

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.)

Lonetree Hill, Gowlland Range, Highland Land District, Saanich Peninsula, Vancouver Island

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

CDFa/b

4. Approximate total acreage.

32 acres

5. Purpose of the reserve.

Conservation of a small but outstanding sample of what still remains of the rock outcrop and dry forest communities within the Coastal Douglas-fir zone, and their associated fauna.

 - (a) Primary (state acreage)

32 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.

Pseudotsuga menziesii
Thuja plicata
Tsuga heterophylla
Pinus contorta (occ.)
Arbutus menziesii
Quercus garryana

Signature Jim Pojar, K.R. Joy and V.J. Krajina
I.B.P. Surveyor

INTERNATIONAL BIOLOGICAL PROGRAMME

SECTION CT: CONSERVATION OF TERRESTRIAL BIOLOGICAL COMMUNITIES

CHECK SHEET (Form VII) FOR SURVEY OF IBP AREAS*

To be completed with reference to the GUIDE TO THE CHECK SHEET

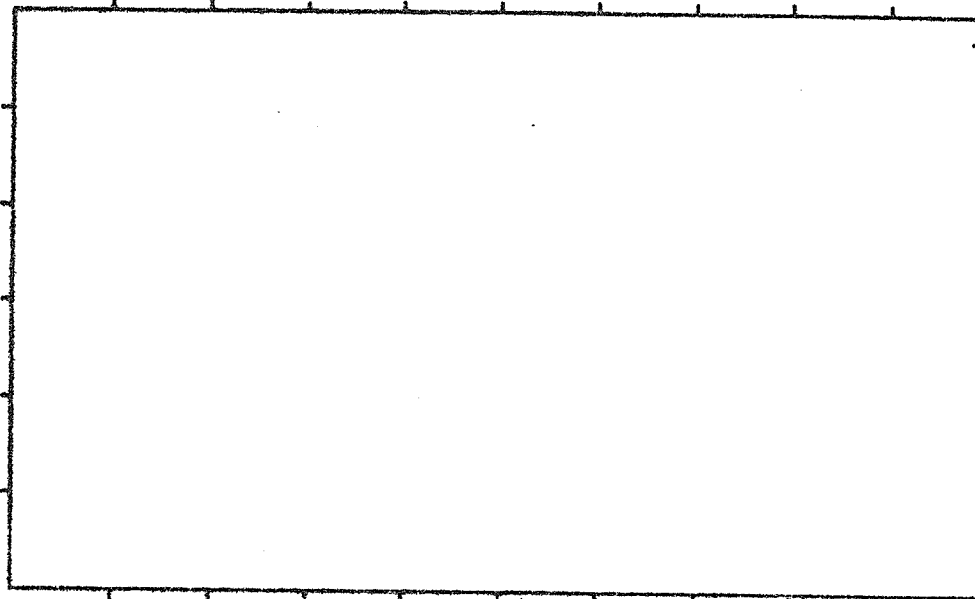
Serial Number

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For Data Centre Use only

1. 1. Name of surveyor J. Pojar*, K.R. Joy**, and V.J. Krajina***
2. Address of surveyor *Ecological Reserves Programme, Victoria, B.C.
 **Parks Branch, Dept. of Recreation & Conservation,
 Victoria, B.C.
 ***Department of Botany, U.B.C., Vancouver, B.C.
3. Check Sheet completed (a) on site (b) from records ...X
4. Date Check Sheet completed Oct. 8, 1975

2. 1. Name of IBP Area Lonetree Hill
2. Name of IBP Subdivision (or serial letter) CDFa/b
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.

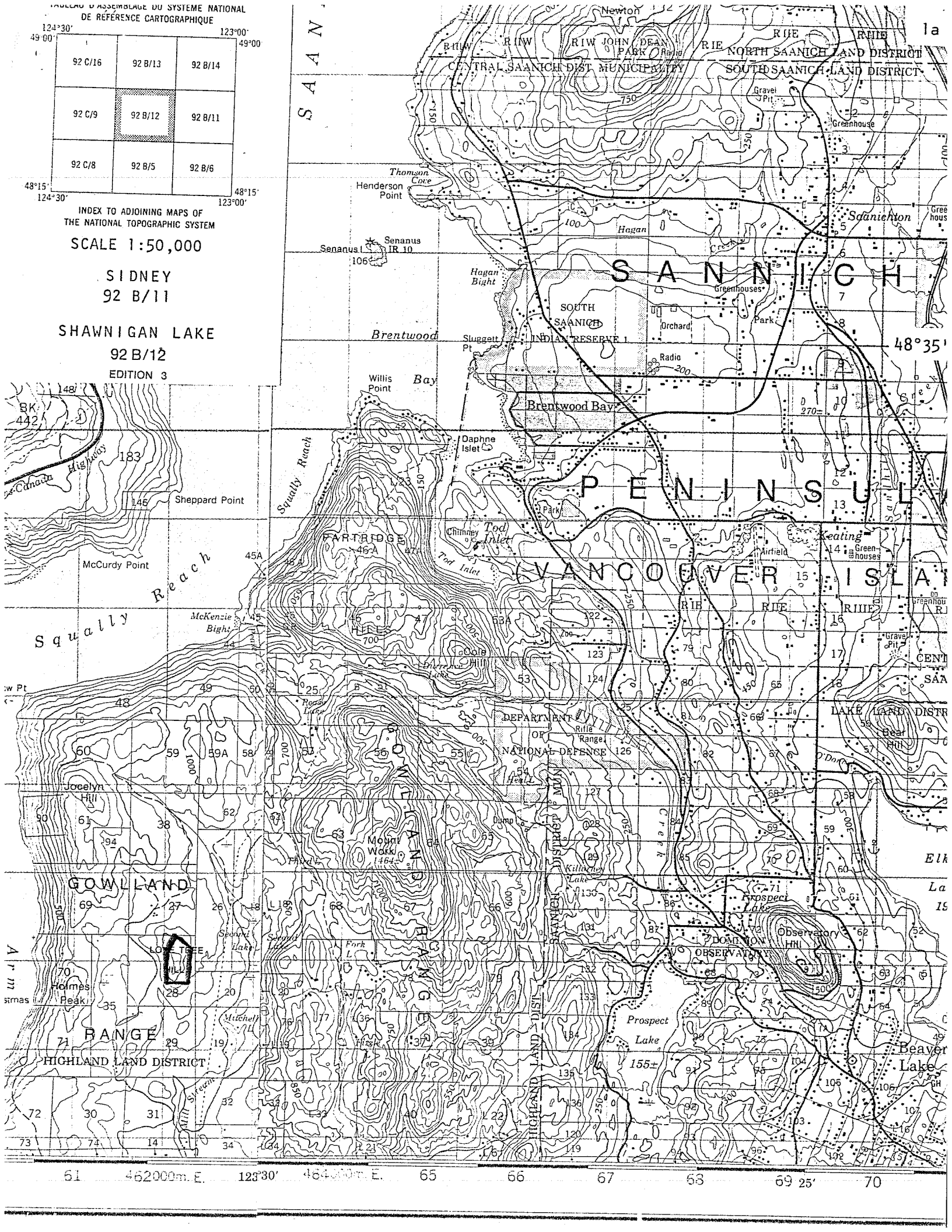
INDEX TO ADJOINING MAPS OF THE NATIONAL TOPOGRAPHIC SYSTEM

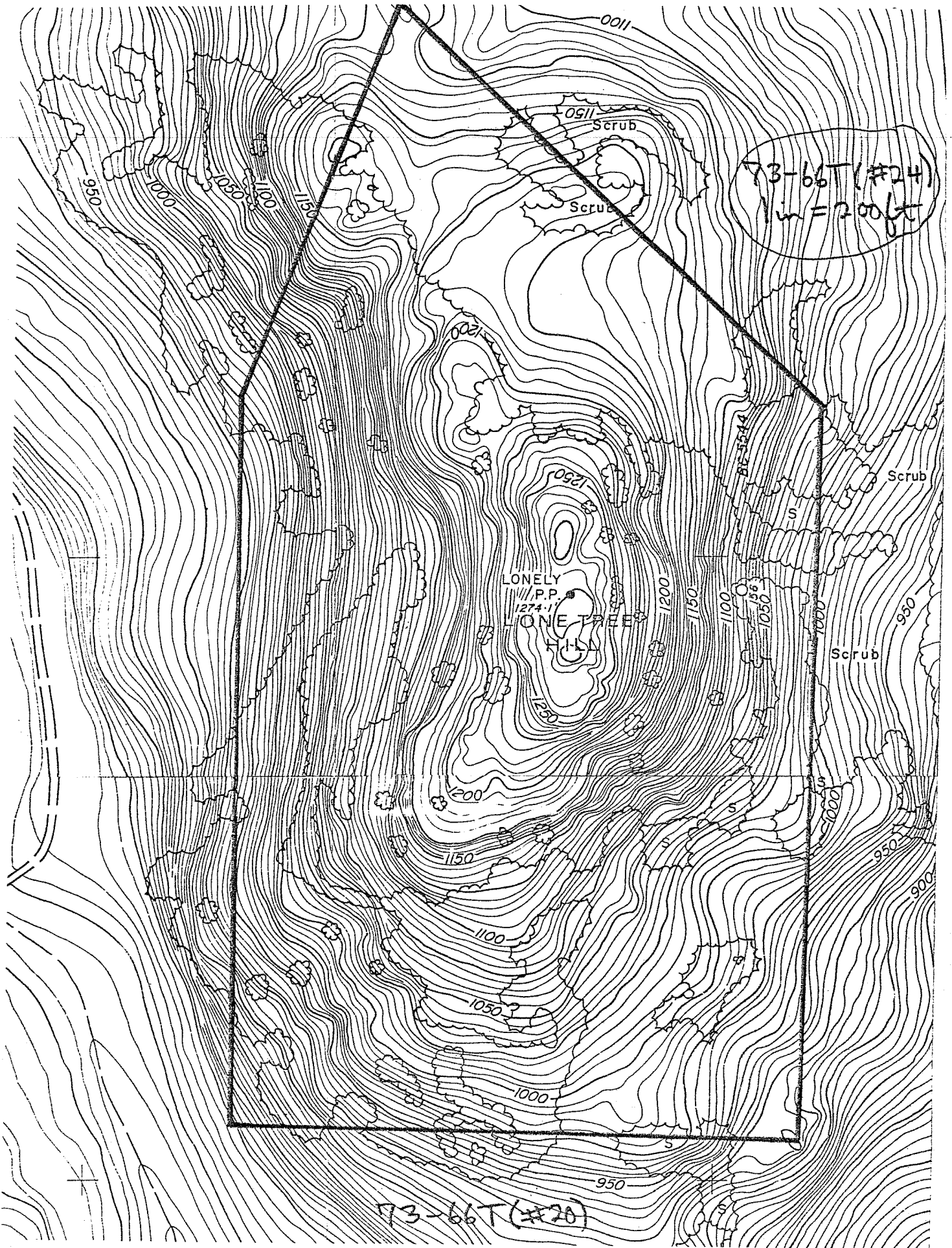
92 C/16	92 B/13	92 B/14
92 C/9	92 B/12	92 B/11
92 C/8	92 B/5	92 B/6

SCALE 1:50,000

SIDNEY
92 B/11

SHAWNIGAN LAKE
92 B/12
EDITION 3





3. Location of IBP Area*

1. Latitude..... 48 ° 31.1-31.4' N Longitude..... 123 ° 30.7-30.9' W

2. Country Canada

State or Province British Columbia County Victoria

(State or Province County)

4. Administration

National 1. Official category private land (part of Lot 28)

2. ~~XXXXXXXXXXXXXXXXXXXX~~ owned by Mr. Kamil,
 Address of administration Manager of the Finlayson Arm Tree Farm
 States..Ltd..
 Grouse Nest
 Gillespie Rd.
 East Sook

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) ...ca. 32 acres

2. Altitude (state units of measurement) Maximum 1274 ft. (390 m)
 Minimum 825 ft. (251 m)

6. Climate

Nearest climatological station :

1. Name Victoria - Highland

2. Climatological station on IBP Area*? Yes No ...X...

3. If (2) not, distance from edge of IBP Area* (state units) ? 1 mi. (1.6 km)

4. Direction from IBP Area* East

5. Additional data sheet attached? Yes No ...X...

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	3	C	1	3		<i>Parmelia conspersa</i> - <i>Ochrolechia</i> spp. - <i>Lecanora</i> spp.	
2	1	O	1	2		<i>Saxifraga caespitosa</i> - <i>Selaginella wallacei</i> - <i>Rhacomitrium</i> spp. - <i>Thamnia (subuliformis, vermicularis)</i>	
3	1	M	2	1		<i>Zygadenus venenosus</i> - <i>Saxifraga integrifolia</i> - <i>Rhacomitrium</i> spp. - <i>Polytrichum</i> spp.	
4	1	M	2	1		<i>Cynosurus echinatus</i> - <i>Aira caryophyllea</i> - <i>Camassia (quamash, leichtlinii)</i> - <i>Trifolium</i> spp.	
5	1	O	1	2		<i>Polypodium vulgare</i> - (<i>Pityrogramma triangularis</i>) - <i>Sedum spathulifolium</i> - <i>Rhytidiadelphus triquetrus</i> - <i>Hylocomium splendens</i>	
6	<u>1</u> 1	D D	2 1	<u>1</u> 3	b	<i>Quercus garryana</i> - <i>Holodiscus discolor</i> - <i>Symphoricarpos albus</i> - <i>Sanicula crassicaulis</i>	
7	1	J	2	1		<i>Quercus garryana</i> - <i>Cynosurus echinatus</i> - <i>Carex inops</i> - <i>Lupinus bicolor</i>	
8	1	A	1	<u>6</u> 7	a a	<i>Arbutus menziesii</i> - <i>Pseudotsuga menziesii</i> - <i>Holodiscus discolor</i> - <i>Sanicula (crassicaulis, bipinnatifida)</i> - <i>Hieracium albiflorum</i>	
9	1	A	1	7	a	<i>Pseudotsuga menziesii</i> - <i>Holodiscus discolor</i> - <i>Rubus ursinus</i>	
10	1	A	1	7	a	<i>Pseudotsuga menziesii</i> - <i>Mahonia nervosa</i> - <i>Gaultheria shallon</i>	
11	1	A	1	7	a	<i>Pseudotsuga menziesii</i> - (<i>Thuja plicata</i>) - <i>Mahonia nervosa</i> - <i>Hylocomium splendens</i> - <i>Pleurozium schreberi</i> - <i>Rhytidiadelphus loreus</i>	
12							
13							
14							
15							
16							
17							
18							
19							
20							

Please give information about further communities on a separate sheet

SOME VASCULAR PLANTS ON LONETREE HILL

<i>Achillea millefolium</i>	<i>Lonicera ciliosa</i>
<i>Achlys triphylla</i>	<i>Lonicera hispidula</i>
<i>Adenocaulon bicolor</i>	<i>Lotus micranthus</i>
<i>Aira caryophyllea</i>	<i>Lupinus bicolor</i>
<i>Allium cernuum</i>	<i>Luzula campestris</i>
<i>Arabis glabra</i>	<i>Mahonia aquifolium</i>
<i>Arbutus menziesii</i>	<i>Mahonia nervosa</i>
<i>Arctostaphylos columbiana</i>	<i>Mimulus alsinoides</i>
<i>Arctostaphylos uva-ursi</i>	<i>Microseris bigelovii</i>
<i>Arenaria macrophylla</i>	<i>Microsteris gracilis</i>
<i>Bromus tectorum</i>	<i>Montia perfoliata</i> var. <i>glauca</i>
<i>Bromus vulgaris</i>	<i>Nemophila parviflora</i>
<i>Bromus</i> sp.	<i>Nemophila pedunculata</i>
<i>Calypso bulbosa</i>	<i>Orobanche uniflora</i>
<i>Camassia quamash</i>	<i>Osmorhiza chilensis</i>
<i>Camassia leichtlinii</i>	<i>Pinus contorta</i>
<i>Carex inops</i>	<i>Pityrogramma triangularis</i>
<i>Cerastium arvense</i>	<i>Plectritis congesta</i>
<i>Claytonia parvifolia</i>	<i>Plectritis macrocera</i>
<i>Collinsia grandiflora</i>	<i>Poa</i> ? <i>rupicola</i>
<i>Collomia heterophylla</i>	<i>Polypodium glycyrrhiza</i>
<i>Corallorhiza maculata</i>	<i>Polystichum lonchitis</i>
<i>Crocidium multicaule</i>	<i>Polystichum munitum</i>
<i>Cynosurus echinatus</i>	<i>Pseudotsuga menziesii</i>
<i>Cystopteris fragilis</i>	<i>Pteridium aquilinum</i>
<i>Delphinium menziesii</i>	<i>Quercus garryana</i>
<i>Dodecatheon hendersonii</i>	<i>Ranunculus occidentalis</i>
<i>Draba verna</i>	<i>Rhamnus purshiana</i>
<i>Elymus glaucus</i>	<i>Ribes sanguineum</i>
<i>Eriophyllum lanatum</i>	<i>Rosa gymnocarpa</i>
<i>Erythronium oregonum</i>	<i>Rosa nutkana</i>
<i>Festuca microstachys</i>	<i>Rubus leucodermis</i>
<i>Festuca occidentalis</i>	<i>Rubus ursinus</i>
<i>Festuca subulata</i>	<i>Rumex acetosella</i>
<i>Fragaria vesca</i>	<i>Salix scouleriana</i>
<i>Fragaria virginiana</i>	<i>Sanicula bipinnatifida</i>
<i>Fritillaria lanceolata</i>	<i>Sanicula crassicaulis</i>
<i>Galium aparine</i>	<i>Saxifraga caespitosa</i>
<i>Galium boreale</i>	<i>Saxifraga intergrifolia</i>
<i>Galium triflorum</i>	<i>Sedum spathulifolium</i>
<i>Gaultheria shallon</i>	<i>Selaginella wallacei</i>
<i>Gaum macrophyllum</i>	<i>Sisyrinchium douglasii</i> (rare)
<i>Geranium robertianum</i>	<i>Smilacina stellata</i>
<i>Goodyera oblongifolia</i>	<i>Symphoricarpos albus</i>
<i>Grindalia integrifolia</i>	<i>Symphoricarpos mollis</i>
<i>Heuchera micrantha</i>	<i>Thuja plicata</i>
<i>Hieracium albiflorum</i>	<i>Trientalis latifolia</i>
<i>Holodiscus discolor</i>	<i>Trifolium microcephalum</i>
<i>Hypochaeris radicata</i>	<i>Trifolium oliganthum</i>
<i>Lactuca muralis</i>	<i>Trifolium variegatum</i>
<i>Lathyrus nevadensis</i>	<i>Tsuga heterophylla</i>
<i>Linanthus bicolor</i>	<i>Zygadenus venenosus</i>
<i>Lithophragma parviflora</i>	
<i>Lomatium macrocarpum</i>	
<i>Lomatium utriculatum</i>	

7.
(cont.)

2

Soil

Community Reference Number	Soil type	Other notes
1	F ₃	rock
2	F ₃	lithic sombric brunisol
3	F ₃	lithic sombric brunisol
4	F ₃	lithic sombric brunisol
5	F ₃	lithic dystic brunisol
6	F ₃	lithic dystic brunisol
7	F ₄	orthic sombric brunisol
8	F ₃	lithic dystic brunisol
9	F ₄ /F ₅	orthic dystic brunisol
10	F ₅	orthic dystic brunisol
11	F ₅	orthic dystic brunisol
12		
13		
14		
15		
16		
17		
18		
19		
20		

9. Landscape

1. General Landscape (give brief description)
 small, steep-sided, round-topped peak rising above the moderately
 rugged terrain of Highland District

2. Relief Type

	Flat	Undulating (0)-200 m.	Hilly 200-1000 m.	Mountainous > 1000 m.	%
Sharply dissected			80		80
Gently dissected			20		20
Incised					
Skeletonised					
%			100		100%

3. Special landscape features (list)
 frequent bedrock outcrops

10. Coastline of ISP 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* none

1.

	Permanent	Intermittent
General		
Standing		
Running		

2. Standing Water

	Permanent	Intermittent	Unproductive	Productive
Swamps				
Ponds				
Lakes				

3. Running Water none

	Permanent	Intermittent
Springs, cold		
Springs, hot		
Streams		
Rivers		

4. Special freshwater features ...none.....

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*) none

1. Fresh Lake River Stream

2. Salt and Brackish

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	X	X		
Reptilia		?										
Amphibia		?										
Pisces		-										
Insecta		X										

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

..... turkey vulture, Cooper's hawk, red-tailed hawk, bald eagle, golden
 eagle, blue grouse (uncommon on Saanich Peninsula), mountain quail,
 great horned owl, pygmy owl, Anna's hummingbird (Calypte anna),
 pileated woodpecker

Birds:

Anna's hummingbird	(<i>Calypte anna</i>)
bald eagle	(<i>Haliaeetus leucocephalus</i>)
band-tailed pigeon	(<i>Columba fasciata</i>)
blue grouse	(<i>Dendragapus obscurus</i>)
brown creeper	(<i>Certhia familiaris</i>)
chestnut backed chickadee	(<i>Penthestes rufescens</i>)
common raven	(<i>Corvus corax</i>)
Cooper's hawk	(<i>Accipiter cooperii</i>)
downy woodpecker	(<i>Dryobates pubescens</i>)
golden crowned kinglet	(<i>Regulus satrapa</i>)
golden eagle	(<i>Aquila chrysaetos</i>)
great horned owl	(<i>Bubo virginianus</i>)
hairy woodpecker	(<i>Dryobates villosus</i>)
Hutton's vireo	(<i>Vireo huttoni</i>)
mountain quail	(<i>Oreortyx picta</i>)
orange crowned warbler	(<i>Vermivora celata</i>)
Oregon junco	(<i>Junco oreganus</i>)
pileated woodpecker	(<i>Ceophlaeus pileatus</i>)
pine siskin	(<i>Spinus pinus</i>)
purple finch	(<i>Carpodacus purpureus</i>)
pygmy owl	(<i>Glaucidium gnoma</i>)
red shafted flicker	(<i>Colaptes cafer</i>)
red-tailed hawk	(<i>Buteo borealis</i>)
robin	(<i>Turdus migratorius</i>)
ruffed grouse	(<i>Bonasa umbellus</i>)
rufous hummingbird	(<i>Selasphorus rufus</i>)
rufous-sided towhee	(<i>Pipilo erythrophthalmus</i>)
saw whet owl	(<i>Aegolius acadicus</i>)
screech owl	(<i>Otus asio</i>)
solitary vireo	(<i>Vireo solitarius</i>)
song sparrow	(<i>Melospiza melodia</i>)
Staller's jay	(<i>Cyanocitta stelleri</i>)
Swainson's thrush	(<i>Hylocichla ustulata</i>)
Townsend's solitaire	(<i>Myadestes townsendi</i>)
Townsend's warbler	(<i>Dendroica townsendi</i>)
tree swallow	(<i>Iridoprocne bicolor</i>)
turkey vulture	(<i>Cathartes aura</i>)
varied thrush	(<i>Ixoreus naevius</i>)
violet green swallow	(<i>Tachycineta thalassina</i>)
western tanager	(<i>Piranga ludoviciana</i>)
white breasted nuthatch	(<i>Sitta carolinensis</i>)
winter wren	(<i>Tannus hiemalis pacificus</i>)
yellow bellied sapsucker	(<i>Sphyrapicus varius</i>)

Mammals:

Columbian blacktail deer	(<i>Odocoileus hemionus columbianus</i>)
cougar	(<i>Felis concolor</i>)
red squirrel	(<i>Tamiasciurus hudsonicus lanuginosus</i>)
Townsend's vole	(<i>Microtus townsendi tetramerus</i>)
white footed deer mouse	(<i>Peromyscus maniculatus angustus</i>)

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						
herbs	X	X	X	X	X	X	X				
grass	X	X			X						
Gymnospermae		X									
Psaridophyta		X	X	X	X						
Bryophyta		X			X						
Lichens and Algae		X	X		X						

5. Names of main threatened, endemic, relict and rare species - many of the showy wildflowers have suffered large losses of habitat. *Crocidium multicaule*, *Microseris bigelovii*, *Pityrogramma triangularis*, *Saxifraga caespitosa*, *Thamnia (subuliformis/vermicularis)*, *Cornicularia aculeata*. Furthermore, several of the community types represented on Lonetree Hill are in danger of total eradication on Saanich Peninsula.

15. Exceptional Interest of IBP Area* (see additional comments on p. 9a)

- excellent rock outcrop - showy wildflower vegetation
- dry forest types, including arbutus and Garry oak
- a fine sample of a Garry oak - grass community
- there is very little broom (*Cytisus scoparius*) on Lonetree Hill.

This indicates only limited grazing in the past. In the CDF, such grassy communities that have escaped heavy grazing (or settlement) are exceedingly rare.

ADDITIONAL COMMENTS

Within the Coastal Douglas-fir Zone (usually in CDFa, but occasionally in CDFb) occur, in addition to various closed forest types, several community types characteristic of rock outcrops, coastal bluffs, and steep, shallow-soiled hillsides. This rock outcrop vegetation is unique in Canada, and of very limited extent in British Columbia (southeastern Vancouver Island and adjacent Gulf Islands). The two characteristic trees, Garry oak and madrono, occur only in this zone in Canada. The flora includes many showy wildflowers (some of the showiest in the Province), especially in the spring, when they put on massed displays. Many species are rare, and several species of both vascular plants and cryptogams reach the northern limit of their range here, sometimes not reappearing until further to the south in Oregon.

The vegetation is well adapted to frequent fires and prolonged summer drought, but is very sensitive to disturbance such as grazing, trampling and trailbiking. The problem is aggravated by the steepness of the terrain and shallowness of soil. Once disturbed the vegetation takes a long time to recover. Grazing by sheep or goats is especially destructive to the showy spring flowers. These animals should be excluded from any reserve established over rock outcrop communities.

It should be emphasized that Lonetree Hill contains a fine sample of the Garry oak - grass parkland (forest steppe), a community type of moderate slopes or flatlands with deeper soil. It is almost nonexistent in the undisturbed state, most of its previous area now being occupied by the houses of Greater Victoria or the farms of the Saanich Peninsula. The Garry oak - grass community on Lonetree Hill greatly enhances its potential as an ecological reserve.

16. Significant Human Impact

1. General: None in entire IBP Area*
 None in part of IBP Area* X
 Impact on entire IBP Area*

2. Particular

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

- in surrounding area

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

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 National Topographic Series
92 B/12 (1:50,000)

3. Aerial photographs for the IBP Area available?

For whole area For part of area None

19. Other Relevant Information

This would be an excellent ecological reserve for raptorial studies and investigations in pollination ecology. It is hoped that it could be solved with the help of the Green Belt Fund.
See: Roemer, H.L. 1972. Forest vegetation and environments on the Saanich Peninsula, Vancouver Island. Ph.D. thesis, Dept. of Biology, Univ. of Victoria.
Szcawinski, A.F., and A.S. Harrison. 1972. Flora of the Saanich Peninsula. Occ. Papers B.C. Prov. Museum No. 16.

Signed Jim Pojar, K.R. Joy and V.J. Krajina
(Surveyor)