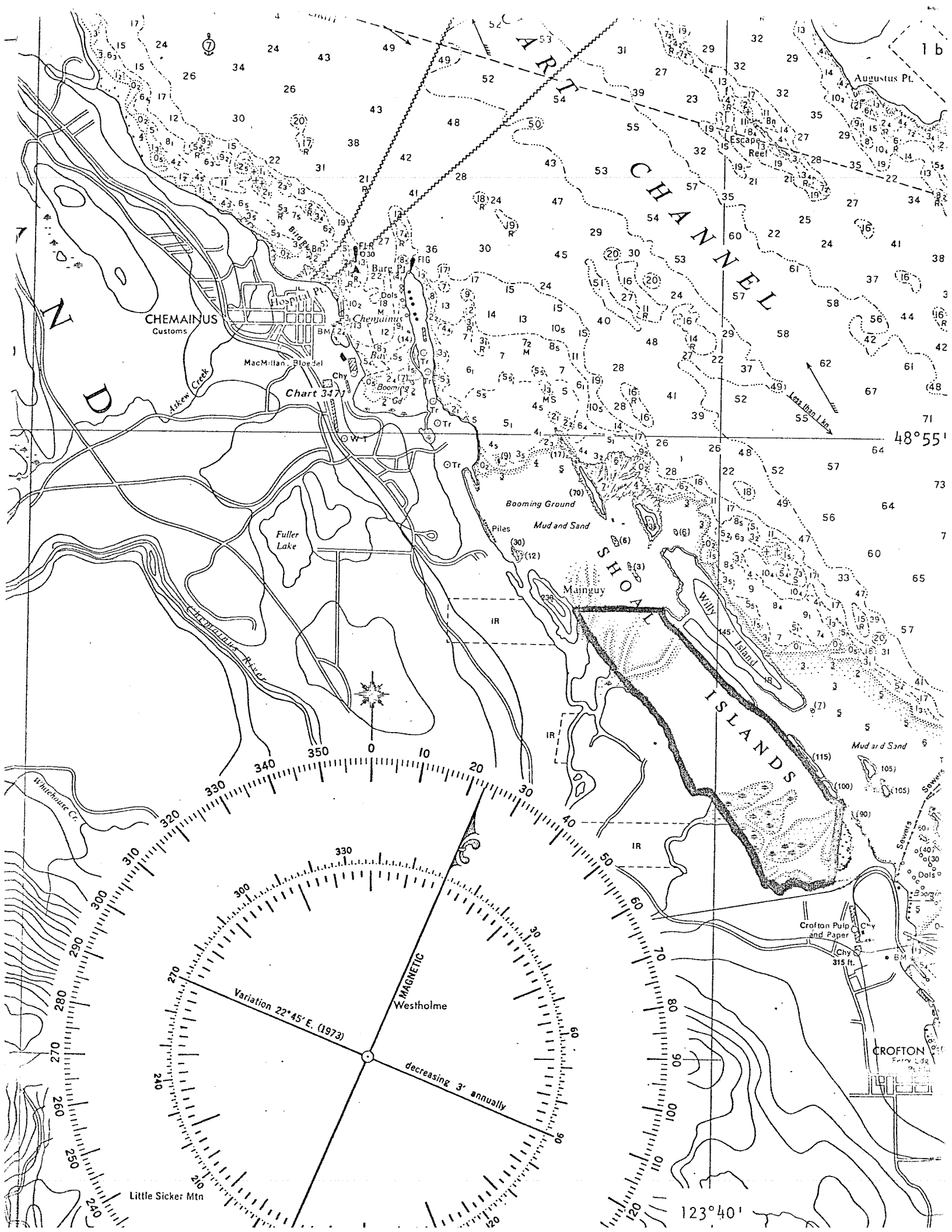


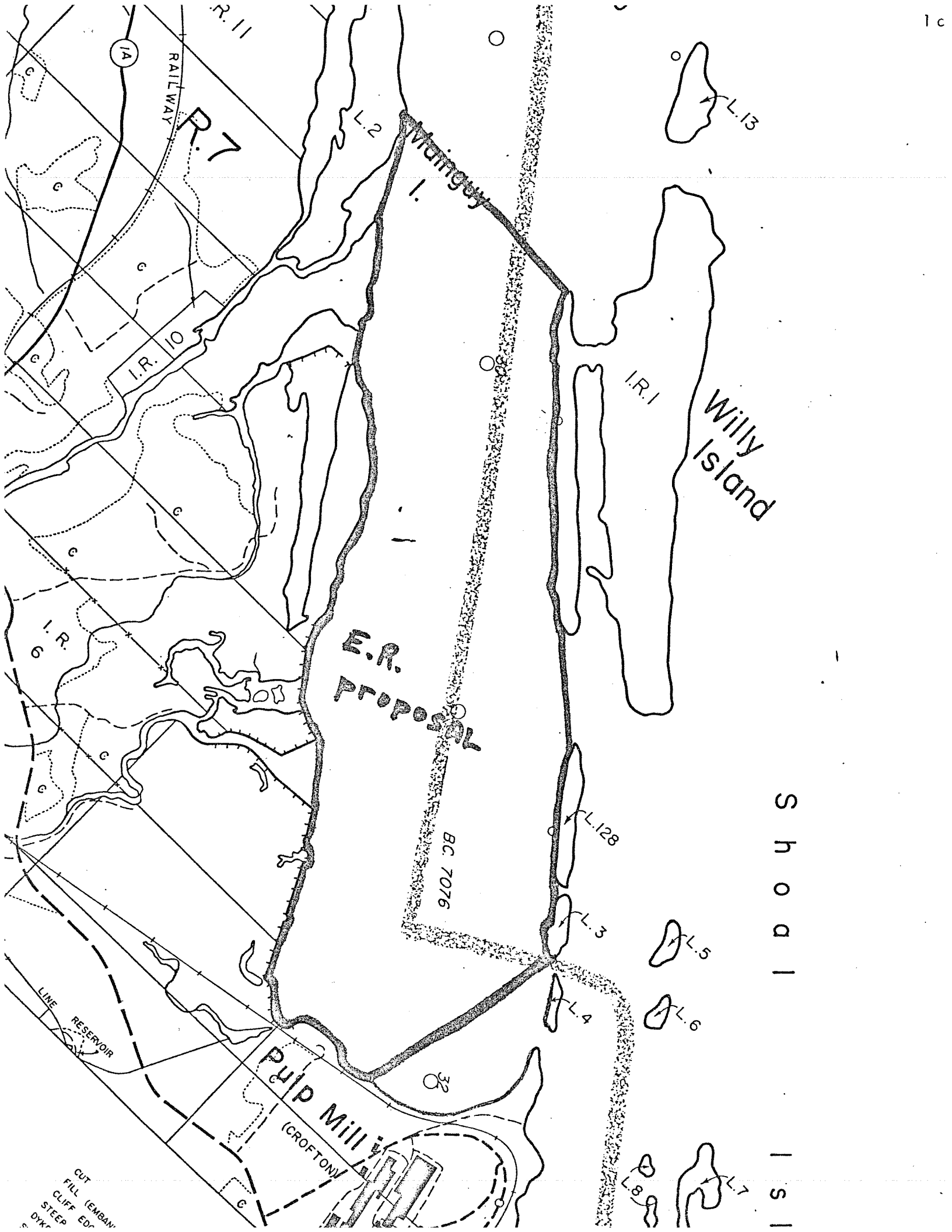
DUNCAN 92 B/13 E EDITION 2

SCALE 1:50,000

123°40'

8





3. Location of IBP Area*

1. Latitude..... 48 ° 52.8-54.1' N Longitude..... 123 ° 39.0-41.0' W
2. Country Canada
- State or Province British Columbia County Duncan
- (State or Province County)

4. Administration

- National 1. Official category Tidelands
2. Address of administration Crown Land, Land Management Branch
- B.C. Dept. of Environment
- Parliament Buildings
- Victoria, B.C. V8V 1X5
-
-

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*

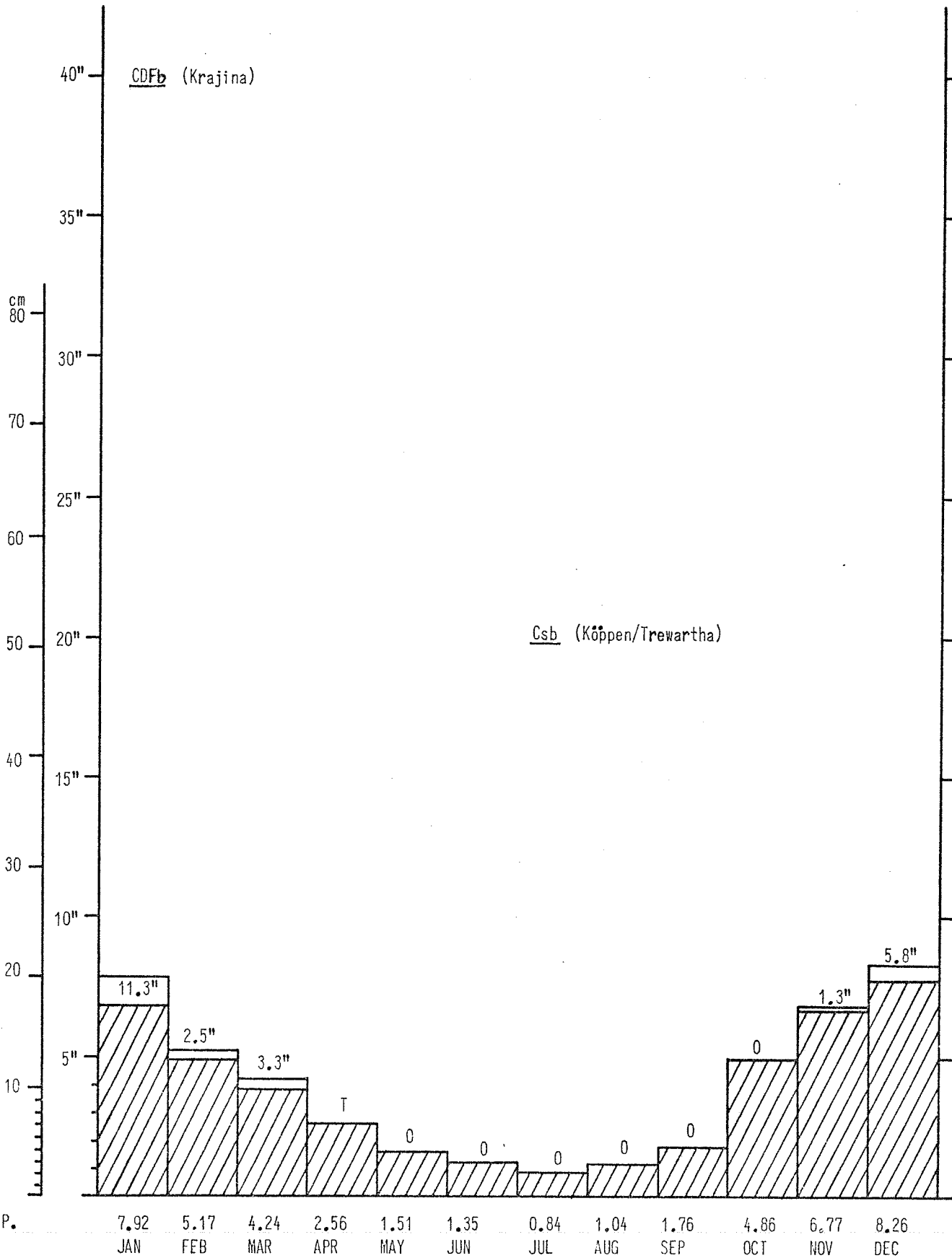
1. Surface area (state units of measurement) 250 ha (618 acres)
2. Altitude (state units of measurement) Maximum } ± sea level
- Minimum }

6. Climate

Nearest climatological station :

1. Name Chemainus*; Crofton**
2. Climatological station on IBP Area*? Yes No X
3. If (2) not, distance from edge of IBP Area* (state units) 3 km*; 5 km**
- NW*; S**
4. Direction from IBP Area* X - for Chemainus
5. Additional data sheet attached? Yes No

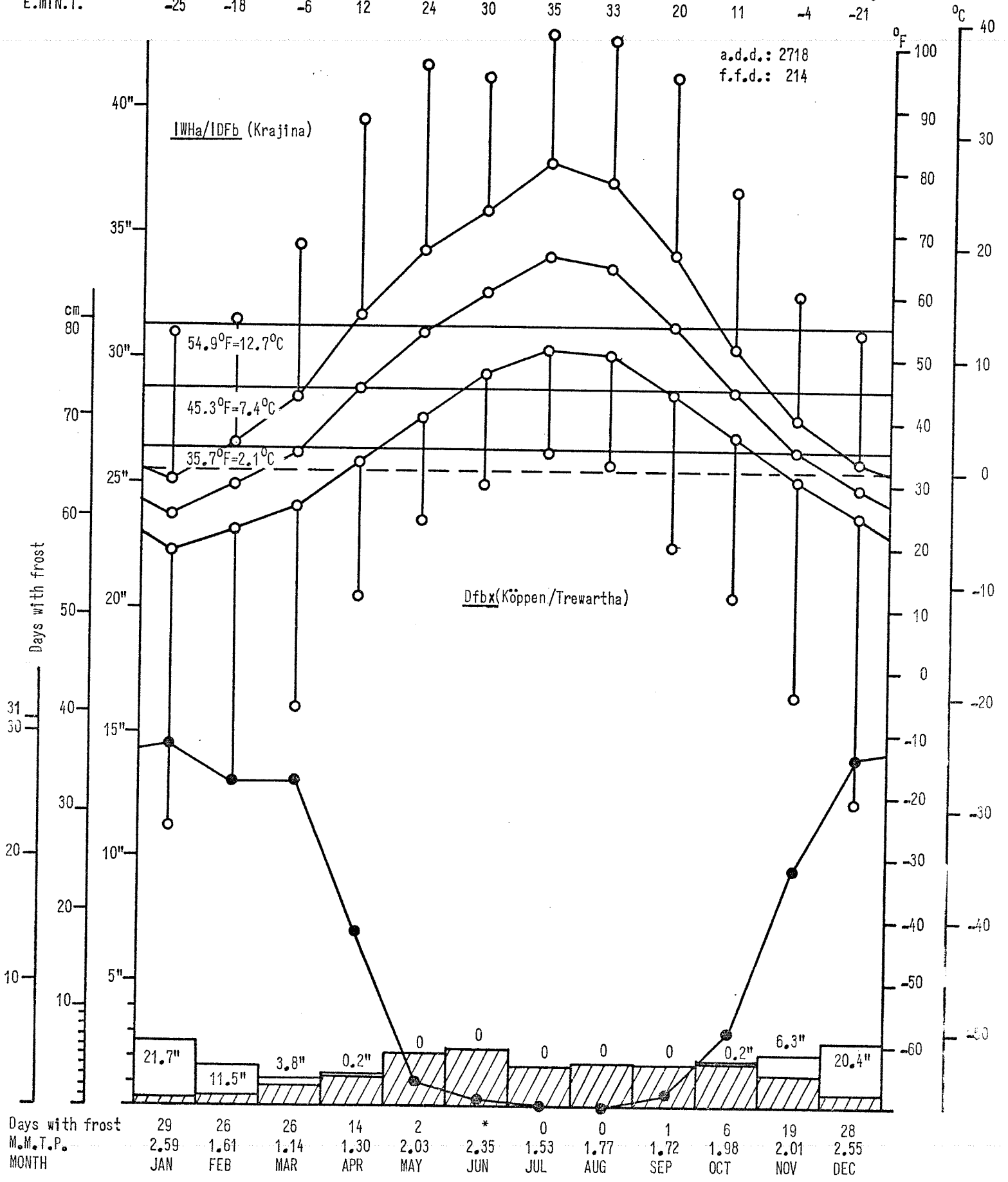
CHEMAINUS: 48°55'N, 123°43'W, 40' ASL. Record: 25-30 years.
A.M.T.P. 46.28", A.M.S.F. 24.2", snow % A.M.T.P.: 5.22.



M.M.T.P.
Months

Months above 50°F: 5, below 32°F: 3, A.M.T.P. 22.58", A.M.S.F. 64.1", snow % A.M.T.P.: 28.39, days with frost, yearly: 151.

E.MAX.T.	54	56	68	88	97	95	102	101	95	77	60	54
M.D.MAX.T.	30.4	36.1	43.8	56.8	67.0	73.1	81.2	78.1	66.4	51.8	40.3	33.9
M.D.T.	24.9	29.5	35.0	45.1	54.0	60.3	66.2	64.1	55.3	44.7	35.3	29.5
M.D.MIN.T.	19.3	22.9	26.2	33.4	40.9	47.5	51.1	50.1	44.2	37.6	30.2	25.0
E.MIN.T.	-25	-18	-6	12	24	30	35	33	20	11	-4	-21



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	M	2	2		<i>Salicornia virginica</i> - <i>Fucus</i> spp. - <i>Oscillatoria</i> (on mud flat)	
2	1	M	2	2		<i>Salicornia virginica</i> - <i>Distichlis spicata</i> - <i>Tri-glochis maritimum</i> - <i>Scirpus maritimus</i> salt marsh	
3	1	M	2	2		<i>Carex lyngbyei</i> brackish marsh	
4	1	M	2	2		<i>Deschampsia caespitosa</i> - <i>Juncus balticus</i> - <i>Hordeum jubatum</i> - <i>Potentilla pacifica</i> - <i>Achillea millefolium</i> brackish grass-forb meadow	
						- there are extensive eelgrass (<i>Zostera marina</i>) beds in the subtidal areas of the outer estuary (i.e. outside of the Shoal Islands), but very little within the proposal	
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Please give information about further communities:

7.
(cont.)

2

Soil

Community Reference Number	Soil type	Other notes
1	I ₂ /P ₂	gleyed regosol
2	P ₂ /0	humic gleysol
3	I ₂ /P ₂	gleyed regosol
4	P ₂ /0	humic gleysol
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

9. Landscape

1. General Landscape (give brief description) tidal mudflats, marshes, and estuarine waters inside a group of barrier islands that lie across the mouth of the Chemainus River

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) protected by barrier islands (Shoal Islands)

10. Coastline of IBP Area* the whole proposal area is very protected

1. Protected bays and/or inlets Many Few None

2. Substratum. ~~% of coast~~ of proposal

Rock	Boulder Beach	Shingle Beach	Sand Beach	Shell Beach	Mud	Coral	Ice
			1%	1%	98%		

3. Physiography. ~~% of coast~~ of proposal

Cliffed	Sloping	Flat
		100%

4. Special Coastal Features (list) estuary

5. Tide. Maximum range (state units of measurement) 4.1 m

6. Total length of coastline :

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

11. Freshwater within IBP Area*

NONE

1.

Permanent Intermittent

General

Standing

Running

2. Standing Water

Permanent Intermittent Unproductive Productive

Swamps

Ponds

Lakes

3. Running Water

Permanent Intermittent

Springs, cold

Springs, hot

Streams

Rivers

4. Special freshwater features

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12. Salt and Brackish Water within IBP Area*

Salt Lakes

Estuaries

X

Lagoon

Salt pools

.....

.....

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

1. Fresh

--

Lake

--

River

X

Stream

X

Chemainus River, Bonsall Creek

2. Salt and Brackish

Estuary	Salt lake	Salt pool	Lagoon	Ocean		
				X		

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										
Aves	X	X		X	X	X		X	X	X		
Reptilia												
Amphibia												
Pisces									X			
Insecta												
Mollusca (bivalves)	X	X										
Crustacea	X	X										
Polychaeta	X	X										

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

There is a good range of intertidal habitats and invertebrate fauna, and
the adjacent benthic fauna (some of which uses the estuary at high tide)
is rich. The Chemainus River estuary provides very important migration,
wintering, and nesting habitat for birds, especially waterfowl, shore-
birds, other waterbirds, and raptorial birds. It is also important for
Columbia black-tailed deer, marten, short-tailed weasel, mink, river
otter, and raccoon.

4. Flora

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

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

- needs further investigation

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15.

Exceptional Interest of IBP Area*

The Chemainus River delta, built up behind the barrier of the Shoal Islands, is geomorphologically unique in British Columbia. The estuary is a more or less undisturbed, extremely productive, natural oasis, within an agricultural, industrial and residential landscape. It is the least disturbed estuary on southern Vancouver Island. Biologically and geologically, it is one of the most interesting estuaries in British Columbia, and already has a history of scientific research.

16. Significant Human Impact

1. General : None in entire IBP Area*

None in part of IBP Area*

Impact on entire IBP Area* X - pollution (including mercury) from the Crofton pulp mill

2. Particular

	Past impact	Present impact	Trend			
			Increasing	Decreasing	No change	No information
Cultivation	X				X	
Drainage	X				X	
Other soil disturbance (dyke construction)	X				X	
Grazing						
Selective flora disturbance						
Logging	X	X		X		
Plantation						
Hunting	X	X		X		
Removal of predators	X	X				
Pesticides	?	?				
Introductions — plants	X	X		X		
Introductions — animals						
Fire						
Permanent habitation						
Recreation and tourism	X	X	X			
Research	X	X	X			

- logging in Chemainus River watershed, and log booming in the estuary; old log debris should be removed by responsible companies

- on adjacent farmlands

3. Additional details on each type of impact attached?

X
Yes No

Effects of past log booming (bark deposition, etc.) are slight in inner estuary. Provision should be made, if necessary, for access by motorboat for landowners with frontage on the reserve proposal.