4. SUITABILITY CLASSIFICATION FOR GRAPE PRODUCTION IN THE OKANAGAN AND SIMILKAMEEN VALLEYS

4.1 INTRODUCTION

The maps in this section of the Atlas were developed on the basis of growing season information. They are presented to provide guidance and direction to the grape and wine industry in the Okanagan and Similkameen Valleys of British Columbia in site selection and grape variety selection. Site and variety selection are basic decisions that grape growers must make. The viability of the vineyard afterwards depends to a large degree on the extent to which marketing of the crop and management of the vineyard are taken into consideration. Careful use of the maps and the supporting information in the other sections of the Atlas will allow producers to optimize grape quality and production; will allow wineries to estimate the quality of grapes that can reasonably be expected from a given site; will provide a basis for the selection of grape variety for future evaluation programs and will provide a basis for the formation of appellation areas.

This section establishes a relationship between climate, soils and grape varieties. The methods used to establish the relationship between climate and climate and soils are outlined in the tables of Appendix B. Local knowledge about grape variety characteristics such as variations in hardiness and season of maturity with well tested varieties such as Concord, Campbell Early, De Chaunac (S-9549), Marechal Foch, Okanagan Riesling and Verdelet (S-9110) has been used to establish the relationships between grape varieties, climate and soils.

4.2 CHARACTERISTICS OF THE SUITABILITY CLASSES FOR GRAPE PRODUCTION

4.2.1 Class 1

Land areas in this class are the most desirable and are the least restrictive for grape production. Class 1 areas have the highest number of heat units, a long frost free season, high solar radiation and desirable soil characteristics. Land in Class 1 is therefore capable of producing the widest range of grape varieties. Varieties such as Chancellor (S-7053), Vineland 50201, Johannisberg Riesling, and White Riesling and late maturing high acid producing varieties are most likely to produce the best fruit quality and mature wood in this class. Limitations because of the high solar radiation and the high number of growing degree days exist for low acid/low sugar producing varieties such as Madelaine Sylvaner and Perle of Csaba.

The major locations for Class 1 areas in the Similkameen Valley and the Okanagan Valley are predominantly on the east side of these valleys. Less extensive Class 1 areas are found on the west side of these valleys, a result of shading produced by mountains. Exceptions occur at Skaha Lake; on the south facing slope of Mt. Boucherie and a few small areas in the most northern portion of the Atlas.

Some anomalies do exist, particularly on the east side of Osoyoos Lake extending south to the U.S. border and northward to Oliver. This area contains east facing slopes that meet the upper terraces. These slopes could form air collection sites that are too small to map. Such areas are prone to early fall frost. Caution should be used in selecting varieties for these areas.

Varieties such as De Chaunac (S-9549), Chelois (S-10878), Verdelet (S-9ll0), Pinot Chardonay, Semillon, Chenin Blanc, Gray Riesling, Merlot, Cabernet Sauvignon, Sauvignon Blanc and Pinot Noir planted (without rootstocks) on the sandy sols of this class in areas south of Vaseaux Lake had mortally damaged root systems after the 1978/79 winter. Marechal Foch, White Riesling, Gewurztraminer, Vineland 50201 and Rougeon (S-5898) were not seriously damaged while Okanagan Riesling was moderately injured.

Class 1 areas located in the Inkameep Creek Valley appear to represent an extensive area suitable for grape production. However, there is no grape growing experience or winter temperature information available for this area.

Broad areas of land, as yet unplanted to vineyards or orchards are found in Class 1, suggesting that expansion of the grape and wine industry in this class is possible.

4.2.2 Class 2

Land areas in this class are desirable, but somewhat more restrictive for grape production. This class contains fewer growing degree days; has a slightly shorter frost free season and has lower solar radiation than areas in Class 1. The soils of land areas in this class are the same as those found in Class 1. Class 2 areas are therefore capable of producing a slightly more narrow range of grape varieties. It is more difficult to produce good quality later maturing varieties, especially in cool summers in areas north of Summerland. High acid producing varieties such as Baco Noir, Marechal Foch, Chenin Blanc and White Riesling will produce a greater imbalance of sugar and acid content in this class. Low acid/sugar producing varieties will produce better quality fruit in the northern portions of this class.

The major portions of Class 2 areas are located near the town site of Keremeos in the Similkameen Valley; the east side of the Okanagan Valley south of Oliver; the east side of this valley north of Oliver to Kelowna and along west or south facing slopes in areas around Kelowna.

Anomalies in this class are somewhat more extensive than in Class 1. The Class 2 area located in the Inkameep Creek Valley requires a word of caution for the reasons outlined earlier in Class 1. Land at the south end of Vaseaux Lake reflects an unusual location for a Class 2 because it is found in a valley bottom. Valley bottoms are usually cool air collecting areas; prone to early fall frost and severe winter low temperatures. Continued air movement through this particular area due to the narrow shape of the valley at this point may influence and improve the climate in this location.

A broad exposure of Class 2 drains Shingle Creek on the west side of Penticton. This area, acts to ameliorate the effects of cold air collected in the mountains. There is no experience in grape production and there are no winter temperature records available for this location.

The land areas around Summerland contain numerous side valleys, rock outcroppings and air drainage channels from surrounding mountains. This very diverse topographic area produces areas which appears to be satisfactory grape growing sites but which have proven, historically, to be unsuitable. Such locations are located in the large Class 2 area at the extreme western portion of Summerland and the Eneas Creek Valley (locally known as Garnet Valley).

As was found in Class 1, there appears to be large areas of land in Class 2 areas suitable for grape production which have not yet been planted to vineyard or orchard. Expansion of the grape and wine industry in this class is possible.

4.2.3 Class 3

Land areas within this class are suitable for grape production but are restrictive for the production of good quality grapes. Limitations on grape production in this class make very careful site selection mandatory. This class has the lowest number of acceptable heat unts, a high degree of risk for early fall frost and low solar radiation. It also contains a much broader selection of soils with desirable to acceptable characteristics. Late maturing or high acid producing varieties should not be grown while early maturing varieties such as Madeleine Sylvaner and Pearl of Csaba produce acceptable balance of sugar and acid content in this class. Good sites within Class 3 areas are best suited to varieties which mature before the end of the lst week of October.

Class 3 areas are predominantly located at lower elevations in the Similkameen Valley and the west side of the Okanagan Valley from Osoyoos to Kelowna. In the Kelowna area Class 3 represents the major portion of the grape producing area extending from near lake level to terraces at higher elevations. A major area of Class 3 is located adjacent to Okanagan Lake at Winfield and represents an area where the moderating influence of Okanagan Lake improves grape production. Land in this area, from lake level to the height of land to the east of Okanagan Lake is more favourably exposed than sites from the height of land east to Highway 97. The area near Okanagan Lake represents the better portions of a Class 3 while the area near Highway 97 represents a poor Class 3.

Much of the land in Class 3 is currently planted to grapes and other crops. There are still some heavily forested areas within the Class 3 area. Expansion of the grape and wine industry can take place in this class.

4.2.4 Class 4

Land within this class represents the greatest challenge to grape growers. Class 4 areas may have high accumulation of growing degree days or high solar radiation or desirable soil characteristics, but the disadvantages out weigh the advantages. Land in Class 4 is the most restrictive for grape production. Suited to portions of this class are some

early maturing, hardy varieties such as Selection # 65 (Sovereign Gold), Selection # 123 (Sovereign Tiara), Sovereign Coronation (Sel. 361), Leinor white and Pearl of Csaba.

Class 4 areas are found in the valley bottom of the Similkameen and Okanagan Valleys. They are also found at the higher elevations near Westbank, Kelowna and extensive areas north of Kelowna. Extreme caution should be used when selecting sites with this class for grape production. Historically valley bottoms have been very vulnerable to cold winter temperatures. Areas north of Kelowna have also been extremely cold during the winter months. Areas at higher elevations have suffered from early fall freeze and cooler growing seasons.

While there are large areas of land not planted to vineyards, expansion of the grape and wine industry using land within this class is not recommended.

4.2.5 Class 5

Most areas within this class are represented by extensive rock outcropping, very steep hillsides, city centers, areas prone to flooding or beach areas. Grape production in this class may be possible where pockets of suitable soil, too small to be mapped exist, or where special management practices are used.

Generally areas in Class 5 are not considered suitable for grape production.

4.3 GRAPE VARIETIES

Flawless grape quality can only be produced with flawless grapes on a flawless site. It is not possible to produce such grapes because of the demands that are placed on site and varieties. These demands may change. Sites considered marginal for one variety may be abandoned or may be considered acceptable as the demand for other varieties increases. Sites considered to be excellent may become only fair with a change in demand. Variations in climate may produce the best quality fruit in cool areas during hot years, or may produce the best fruit quality in hot areas during cool years.

Rapid changes in the demand for grape varieties not previously grown in this area, emphasize the need for knowledge about the sites and soils selected for grape production. During these periods of rapid change, grape growers plant varieties and adopt management practices that have not previously been evaluated in British Columbia. These unknowns impose a greater degree of risk.

Grape variety recommendations have historically considered varieties that could be grown on many different sites in the Atlas area. Climate, soil and variety differences in various areas are now being utilized more fully as the demand for new varieties and higher quality grapes increases. Table 28 lists some of the well tested and newer varieties with limited evaluation that are now produced in the Atlas area. This listing is not a list of recommended varieties, but rather a listing of variety suitability to particular areas on the basis of existing knowledge. Some of these evaluations may change as additional experience with the varieties is gained.

Table 28
Suitability Classification for Grape Varieties
in the Okanagan and Similkameen Valleys

VARIETY	SUITABILITY CLASS				
	1	2	3	4	5
Aurora (S-5279)	S	S	M	N	N
Auxerois	M	S	S	N	N
Baco Noir	S	S	M	N	N
Campbell Early	S	S	S	M	N
Cayuga white	M	S	M	N	N
Chancellor (S-7053)	S	S	N	N	N
Chelois (S-10878)	S	S	N	N	N
Chenin Blanc	M	M	N	N	N
Concord	S	S	S	N	N
De Chaunac (S-9549)	S	S	M	N	N
Ehrenfelser	S	S	S	M	N
Festivee (V-53033)	S	S	N	N	N
Gamey Beaujolais	S	S	M	N	N
Gewurztraminer	S	S	N	N	N
G M 4-46	S	S	M	N	N
Johannisberg Riesling	S	S	M	N	N
Madeleine Sylvaner	M	S	S	M	N
Marechal Foch	S	S	M	M	N
Muller Thurgau	S	S	N	N	N
Pearl of Csaba	M	S	S	M	N
Pinot Chardonnay	M	M	N	N	N
Pinot Noir	S	S	M	N	N
Okanagan Riesling	S	S	S	M	N
Rotberger	S	S	S	N	N
Rougeon (S-5898)	S	S	N	N	N
Rulander KL2-21	S	S	M	N	N
Selection #65 (Sovereign Gold)	S	S	S	M	N
Selection #82 (S. Ruby)	S	S	S	M	N
Selection #123 (S. Tiara)	S	S	S	M	N
Selection #166 (S. Opal)	S	S	M	N	N
Selection #180 (S. Noir)	S	S	N	N	N
Schonburger	S	S	S	M	N
Seyval Blanc	S	S	S	N	N
Sovereign Coronation (#361)	S	S	S	M	N
Valerien (SV 23410)	S	S	N	N	N
Verdelet (S-9110)	S	S	N	N	N
Veeblanc (V-53263)	S	S	N	N	N
Vidal 256	S	S	N	N	N
Vineland 50201	S	S	N	N	N
Weisburgunder KL 5 GM	S	S	M	N	N
White Riesling	S	S	N	N	N

Footnote: S = Suitable
M = Marginal
N = Not Suitable

Suitability Class 1

Suitability Class 2

Suitability Class 3

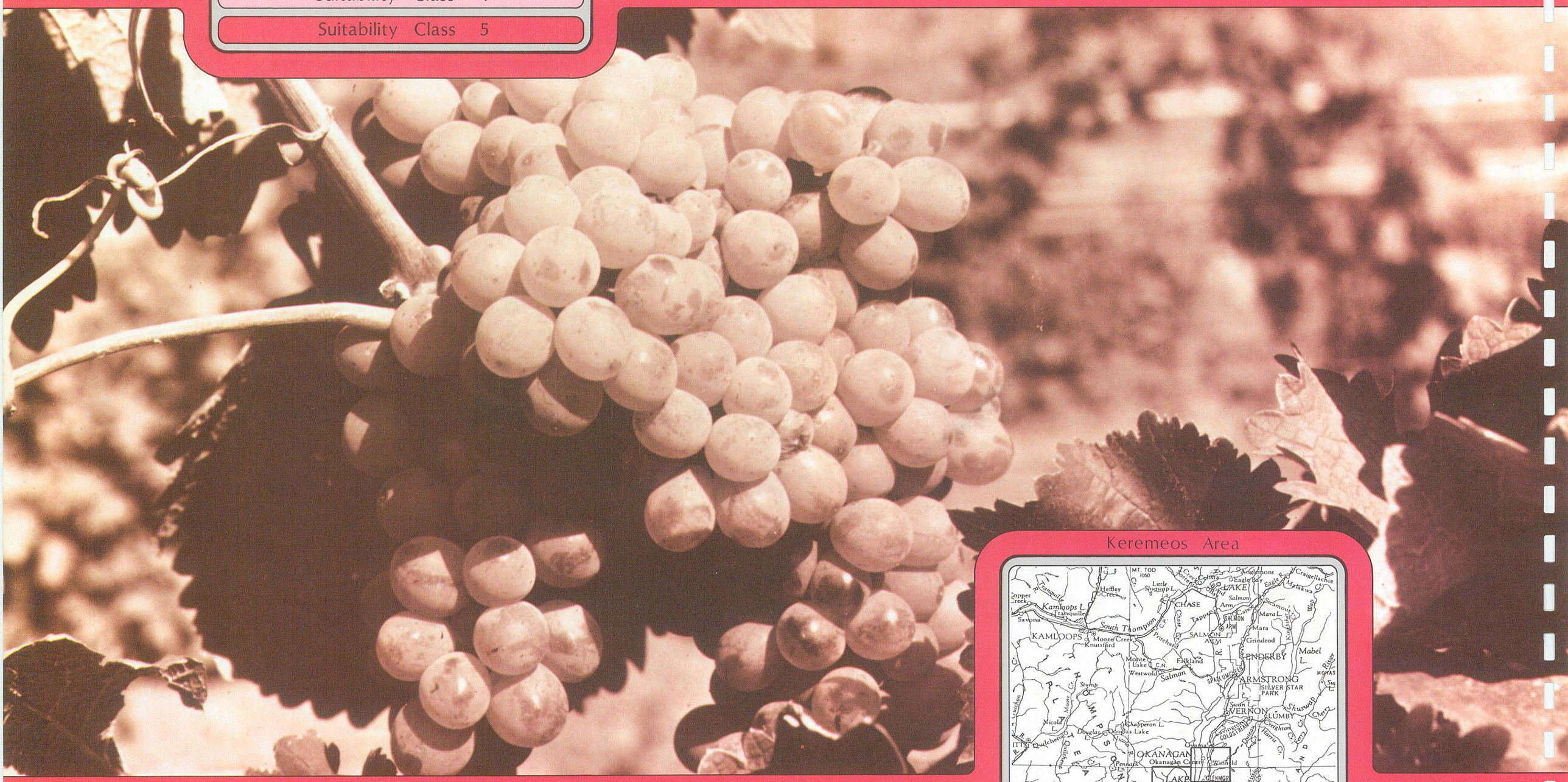
Suitability Class 4

Suitability Class 5

Scale 1:50 000

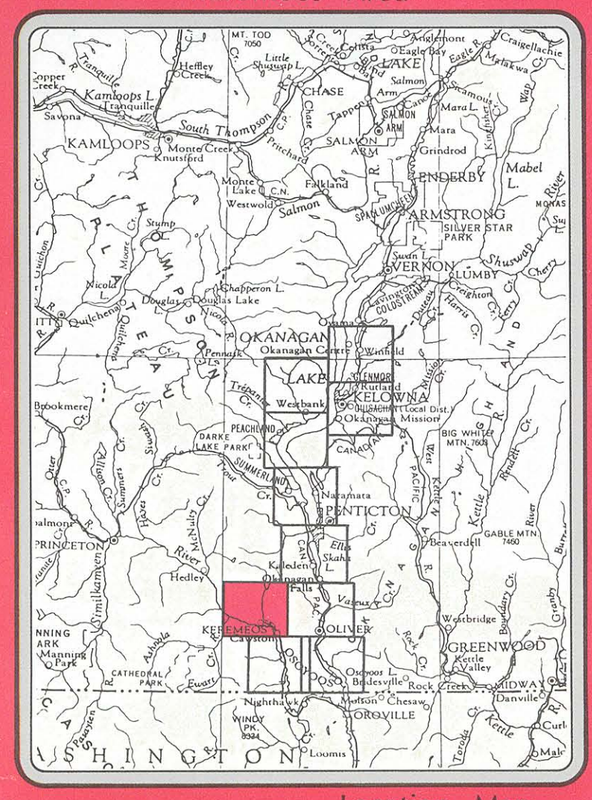
Metres 1000 0 1000 2000 3000 4000 5000 6000 Metres

Miles 1 0 1 2 3 4 Miles

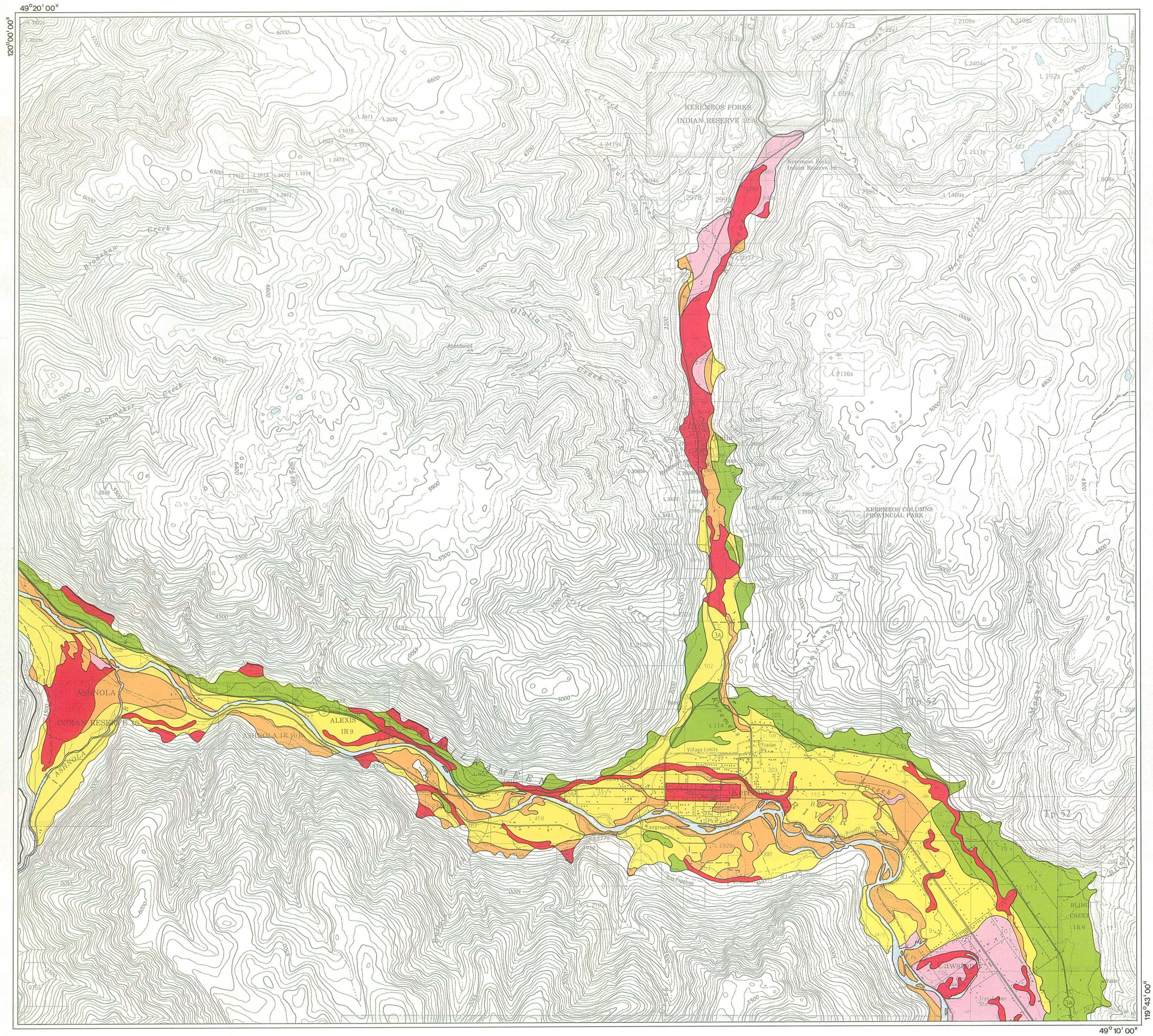


GRAPE SITE SUITABILITY

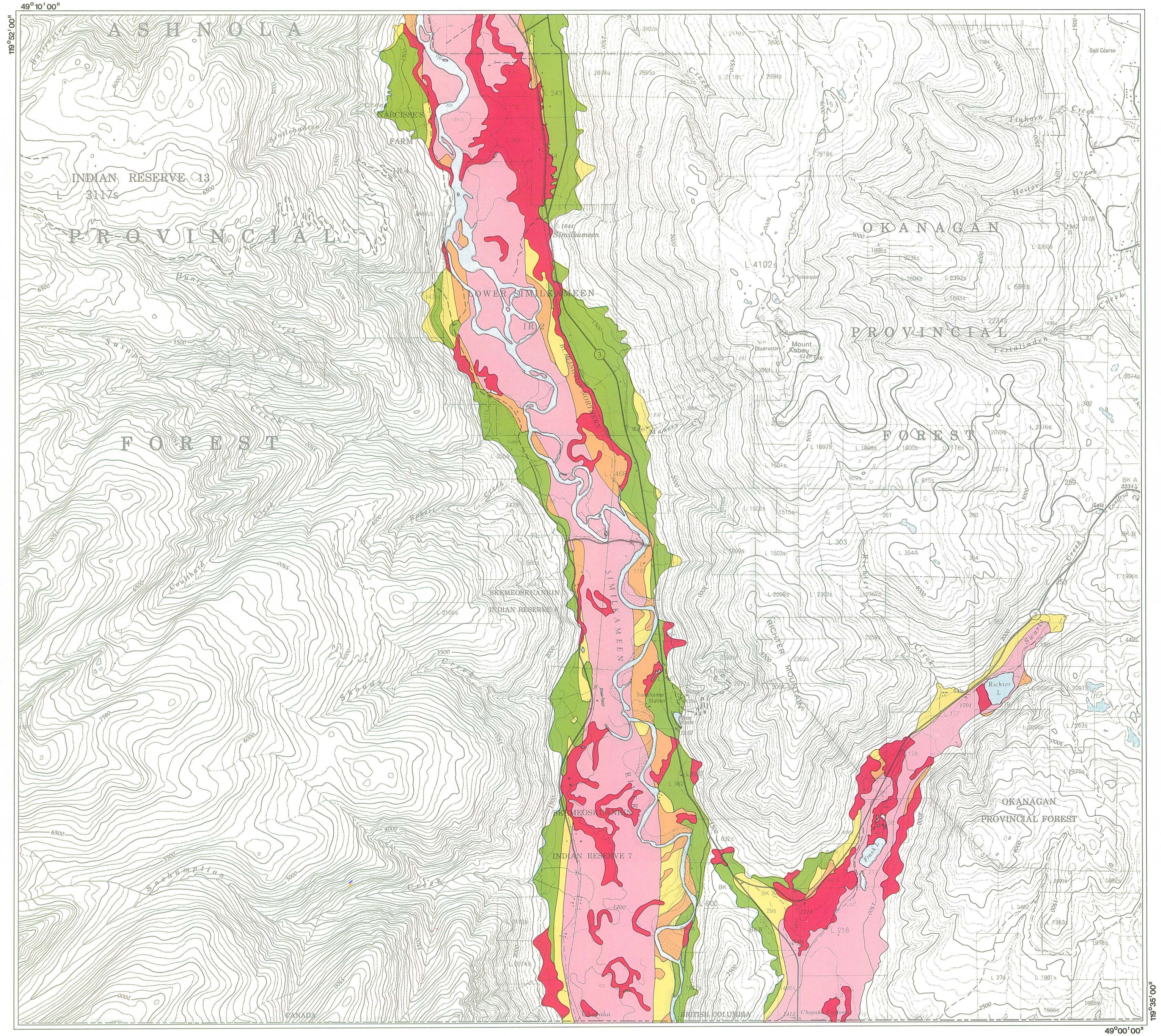
Keremeos Area



Location Map



49°20'00"
120°00'00"
119°43'00"
49°10'00"
KEREMEOS FORKS
INDIAN RESERVE 12A
Keremeos Forks
Indian Reserve 12
Loak Creek
Cedar Creek
Olalla Creek
Olalla
Abandoned
Bradshaw Creek
Shoemaker Creek
Old Tom Ck
Marsel Creek
Twin Lakes
Horn Creek
KEREMEOS COLUMNS
PROVINCIAL PARK
Armstrong Ck
Manuel Creek
Tp 52
ASHNOLA
INDIAN RESERVE 10
ASHNOLA IR 10 B
ASHNOLA
ALEXIS
IR 9
SIMILKAMEEN
RIVER
Keremeos
Keremeos Creek
Village Limits
Trailer Pk
Fairgrounds
Gas Pipeline
Daly Slough
Private
Cawston
Transformer Station
BLIND CREEK
IR 6
Blind Ck
Water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ASHNOLA
NARCISSE'S FARM
INDIAN RESERVE 13
PROVINCIAL
FOREST
LOWER SIMILKAMEEN
IR 2
SIMILKAMEEN
OKANAGAN
PROVINCIAL
FOREST
Mount Kobau
SKEMEOSKUANKIN INDIAN RESERVE
RICHTER MOUNTAIN
Richter L.
INDIAN RESERVE 7
OKANAGAN PROVINCIAL FOREST
CANADA
BRITISH COLUMBIA
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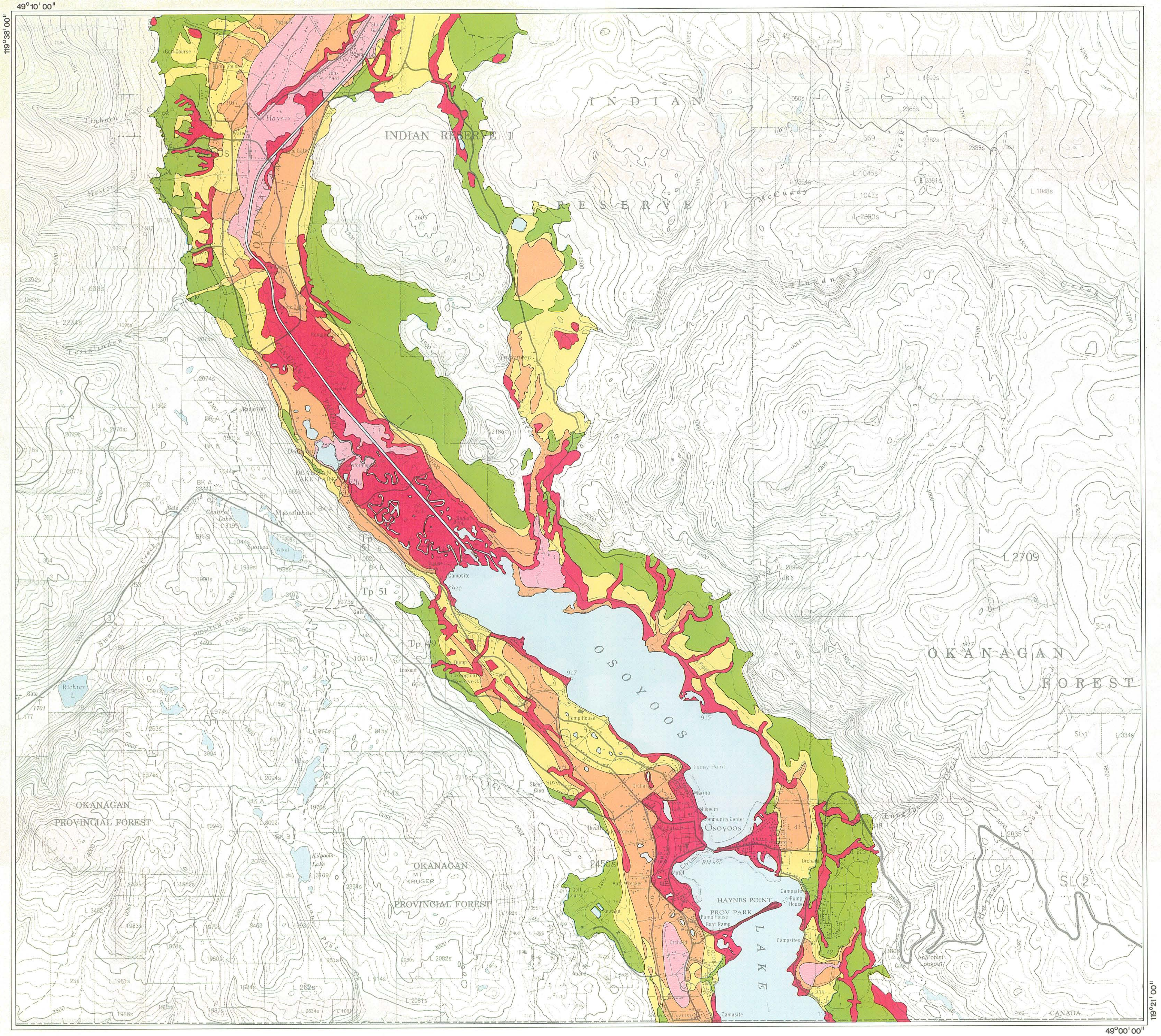
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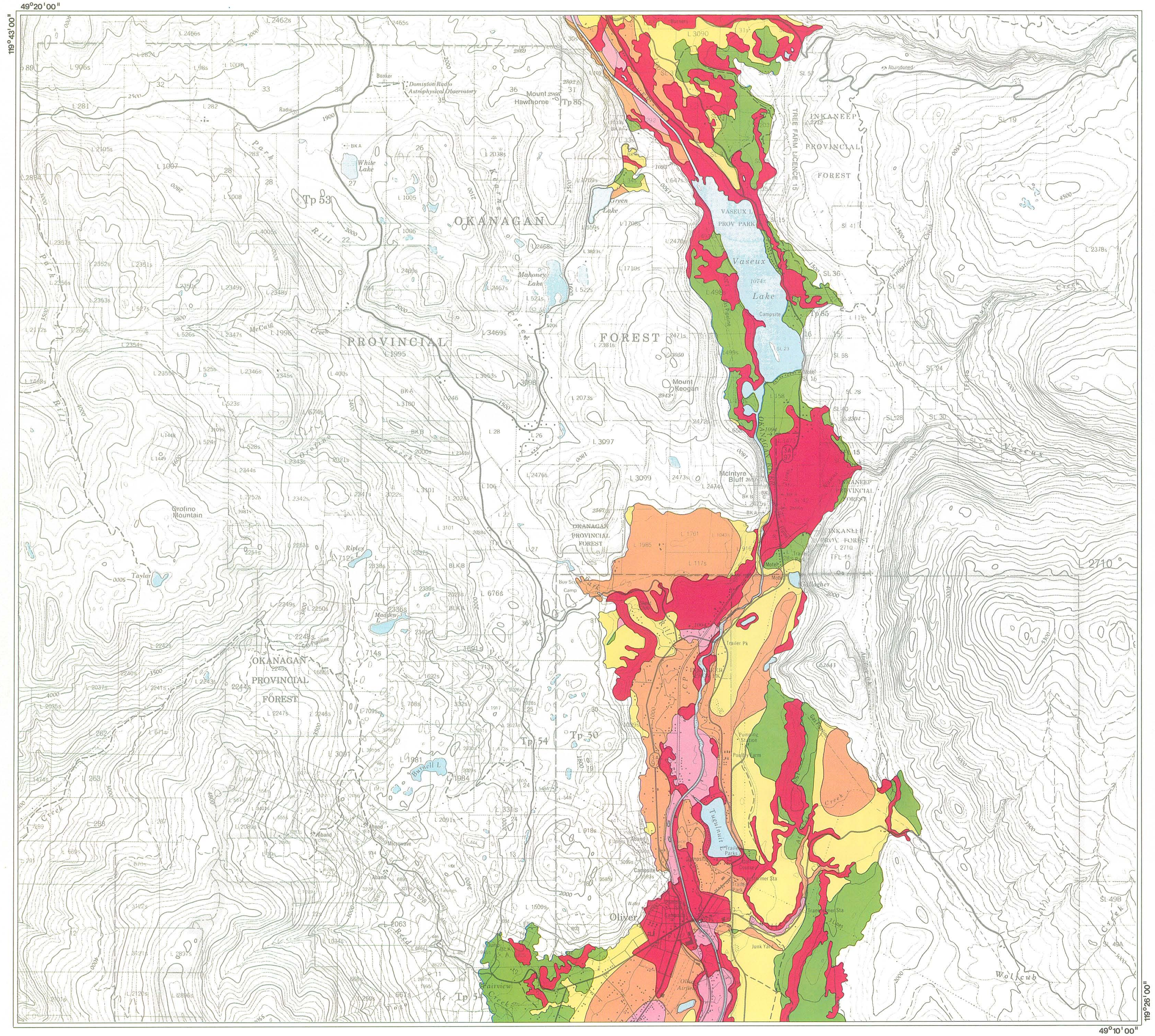
INDIAN RESERVE 1
INDIAN
RESERVE 1
Haynes
Inkaneep
Inkaneep Creek
McCuddy
Baldy Creek
OKANAGAN FOREST
L 2709
Tp 51
Tp 49
Campsite
Deadman
OSOYOOS
Lacey Point
Marina
Museum
Community Center
Osoyoos
City Limits
Motel
HAYNES POINT
PROV PARK
Boat Ramp
Pump House
Campsite
LAKE
Golf Course
Orchard
Richter L
RICHTER PASS
Spotted
Blue
Kilpoola Lake
OKANAGAN
PROVINCIAL FOREST
MT KRUGER
Anarchist Lookout
Lone Pine
Strawberry Ck
SL 2
SL 4
CANADA
49°00'00"
119°21'00"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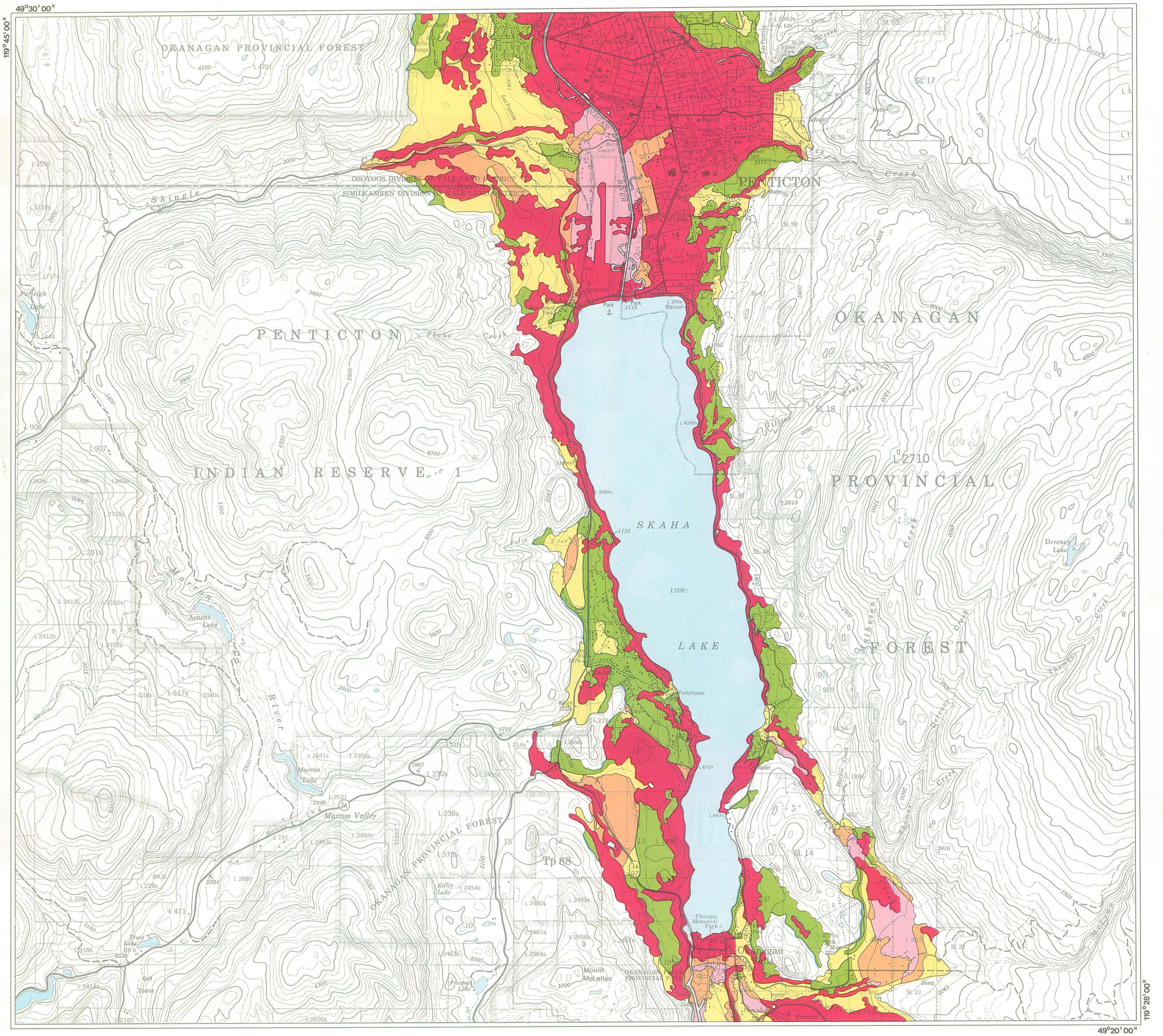
OKANAGAN
PROVINCIAL
FOREST
White Lake
Mahoney Lake
Mount Keogan
McIntyre Bluff
INKANEEP
PROVINCIAL
FOREST
Vaseux Lake
Oliver
Tp 53
Tp 54
49°10'00"
119°26'00"


49°30'00"
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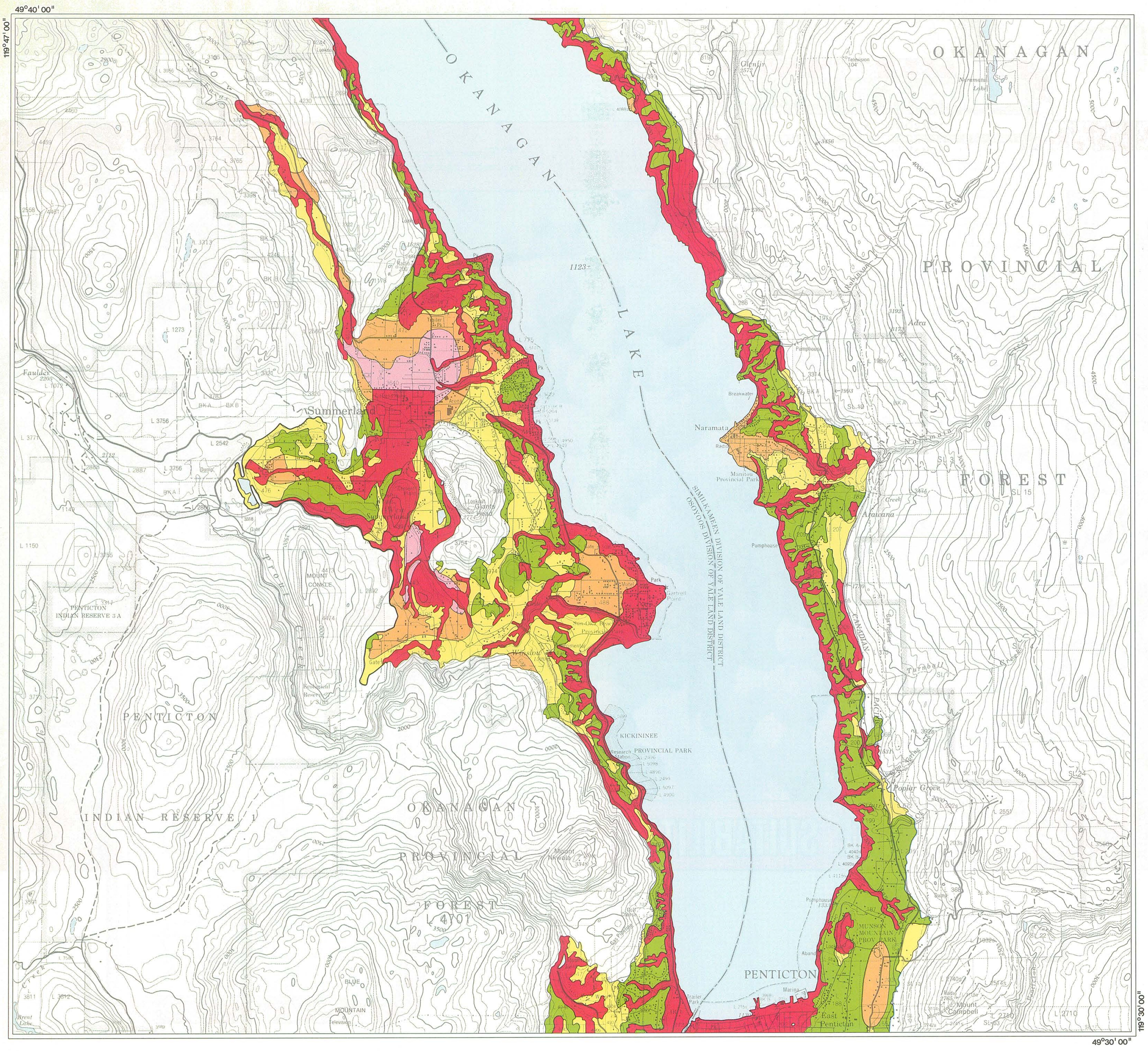
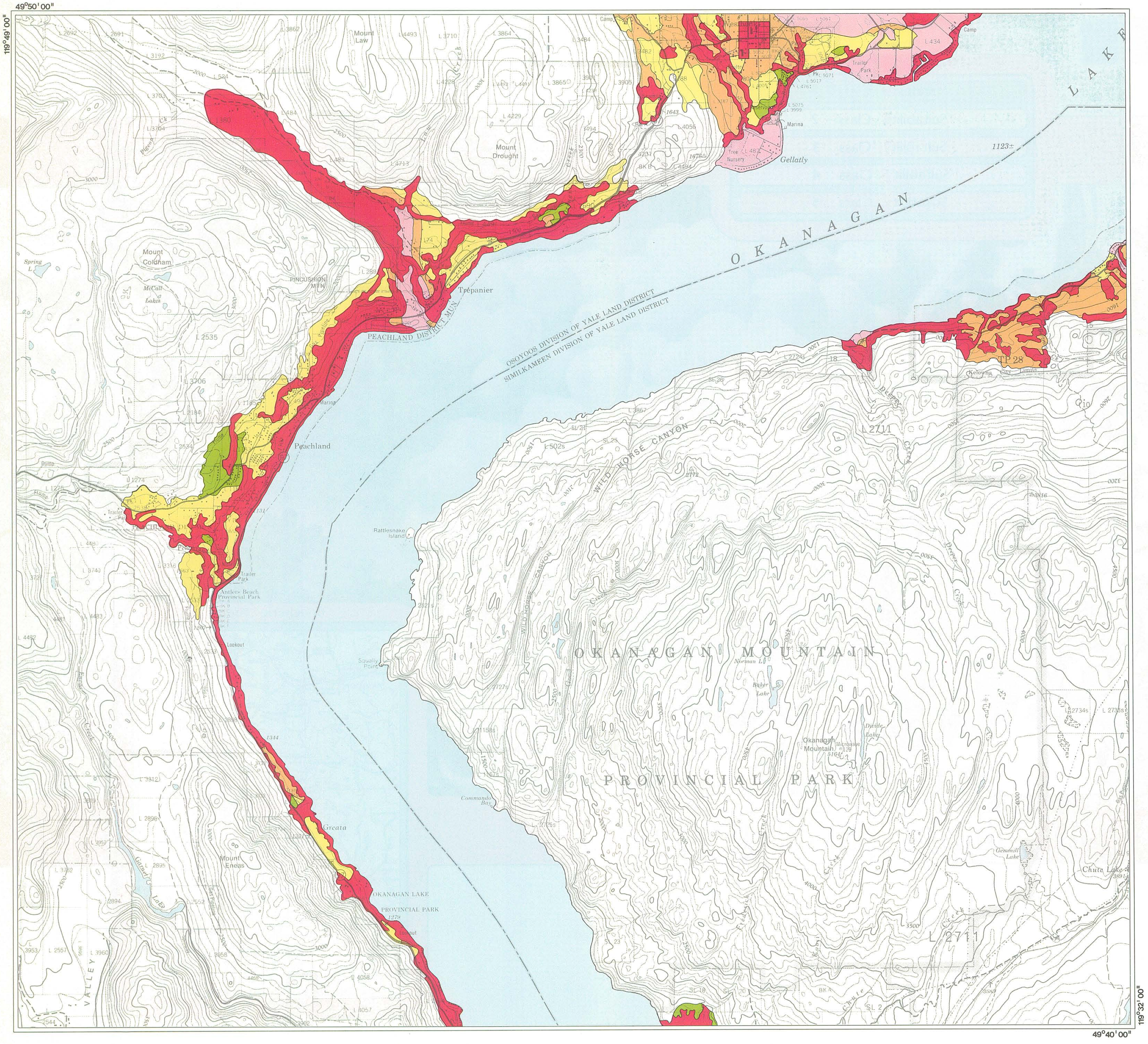
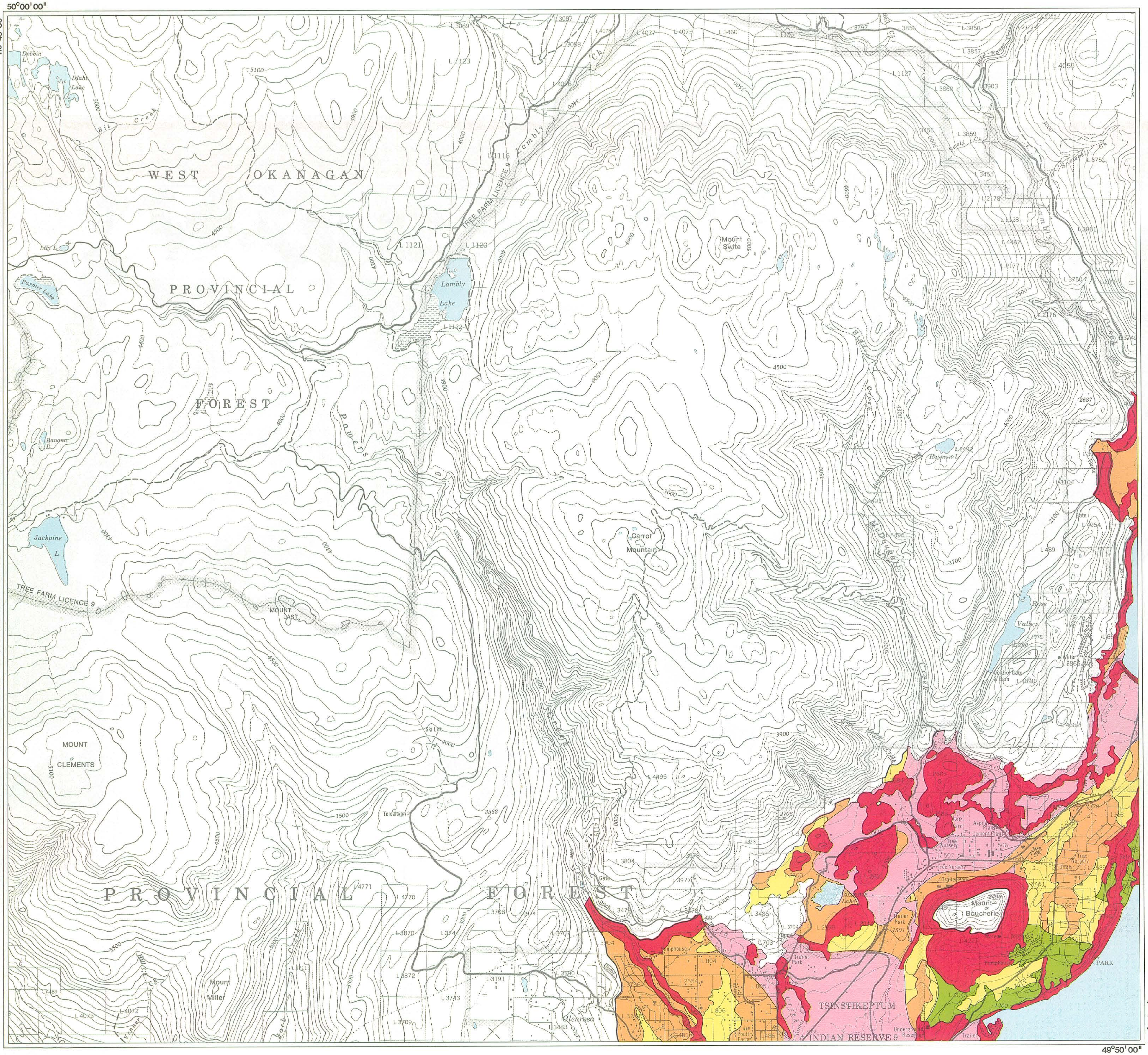
OKANAGAN PROVINCIAL FOREST
OSOYOOS DIVISION OF YALE LAND DISTRICT
SIMILKAMEEN DIVISION OF YALE LAND DISTRICT
Shingle
Farleigh Lake
PENTICTON
Skaha Creek
INDIAN RESERVE 1
OKAGAN RIVER
Sawmill
Campsite
Park
1115
Marina
Hospital
Museum
Golf Course
Rifle Range
Gas Pipeline
Trailer Park
Stewart Creek
Creek
OKANAGAN
PROVINCIAL
FOREST
L 2710
Gillies
SKAHA
LAKE
1108±
1125
Lookout
Felis Creek
Zoo
Kaleden
Pumphouse
Weigh Scale
Aeneas Lake
Marron
River
Marron Lake
Marron Valley
Trout Lake
Golf Course
OKANAGAN PROVINCIAL FOREST
Tp 88
Kitley Lake
Prather Lake
Mount McLellan
OKANAGAN FALLS PROVINCIAL PARK
Christie Memorial Park
Okanagan Falls
Water
Matheson
Derenzy Creek
Derenzy Lake
Thomas Creek
Harkin Creek
McLean Creek
Strip Mine
Dump
Shuttleworth
Sawmill
49°20'00"
119°28'00"



49°40'00"
119°47'00"
49°30'00"
119°30'00"
OKANAGAN LAKE
OKANAGAN PROVINCIAL FOREST
OKANAGAN PROVINCIAL FOREST L 4701
Summerland
Naramata
Manitou Provincial Park
Arawana
Poplar Grove
KICKININEE PROVINCIAL PARK
PENTICTON
East Penticton
MUNSON MOUNTAIN PROV PARK
PENTICTON INDIAN RESERVE 1
PENTICTON INDIAN RESERVE 3 A
MOUNT CONKLE
Giants Head
Mount Nkwala
BLUE MOUNTAIN
Mount Campbell
Glenfir
Adra
Faulder
Garnett Point
SIMILKAMEEN DIVISION OF YALE LAND DISTRICT
OSOYOOS DIVISION OF YALE LAND DISTRICT
CANADIAN PACIFIC
Trout Creek
Naramata Creek
Turnbull Cr
Naramata Lake
1123


49°50'00"
119°49'00"
Mount Law
Mount Drought
Mount Coldham
McCall Lakes
Spring L.
PINCUSHION MTN
Pigeon Ck
Trepanier
PEACHLAND DISTRICT MUN
Peachland
Marina
Gas Pipeline
Flume
Dump
Trailer Park
Antlers Beach Provincial Park
Lookout
Greata
Mount Eneas
Garnet Lake
Eneas Creek
VALLEY
OKANAGAN LAKE
PROVINCIAL PARK
Rattlesnake Island
Squally Point
Commando Bay
OKANAGAN LAKE
OSOYOOS DIVISION OF YALE LAND DISTRICT
SIMILKAMEEN DIVISION OF YALE LAND DISTRICT
1123±
Westbank
Gellatly
Tree Nursery
Camp
WILD HORSE CANYON
OKANAGAN MOUNTAIN
PROVINCIAL PARK
Norman L.
Baker Lake
Divide Lake
Okanagan Mountain
5164
Gemmill Lake
Chute Lake
3891
Deeper Creek
Chute Creek
Kelowna City Limits
TP 28
L 2711
49°40'00"
119°32'00"


50°00'00"
119°49'00"
49°50'00"
119°32'00"
WEST OKANAGAN
PROVINCIAL
FOREST
PROVINCIAL FOREST
TREE FARM LICENCE 9
Lambly Lake
Mount Swite
Carrot Mountain
Jackpine L
Paynter Lake
Dobbin L
Lily L
Banana L
MOUNT LAST
MOUNT CLEMENTS
Mount Miller
Mount Boucherie
Hayman L
Rose Valley Lake
McDougall Creek
Powers Creek
Lambly Ck
Bit Creek
Ski Lift
Television
Glenrosa
TSINSTIKEPTUM
INDIAN RESERVE 9
Trailer Park
Tree Nursery
PARK

49°56'00"

119°32'00"

KELOWNA

Westside

Okanagan Lake

Okanagan Mission

Rutland

East Kelowna

Benvoulin

Mount Knox

Knox Mountain Park

Mount Dilworth

Black Knight Mountain

MINE HILL

Tp 25

Tp 26

Tp 27

Tp 28

Tp 29

CANADIAN PACIFIC

Hydraulic

Duncan Creek

Mill Creek

Bulman Creek

Pumphouse

Reservoir

Golf Course

Trailer Park

Lookout

Marina

Mission Beach Prov Park

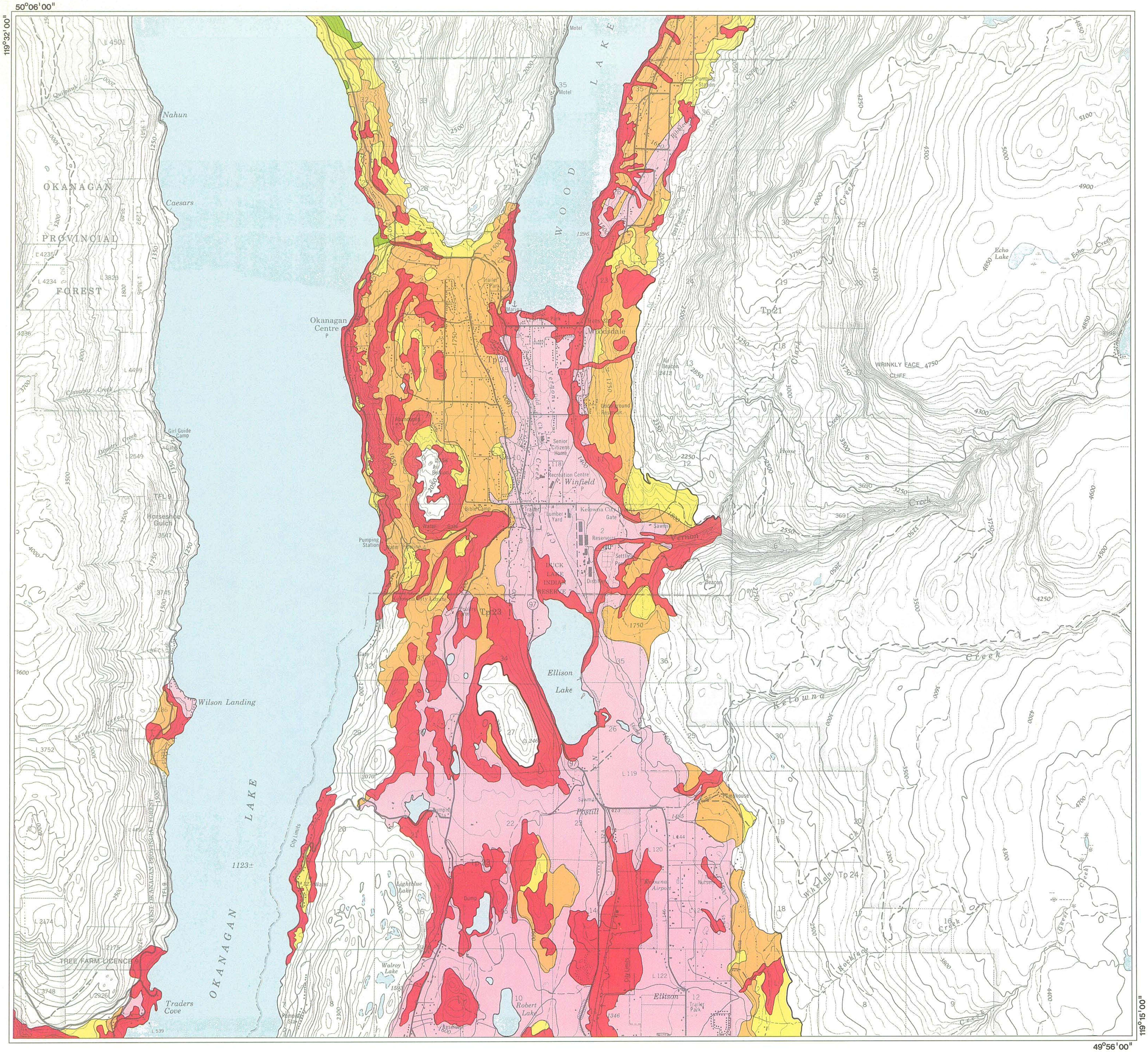
Rutland Community Provincial Park

SIMILKAMEEN DIVISION OF YALE LAND DISTRICT

OSOYOOS DIVISION OF YALE LAND DISTRICT

119°15'00"

49°46'00"


50°06'00"
119°32'00"
119°15'00"
49°56'00"
OKANAGAN
PROVINCIAL
FOREST
Nahun
Caesars
Okanagan Centre
Girl Guide Camp
Horseshoe Gulch
TFL 9
Wilson Landing
TREE FARM LICENCE 9
WEST OKANAGAN PROVINCIAL FOREST
Traders Cove
OKANAGAN
LAKE
1123±
WOOD
LAKE
Woodsdale
Winfield
Senior Citizens Home
Recreation Centre
Lumber Yard
Kelowna City Limits
Reservoir
DUCK LAKE INDIAN RESERVE
Ellison
Lake
Pumping Station
Postill
Kelowna Airport
Ellison
Robert Lake
Lightalue Lake
Walroy Lake
Tp 21
Tp 23
Tp 24
Echo Lake
Echo Creek
WRINKLY FACE CLIFF
Kelowna
Creek
Whelan Cr.
Trailer Park
Air Beacon
Underground Reservoir