ECOSYSTEM UNITS

UNIVERSITY OF BRITISH COLUMBIA RESEARCH FOREST

MAPLE RIDGE, B.C., CANADA

0 100 200 300 400 500 1000 metres

1:10,000

1 2 3 hectares

Contour interval: 20 metres

Main road
Secondary road
Branch road
Track
Foot trail
Building
Fence
Bridge
Culvert
Creek
Indefinite creek
Falls
Photo centre

KEY TO SHEETS

1	5,468,000mN
2	5,463,500mN
3	5,459,000mN
4	5,454,500mN

528,000mE 539,000mE

BASE MAP

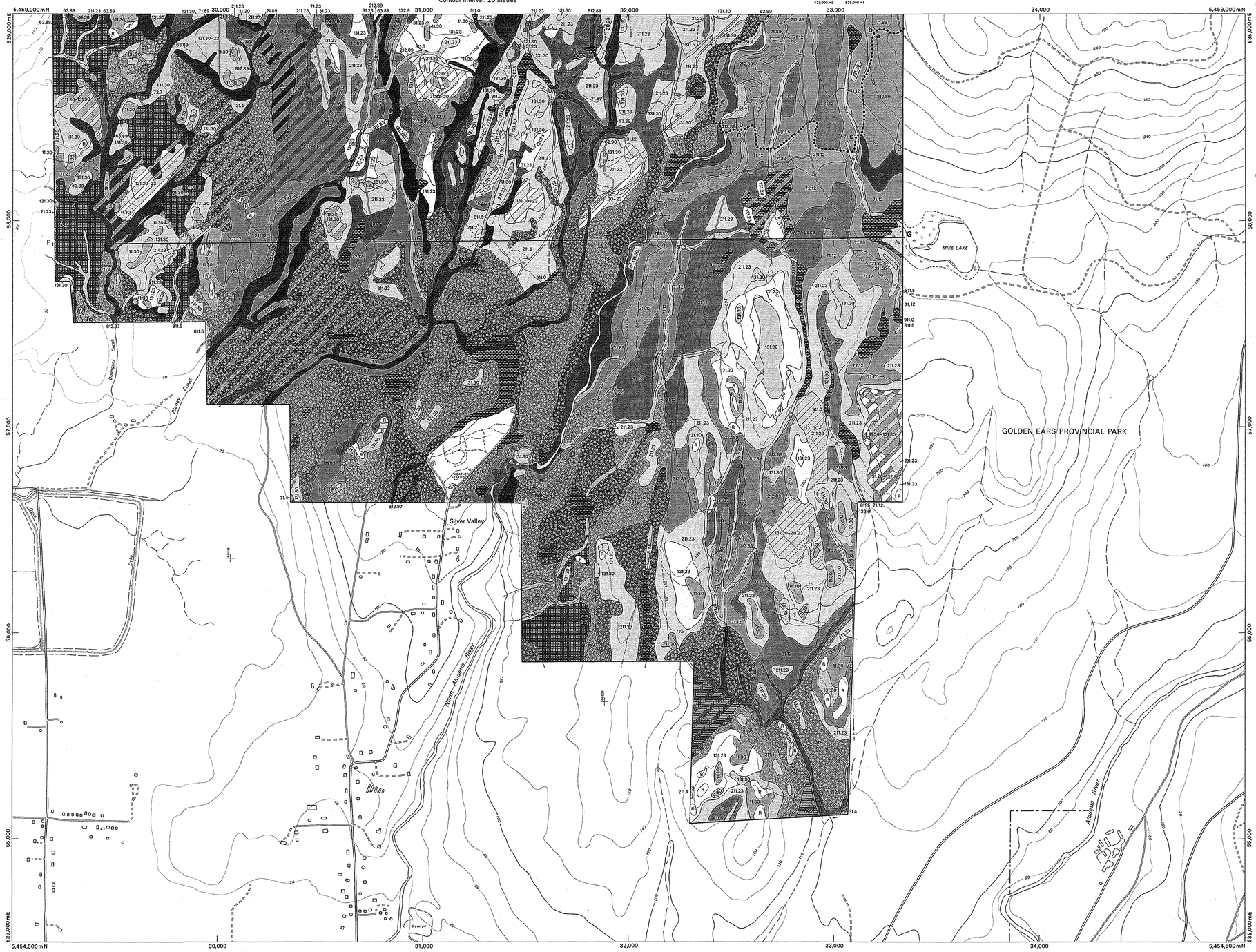
Compiled from topographic maps of the Research Forest prepared by Integrated Resources Photography Ltd., 1975, from NTS sheets 92G/2h and 92G/7a, and from aerial photographs

Universal Transverse Mercator Projection, Zone 10

Ecosystem mapping by: K. Klinka, B.C. Forest Service, Research Division, 1975

Cartographic design and production by: Canadian Cartographics Ltd., Coquitlam, B.C., 1976

Published by the Faculty of Forestry, University of British Columbia, Vancouver, Canada, 1976



SYNSYSTEMATICS

COASTAL WESTERN HEMLOCK BIOGEOCLIMATIC ZONE (CWH)

a - (CWHa) subzone: mean annual precipitation 216 – 280 cm
b - (CWHb) subzone: mean annual precipitation 280 – 317 cm and over

Biogeoclimatic subzone		Ecosystem units at the level of plant association or subassociation* (may include up to 15% of other units)	Associated soils at the level of soil series (polypedon)
a&b	R	Non-forested ecosystems on rocks	
a	11	(LICHEN) – GAULTHERIA – DF**	loamy sand Lithic Mini Humo-Ferric and Lithic Podzols with mor humus; Lithic Folisol and Protoranker with mor humus
b	12	LICHEN – GAULTHERIA – LP – DF	sandy loam Lithic Orthic Humo-Ferric and Lithic Podzols with mor humus; Lithic Folisol and Protoranker with mor humus
a	131.30 131.23 131.2	Gaultheria – WH – DF	loamy sand Lithic Mini Humo-Ferric and Lithic Podzols with mor humus; Lithic Folisol with mor humus sandy loam Mini Humo-Ferric Podzol with mor humus
a&b	132	Mahonia – Gaultheria – WH – DF	sandy loam Mini and Orthic Humo-Ferric Podzols with mor humus
a	211.12 211.23 211.4	Moss – WH	sandy loam Mini and Orthic Humo-Ferric Podzols with mor humus loamy sand Mini Humo-Ferric Podzol with mor humus
	212	Mahonia – Moss – WRC – WH	sandy loam Mini and Orthic Humo-Ferric Podzols with mor humus; loamy sand Sombric Humo-Ferric Podzol with moder humus
a&b	311.23 311.24 311.2	MOSS – (POLYSTICHUM) – WRC – WH	sandy loam Orthic Humo-Ferric Podzol with mor humus loamy sand (Gleyed) Mini and Orthic Humo-Ferric Podzols with moder humus silty clay (Gleyed) Sombric Ferro-Humic Podzol with moder humus
▽	41.23	VACCINIUM – GAULTHERIA – DF – WH	sandy loam Lithic Orthic Humo-Ferric Podzol with mor humus; loamy sand Lithic Podzol with mor humus; Lithic Folisol with mor humus
▽	41.30		loamy sand Lithic and Orthic Humo-Ferric Podzols with mor humus
▽	41.2		
▽	42.23	VACCINIUM – MOSS – WH	loamy sand Lithic Podzol with mor humus
▽	42.88		sandy loam Lithic and Orthic Humo-Ferric Podzols with mor humus
▽	5113.23	BLECHNUM – AF – WH	sandy loam Orthic Humo-Ferric Podzol with ortstein and mor humus
b	51.6		sandy loam Gleyed Orthic Ferro-Humic Podzol with ortstein and mor (moder) humus
▽	51.5 B		sandy loam (Gleyed) Orthic and Mini-Ferro-Humic Podzols with ortstein and moder humus; loamy (Gleyed) Mini Ferro-Humic Podzol with ortstein and moder humus
▽	52	STREPTOPUS – BLECHNUM – AF – WH	sandy loam Gleyed Mini Ferro-Humic Podzol with hydromoder humus
▽	53	BLECHNUM – WH – WRC	sandy loam Gleyed Mini Humo-Ferric and Ferro-Humic Podzols with hydromor humus; Terric Humisol with hydromoder humus
▽		RIBES – VM	loamy sand, fragmental Typic Folisol with moder humus, fragmental Orthic Dystric Brunisol with mull humus, fragmental Sombric Humo-Ferric Podzol with moder humus
	62	POLYPODIUM – GAULTHERIA – DF – WRC	Lithic Folisol and Protoranker with mor and moder humus; sandy loam Lithic Podzol with mor and moder humus
		POLYPODIUM – POLYSTICHUM – DF – WRC	loamy sand and sandy loam skeletal Mini and Orthic Humo-Ferric and Mini and Sombric Ferro-Humic Podzols with moder humus; silt loam, skeletal Orthic Dystric Brunisol with moder humus
	63	MAHONIA – POLYSTICHUM – DF – WRC	sandy loam Mini and Orthic Humo-Ferric Podzols with moder and mor humus
			loamy sand Mini and Sombric Humo-Ferric Podzols with moder and mor humus
	71.23 71.12 71.2	TIARELLA – POLYSTICHUM – WRC	loamy (Gleyed) Mini Humo-Ferric and Ferro-Humic Podzols with moder humus
			sandy loam (Gleyed) Mini and Sombric Humo-Ferric and Ferro-Humic Podzols with moder humus
	72.12	RUBUS – POLYSTICHUM – WRC	sandy loam Gleyed Mini Humo-Ferric Podzol with moder humus
a&b			sandy loam Gleyed Mini Humo-Ferric Podzol with mull humus
			loamy sand Orthic and Cumulic Regosol with mull and hydromull humus; sandy Orthic Sombric Brunisol with mull humus; sandy loam Gleyed Sombric Humo-Ferric Podzol with mull humus; silt loam Orthic Humic Gleysol with hydromull humus; Terric Humisol with hydromull humus
			silty clay Orthic Humic Gleysol with hydromull humus
			clay loam Gleyed Sombric Humo-Ferric Podzol with mull humus
▽		ADIANTUM – POLYSTICHUM – WRC	loamy sand, skeletal Orthic Regosol with mull humus; loamy, skeletal Orthic Dystric Brunisol with mull humus; Lithic Humisol with mull humus
	811	Polystichum – Oplopanax – WRC	sandy loam (Gleyed) Sombric Brunisol with moder humus; sandy loam and silt loam Gleyed Mini Ferro-Humic Podzol with mull and moder humus; silty Orthic Gleysol with hydromoder humus
		Ribes – Oplopanax – WRC	sandy loam (Gleyed) Sombric and Mini Humo-Ferric Podzol with moder humus; loamy and silty clay Gleyed Sombric and Mini Humo-Ferric Podzols with mull humus
		Vaccinium – Lysichitum – WRC	sandy loam Orthic Humic Gleysol with hydromoder humus; Terric and Typic Humisols with hydromoder humus
		Vaccinium – Lysichitum – YC – WRC	Terric and Typic Humisols with hydromoder humus
b	1011	ATHYRIUM – ARUNCUS – RA – SA	sandy Lithic and Orthic Regosol with mull humus; loamy sand (Gleyed) Sombric Humo-Ferric Podzol with mull humus
a&b	A	Non-forested ecosystem in aquatic environment	

Associations are designated by capital letters, subassociations by lower case letters

**ABBREVIATIONS: AF–amabilis fir (Abies amabilis), DF–Douglas-fir (Pseudotsuga menziesii, var. menziesii), LP–lodgepole pine (Pinus contorta), VM–vine maple (Acer circinatum), WH–western hemlock (Tsuga heterophylla), WRC–western redcedar (Thuja plicata), YC–yellow-cedar (Chamaecyparis nootkatensis), RA–red alder (Alnus rubra), SA–Sitka alder (Alnus sitchensis)*

▽ *Not on this sheet*

SOIL PARENT MATERIALS

R	Bedrock	.4	Glaciofluvial deposits
.1	Deep deposits (Moraine)	.5	Alluvial deposits
.2	Blanket (Moraine)	.6	Glaciolacustrine deposits
.3	Veneer (Moraine)	.7	Glaciomarine deposits
.8	Blanket (Colluvial materials)	.0	Organic deposits
.9	Veneer (Colluvial materials)	A	Aquatic environment

COLOUR SCHEME FOR ECOSYSTEM UNITS

Colours designating plant associations and subassociations on this map were selected from this matrix and modified only by addition of patterns to indicate the genetic category of soil parent material

soil nutrient regime: oligotrophic; submesotrophic; mesotrophic; subeutrophic; eutrophic

soil moisture regime: very xeric; xeric; subxeric; submesic; mesic; subhygric; hygric; subhydric

KEY TO NUMERICAL SYMBOLS

VEGETATION | SOIL PARENT MATERIAL

132.9

Plant alliance
Plant association
Plant subassociation

Genetic category of unconsolidated deposits

Dominant mapping unit occupying more than 50% of the area

Sub-dominant mapping unit occupying 16–49% of the area

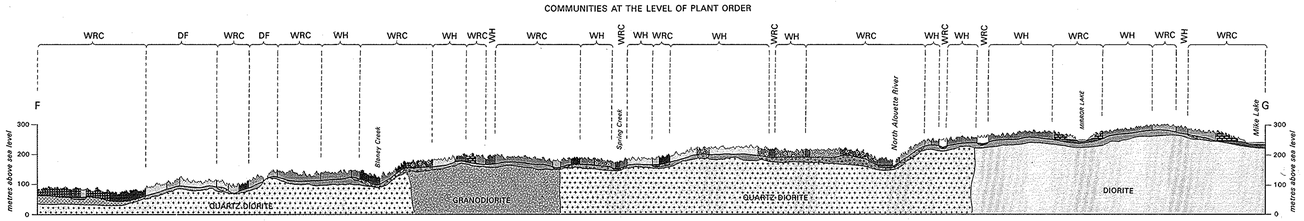
131.24–132.9

A B Section line

a b Biogeoclimatic subzone boundary

SHEET 3
(within NTS sheets 92G/7, 92G/2)

COMMUNITIES AT THE LEVEL OF PLANT ORDER



SECTION SCALE = VERTICAL / HORIZONTAL = 1

SURFACIAL DEPOSITS

- Moraine and basal till deposits
- Glaciofluvial deposits
- Glaciomarine deposits
- Colluvial materials
- Recent alluvial and organic deposits

Vegetation colours and codes explained in the main legend

This map was prepared to demonstrate the feasibility of the synecological mapping technique and, as part of a continuing project, to show how this type of mapping can be utilized in the management of forest land.

The mapping was accomplished by combination of ground survey and aerial photographic interpretation. It was preceded by ecosystem analysis and synthesis which included both vegetation and soils. Elements of microclimate, relief, soil parent material and soil characteristics as well as vegetation were considered in first defining the synsystematic units and then the mapping units called ecosystem types or types of biogeocoenoses. Each ecosystem type thus represents a specific habitat of a plant association which is distinctly different from any other. Detailed discussion on the classification and on related research can be found in: V. J. Krajina, Ecology of Forest Trees in British Columbia, Ecology of Western North America, Vol. 2, No. 1, Department of Botany, University of British Columbia, October 1969, and K. Klinka, Ecosystem Units, their Classification, Interpretation and Mapping in the University of British Columbia Research Forest; Ph. D. Thesis, Faculty of Forestry, University of British Columbia, June 1976.

An ecosystem type represents the same constraints on silvicultural operations and has the same potential for tree growth. Because of these characteristics, ecosystem types can be used as the basis in forest management planning. A management regime based on interpretation of this synecological map is currently in the process of preparation.