Report No. 2-48

APPLICATION FOR ECOLOGICAL RESERVE

1. Legal description of the area (or general "Metes and bounds" description)

   Refer to the attached map of the area, which outlines the lands being applied for.

2. Geographical location (relate to nearest settlement, mountain, river, etc.)

   On the breaks of the Peace River, in the vicinity of Bear Flats, near Fort St. John, B.C.

3. Indicate the biogeoclimatic zone of which the reserve is representative. The Boreal Black and White Spruce Biogeoclimatic Zone. Edaphic pyroclimax of boreal white spruce (Picea glauca) and black spruce (Picea mariana), of which white spruce (Picea glauca), is the edaphic climax. Presently the plant association is aspen/grassland.

4. Approximate total acreage.

   1818 acres (736 hectares)

5. Purpose of the reserve. To establish a benchmark on the Peace River breaks to compare the surrounding land. Presently nearly 90% of the Peace River breaks section of British Columbia is privately owned, or leased. This has resulted in numerous conflicts with land uses and wildlife values. Establishing an Ecological Reserve on the area, would serve to preserve at least a portion of this Peace River breaks in a natural state.

   (a) Primary (state acreage)

   1818 acres

   (b) Others if any (state acreage)

   N/A

   (c) Buffer areas (state acreage)

   N/A

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.

Signature T.C. Brayshaw, C.C. Chuang, J. Elliot, B. Webster

I.B.P. Surveyor

Appl. no. 248

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 * Dr. J. Elliott and B. Webster; **T.C.Brayshaw and C.C.Chuang

2. Address of surveyor * 9711 - 100th Avenue (Fish & Wildlife Branch)
Fort St. John, B.C.
** B.C. Provincial Museum, Victoria, B.C. V8W 1A1

3. Check Sheet completed (a) on site X (b) from records X

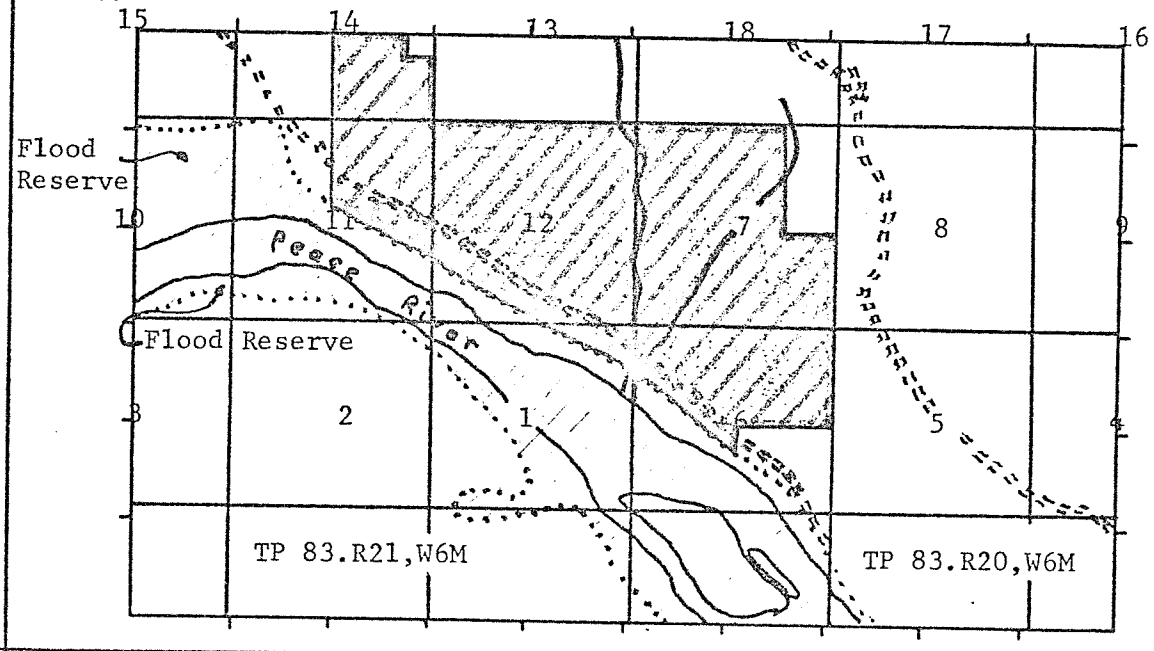
4. Date Check Sheet completed September 1975

2. 1. Name of IBP Area Bear Flats

2. Name of IBP Subdivision (or serial letter) BWBS (Peace River Parklands)

3. Map of IBP Area* showing boundaries attached? Yes X No .....

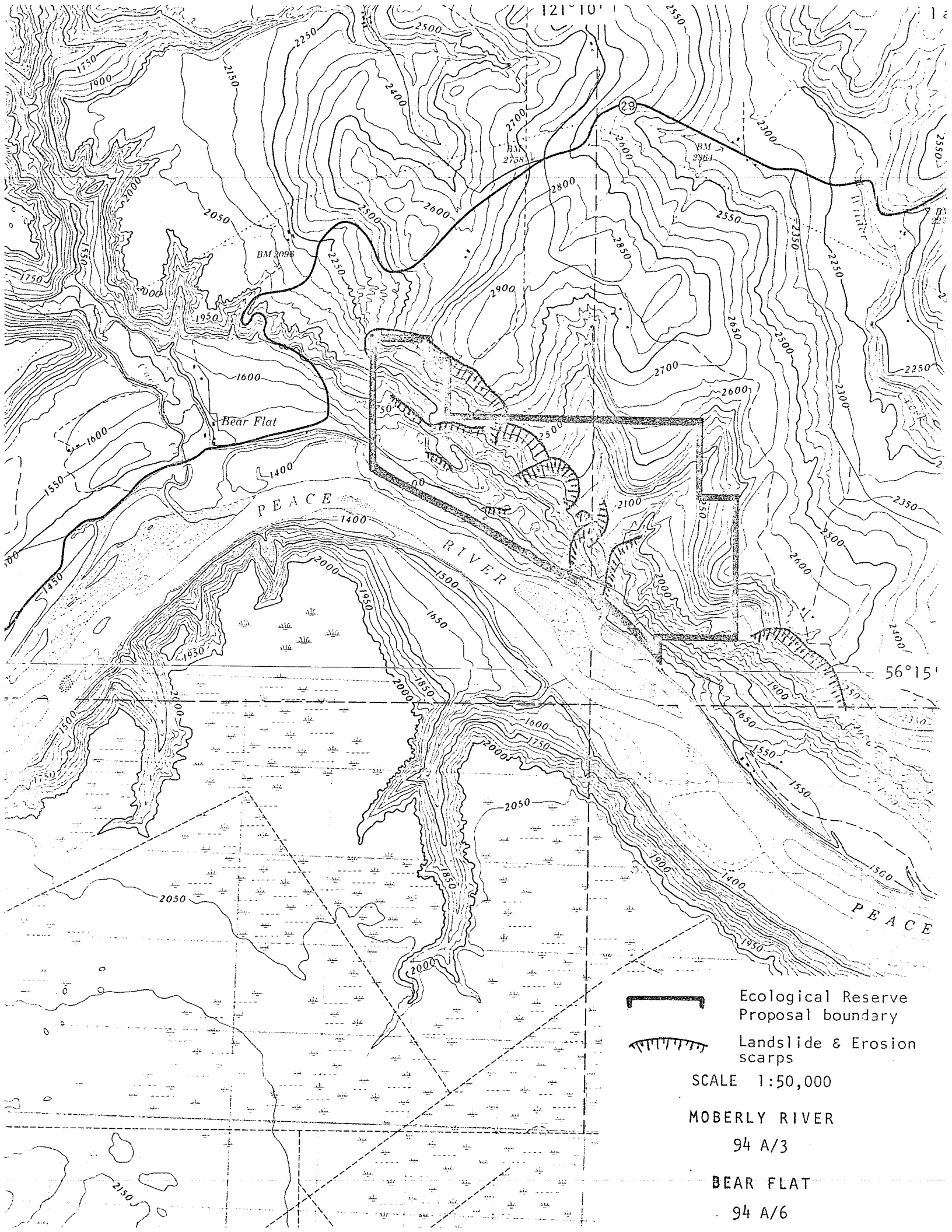
4. Sketch map of IBP Area*. Please mark direction of north, the scale and grid numbers where applicable.



N

Scale: 1" = 1 mi

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


121°10'
56°15'
29
BM 2756
BM 2361
BM 2096
Bear Flat
PEACE
RIVER
PEACE
Ecological Reserve Proposal boundary
Landslide & Erosion scarps
SCALE 1:50,000
MOBERLY RIVER
94 A/3
BEAR FLAT
94 A/6

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3. **Location of IBP Area***

1. Latitude 56 ° 15.05-17' N Longitude 121° ° 8.2-12.2' W
2. Country Canada

State or Province British Columbia County Caribou

(State or Province ~~County~~ Peace River Land District

4. **Administration**

National 1. Official category Crown Land

2. Address of administration Department of Lands
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) approximately 1818 acres
2. Altitude (state units of measurement) Maximum 2,500 feet (760 m)
Minimum 1,500 feet (455 m)

6. **Climate**

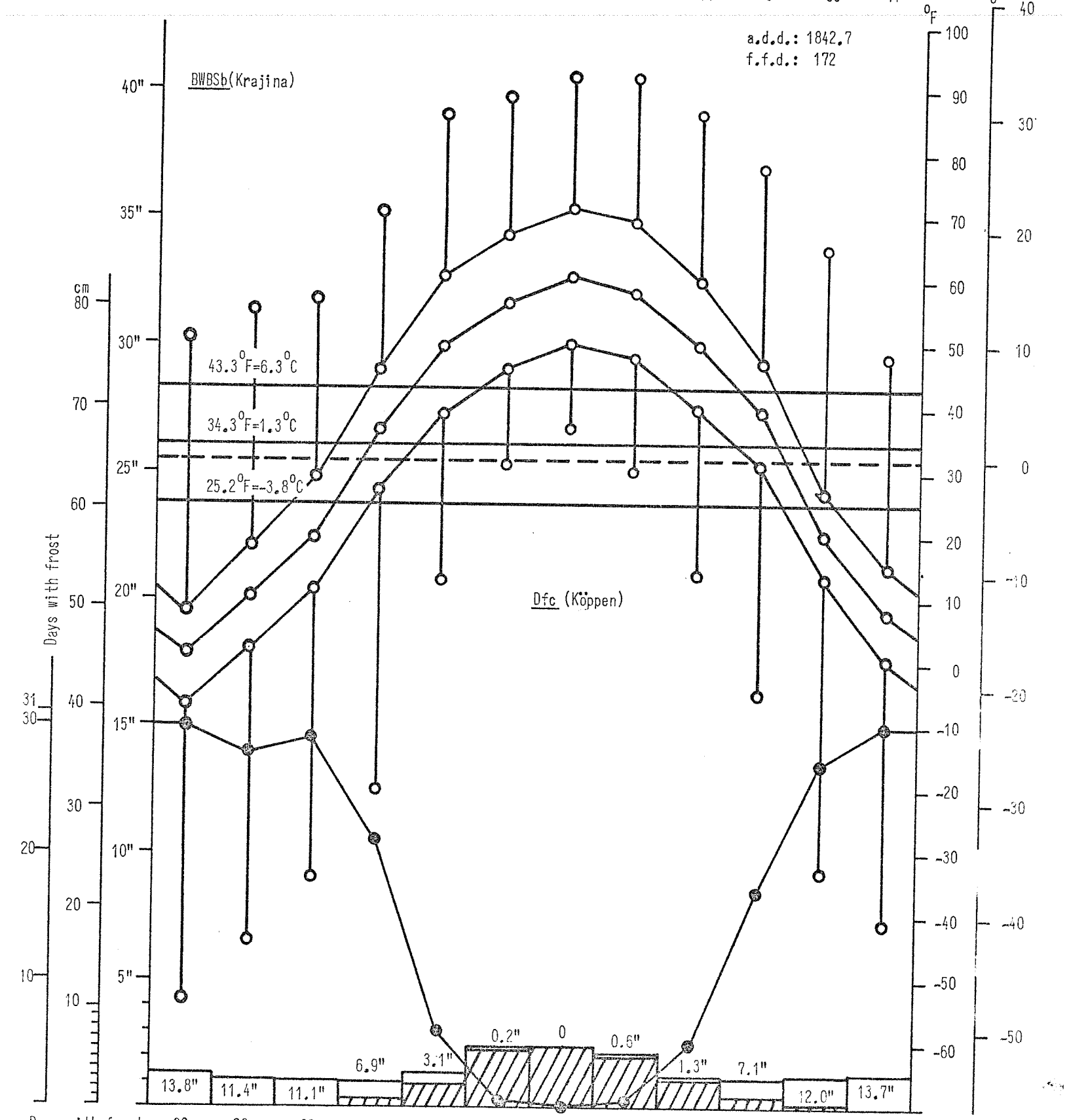
Nearest climatological station :

1. Name Fort St. John Airport
2. Climatological station on IBP Area*? Yes ..... No X
3. If (2) not, distance from edge of IBP Area* (state units) 26 km (16 mi.)
4. Direction from IBP Area* East
5. Additional data sheet attached? Yes X No .....

FORT ST. JOHN AIRPORT 56°14'N, 120°44'W, 2275' ASL. Record: 25-29 years.

Months above 50°F: 3, below 32°F: 5, A.M.T.P. 17.71", A.M.S.F. 81.2", snow % A.M.T.P.: 45.85, days with frost, yearly: 193.

E.MAX.T.	51	55	57	71	86	89	92	92	86	78	65	48
M.D.MAX.T.	8.7	18.8	29.2	45.9	60.6	67.0	71.2	69.0	59.7	47.5	27.0	15.4
M.D.T.	1.0	10.5	20.4	36.5	49.7	56.5	60.6	58.4	49.9	39.5	20.3	8.1
M.D.MIN.T.	-6.8	2.2	11.6	27.0	38.8	46.0	50.0	47.8	40.0	31.4	13.6	0.8
E.MIN.T.	-53	-44	-34	-20	13	31	37	30	14	-5	-33	-41



Days with frost	30	28	29	21	6	*	0	*	5	17	27	30
M.M.T.P.	1.31	1.10	1.07	0.92	1.30	2.43	2.47	2.11	1.28	1.17	1.26	1.29
MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

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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	2	1		*Populus tremuloides - Amelanchier - Rosa acicularis - Shepherdia* forest	70%
2	1	A	1/2	7	a	*Picea glauca - Populus tremuloides* forest	very small
3	1	M	2	1		*Stipa* spp. - *Agropyron* spp. grassland	10%
4	1	K	2	1		*Rosa acicularis - Symphoricarpos occidentalis - Amelanchier - Agropyron smithii*	5%
5	1	M	2	1		*Artemisia frigida - Grindelia squarrosa - Apocynum androsaemifolium - Agropyron smithii* (eroding slopes)	10%
6	1	A	2	1		*Betula neoalaskana - Cornus stolonifera - Salix rigida - Carex* spp. moist forest near water	very small
7	1	M	2	2		*Glyceria grandis - Calla palustris* pond margin	very small
8	1	M	2	2		*Juncus balticus - Puccinelia*, ± saline seep	very small
9							
10							

Please give information about further communities on a separate sheet.

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

Community Reference Number	Soil type	Other notes
1		
2		
3		Soils not surveyed.
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

E.R.P. #248 Bear Flats
- visited August 20, 1976 by T. C. Brayshaw and C. C. Chuang;
August 10, 1977 by J. B. Foster, J. Pojar

grassland on S & SW facing slopes (500 m alt.):
- Artemisia frigida, A. borealis, (A. longifolia)
- Agropyron spicatum, A. subsecundum, A. smithii
- Poa juncifolia
- (Opuntia fragilis)
- Grindelia squarrosa
- Astragalus tenellus
- Antennaria microphylla
- Aster pansus
- Erigeron? speciosus
- Potentilla hippiana, P. gracilis
- (Juniperus horizontalis)
- Anemone multifida
- Oxytropis splendens, O. campestris
- Monarda fistulosa
- Koeleria cristata
- Geum triflorum
- Androsace septentrionalis
- Muhlenbergia richardsonis

grassland @ 600 m:
- Geum aleppicum
- Elymus innovatus
- Stipa spartea, S. columbiana, S. viridula
- Agropyron spicatum, A. caninum
- Potentilla pensylvanica, P. arguta
- Rosa acicularis
- Solidago spathulata
- Linum perenne

eroding slopes:
- Atriplex dioica
- Eleagnus commutata
- Aster pansus
- Hieracium umbellatum

aspen woods:
- Aster ciliolatus
- Comandra pallida
- Heuchera richardsonii
- Galium boreale
- Betula papyrifera
- Prunus pensylvanicus
- Salix pyrifolia
- Thalictrum sp.

. . . 2

by pond:
- Cinna latifolia
- Beckmannia syzigachne
- Glyceria grandis
- Sium suave
- Calla palustris
- Lemna trisulca
- Salix rigida
- Galium trifidum
- Calamagrostis canadensis

woodland swamp:
- Betula neoalaskana
- Calamagrostis canadensis
- Rumex salicifolius

seepage/marsh:
- Scirpus lacustris
- Hordeum jubatum
- Suaeda depressa
- Hippuris vulgaris
- Ranunculus gmelini
- Puccinellia nuttalliana
- Juncus bufonius, J. balticus
- Bidens cernuum

Jim Pojar

BEAR FLATS

H. Roemer's Notes, July 3, 1981

Achillea millefolium
Agropyron smithii
Agropyron trachycaulum
Allium cernuum
Amelanchier alnifolia
Androsace septentrionalis
Anemone cylindrica
Anemone multifida
Antennaria corymbosa
Apocynum androsaemifolium
Arctostaphylos uva-ursii
Artemisia frigida
Aster laevis
Aster conspicuus
Betula glandulosa
Betula papyrifera
Carex pensylvanica
Cerastium arvense
Crepis intermedia
Deschampsia caespitosa
Eleagnus commutatus
Eleocharis kamtschatica
Elymus sp.
Epilobium sp. (v. narrow lvs)
Erigeron caespitosus
Erigeron glabellus
Festuca saximontana
Fragaria virginiana
Galium boreale
Geum aleppicum
Geum triflorum
hedysarum boreale
Hordeum jubatum
Juncus balticus
Koeleria macrantha
Lepidium sp.
Linum lewisii
Medicago sativa
Monarda fistulosa
Muehlenbergia richardsonis
Oxytropis splendens
Penstemon gracilis
Picea glauca
Poa interior
Poa pratensis
Populus tremuloides
Potentilla cf. diversifolia
Potentilla sp.
Prunus virginiana
Pulsatilla patens
Ranunculus sceleratus
Ribes idaeus
Ribes oxyacanthoides
Rosa acicularis
Salix sp.
Schizachne purpurascens
Senecio cymbalarioides
Senecio pauperculus
Smilacina stellata
Solidago missouriensis
Symphoricarpus occidentalis
Taraxacum officinale
Thalictrum venulosum
Triglochin maritima
Urtica dioica
Vicia americana
Viola adunca

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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										
2										
3		No comparison was attempted.								
4										
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) Semi-open, south facing river breaks sharply disserted by erosion gulleys.

2. Relief Type

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

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

10. **Coastline of IBP Area*** N/A

1. Protected bays and/or inlets — Many [ ] Few [ ] None [X]

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	X	
Standing		
Running	X	X

2. Standing Water

	Permanent	Intermittent	Unproductive	Productive
Swamps	X	X		
Ponds	X		X	
Lakes				

3. Running Water

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

4. Special freshwater features .....

.....

12. **Salt and Brackish Water within IBP Area*** N/A

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

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

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

2. Salt and Brackish

Estuary	Salt lake	Salt pool	Lagoon	Ocean		

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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										
Aves		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									
shrubs		X									
herbs		X									
grass	X	X									
Gymnospermae		X									
Pteridophyta											
Bryophyta .		X									
Lichens and Algae		X									

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

None

15. Exceptional Interest of IBP Area*

This area is one of the very few parcels of Crown Land remaining along the south-facing breaks of the Peace River. It would be of interest primarily for an experimental and teaching area.

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16. Significant Human Impact

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

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

Impact on entire IBP Area* ..... X .....

2. Particular

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

*Cattle

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					
Fauna		X			X				X			
Non-living	X			X			X					

18. **References**

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

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

   Raup, H.M., 1934, Phytogeographical studies in the Peace and Upper Liard River regions, Canada, with a catalogue of the vascular plants.

2. List main maps available for the IBP Area.

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

   94 A/3 (Moberly River)
   94 A/6 (Bear Flat)

3. Aerial photographs for the IBP Area available? Enclosed.

   For whole area .....X..... For part of area ..... None .....

19. **Other Relevant Information**

See p. 12.

Signed J. Elliot, B. Webster,
(Surveyor)
T.C. Brayshaw, C.C. Chuang

BEAR FLAT I.B.P. ECOLOGICAL RESERVE CANDIDATE SITE

Remarks on Condition of Area

The hill slopes on and adjacent to the area, which overlook the Peace River, are obviously very unstable. The landscape is characterized by a series of breaks and scarps that mark the sites of former massive landslides, while the hummocky terrain below these scars marks where the slumping land came to rest. The accompanying map shows in brown the locations of the main scars. A photograph of a recent (1973) landslide a few miles upstream is included to show the kind of movement.

In addition to the spasmodic massive land movement, erosion of a more insiduous form, as surface erosion, is continuous. This surface erosion affects not only the landslide scars, but also the vegetated slopes. The underlying shaly strata weather into a heavy dark clay, that when wet becomes semi-liquid and very slippery. After rain, masses of this material break loose from the steeper slopes and slither down on self-lubricating tracks, flattening the vegetation that is in the way (see photos). Such eroding slopes are revegetated only very slowly and with difficulty.

The Reserve site is subject to heavy grazing by cattle and some horses. The Reserve area is surrounded on three sides by ranches, but, in conversation with staff of the B.C. Forest Service Ranger Station in Ft. St. John, we got the impression that no grazing permits are issued for this area. It could be debated whether the grazing intensity is a cause of the surface erosion that is taking place; but it is our impression that it is at least aggravating a situation that is already highly erosion-prone.