

DATABASE EXPLANATORY NOTES

ECOSECTION: SOUTHERN OKANOGAN HIGHLAND

DATA BASE RATING SYSTEM FOR ATTRIBUTES:

- 1 - Attribute well represented in quality, extent and viability
- 2 - Attribute generally represented but lacking in some aspect(s) of quality, extent and viability
- 3 - Attribute occurs but lacks significantly in one or more aspects of quality, extent and viability
- 4 - Attribute not found
- ? - Unknown; requires research and inventory
- ! - Needs verification
- * - See Comments for more information or clarification

GENERAL CHARACTERISTICS

***see sources list for references for the following entries.**

DISTINCTIVE FEATURES:

- WmDryCl Warm dry climate
- LgGrsl Large grasslands: extensive grasslands on south facing slopes
- ForSlop Forested north facing slopes
- DpRivVall Deep valleys cut by the Kettle and Granby Rivers
- AllFldpl Floodplain of the Kettle River
- TransSett Transportation and Settlement: historic and present: mining, agriculture, railroad, forestry
- RndSums Rounded summits from glacial erosion

GEOLOGY:

- Bath Batholiths (intrusive) rocks of the following formations:
 - Nelson Plutonic Rocks (middle Jurassic): hornblende-biotite granodiorite
 - Okanagan Batholith (Jurassic): fresh biotite granodiorite and granite
 - Shingle Creek Porphyry (Eocene): granite and felsite
- Meta Metamorphic rocks of the following Groups
 - Anarchist Group: amphibolite, greenstone, quartz-chlorite schist, quartz biotite schist
 - Grand Forks Gneiss (Proterozoic and Paleozoic): biotite, hornblende granodiorite orthogneiss, paragneiss, amphibolite and amphibolitic gneiss
- Volc Volcanics of the following formations
 - Marama Formation (Eocene): trachyandesite with minor intercalated pyroclastic deposits
 - Kitley Lake Formation (Eocene): trachyte to trachyandesite, plagioclase and biotite glomerophenocrysts
 - Yellow Lake Formation (Eocene): tabular flows of pyroxene-rich mafic phonolite
- Sed Sedimentary rocks of the following Springbrook Formation (Eocene): coarse boulder and pebble conglomerate with sandstone, siltstone and shale

GENERAL PHYSIOGRAPHY AND LANDFORMS:

*** From Roemer, H. 1994. *Surficial Materials and associated Landforms: Comparative table and recommended terms to choose from.* See Sources list for other references.**

IntrusBed	Intrusive bedrock: resistant bedrock responsible for the general shape of landforms
VolcBed	Volcanic bedrock: resistant bedrock responsible for the general shape of landforms
MetaBed	Metamorphic bedrock: resistant bedrock responsible for the general shape of landforms
SedBed	Sedimentary bedrock: resistant bedrock responsible for the general shape of landforms
DpRivVall	Deep River Valley: glacial deepened valley with the Kettle and Granby Rivers
AllFldpl	Alluvial floodplain: recent floodplain of the Kettle River
Glaciofluv	Glaciofluvial outwash terrace; kettled outwash; glaciofluvial fans and deltas
TillMant	Till mantle: deep till over bedrock
TillVen	Till veneer: shallow till over bedrock
MeltwtrChan	Meltwater channel
Talus	Talus slopes
RockBlfs	Rock bluffs: bare rock; some vegetation in seepage sites

CLIMATE CHARACTERISTICS:

HtDryS-ClDryW	Hot, dry summers - cool, dry winters in valley bottom
Transtn	Transitional climate between the dry Columbia Basin to south in Washington and the moist Columbia Mtns to the east

HYDROLOGICAL CHARACTERISTICS:

LgRiv	Large rivers: Kettle River, Granby River and floodplains
SmRiv-Strms	Smaller rivers and streams drain the valley and flow into the rivers
Wtld	Wetlands associated with the creeks and rivers, e.g. near Gilpin

SOILS:

DkBrChern	Dark brown chernozems: Located in the grassland or grassland-forest communities of the valley bottom near Grand Forks.
BlChern	Black chernozem: Located in grassland or grassland-forest communities of the hills and valley bottom to the south of the ecosection west of Grand Forks.
EutBrun	Eutric brunisol: Located as the forested soils along the northern portion of the valley

VEGETATION CHARACTERISTICS

*** Information derived from an application of *A Guide to Site Identification and Interpretation for the Kamloops Forest Region.* See Sources list for more references.**

- (A) - >5%; only found in ecosection
- (B) - <5%; only found in ecosection
- (C) - >5%; common in other ecosections
- (D) - <5%; common in other ecosections

B.G.C. SUBZONES AND VARIANTS:

PPdh1	Kettle Dry Hot Ponderosa Pine Variant
IDFxfh1	Okanagan Very Dry Hot Interior Douglas-fir Variant

IDFdm1 Kettle Dry Mild Interior Douglas-fir Variant
ICHmk1 Kootenay Moist Cool Interior Cedar-Hemlock Variant

OLD GROWTH SPECIES:

PPdh1 open stands of ponderosa pine with minor amounts of interior Douglas-fir
IDFxm1 open forests of interior Douglas-fir and ponderosa pine
IDFdm1 Douglas-fir is the climax tree species.
ICHmk1 Hybrid white spruce, western redcedar and subalpine fir are the climax species

DIVERSITY OF PLANT ASSOCIATIONS:

PPdh1 zonal sites have open stands of ponderosa pine with bluebunch wheatgrass, cheatgrass, junegrass and arrow-leaved balsamroot in the understory. Grassland sites are more common than forested sites. Dry sites and characterized by grasslands of bluebunch wheatgrass and balsamroot and very dry sites with selaginella, blue bunch wheatgrass and blue-eyed Mary. Wetter sites have ponderosa pine, and trembling aspen, snowberry and Kentucky bluegrass. On very wet sites trembling aspen, black cottonwood, snowberry and horsetail are found.

IDFxm1 zonal sites with open forests of interior Douglas-fir and ponderosa pine. Sparse shrub layer of birch-leaved spirea. Pinegrass dominates the understory and sparse cover of lawn moss. Dry sites characterized by very open stands of interior Douglas-fir and ponderosa pine with a sparse understory of shrubby penstemon, saskatoon, birch-leaved spirea, snowbrush and bluebunch wheatgrass. Wet sites characterized by interior Douglas-fir and an understory of Douglas maple, common snowberry, red-osier dogwood and black gooseberry. On wetter sites, willows and a dense herb cover of sedges, buttercups, bluejoint and tufted clubrush are present.

IDFdm1 On zonal sites Douglas-fir is the climax tree species with seral stages dominated by lodgepole pine and western larch. The understory consists of herbs, birch-leaved spirea, soopalallie and pinegrass with a poorly developed moss layer. Dry sites feature open stands of ponderosa pine and Douglas-fir. Bluebunch wheatgrass dominates the understory. Wet sites have hybrid white spruce with an understory of red-osier dogwood, thimbleberry, black gooseberry, bunchberry and on wetter sites common horsetail and oak fern. No western redcedar is found in this variant.

ICHmk1 Mixed stands of lodgepole pine, Douglas-fir, western larch, hybrid white spruce and subalpine fir. The understory consists of falsebox, black huckleberry, Utah honeysuckle, Sitka alder, pinegrass, twinflower, queen's cup and bunchberry. On dry site, Douglas-fir, lodgepole pine and western larch form open forests with and understory of pinegrass, kinnikinnick and falsebox. On Wet sites hybrid white spruce, subalpine fir and western redcedar dominate with an understory of common horsetail, lady fern and oak fern. No western hemlock occurs in this variant.

DIVERSITY OF SUCCESSIONAL STAGES:

*** Information about successional stages is not available in any detail.**

- PPdh1 succession stages of open grasslands with young trees; climax ponderosa pine forest
- IDFxb1 succession stages of open grasslands with young trees; mature ponderosa pine forest; climax Douglas-fir forest
- IDFdm1 western larch and lodgepole pine are the seral species; Douglas-fir is the climax tree species
- ICHmk1 seral stands of lodgepole pine, Douglas-fir and western larch; hybrid white spruce, western redcedar and subalpine fir are the climax species

WETLANDS:

- MarPthls Small marshes along river edges/small potholes (presence of bulrushes and cattails)
- RivRip River riparian: riparian zones along the Kettle and Granby rivers (alder, cottonwood, aspen, water birch, paper birch, willows)

ALPINE/SUBALPINE:

Absent from Ecosection

GRASSLANDS:

- PPdh1
IDFxb1a

RARE OR ENDANGERED PLANTS:

*** From Conservation Data Centre Tracking Lists and Ecosection lists (G1, G2, G3, S1, S2)**

Nettle-leaved giant hyssop/ Palish Paintbrush/ Obscure Cryptantha/ Prairie Gentian/ Okanogan stickseed/ Northern linanthus/ Alpine prickly gooseberry/ Northern gooseberry/ Sweet-marsh butterweed/ Hairstem groundsmoke/ Prairie peppergrass/ Brewer's monkey-flower/ Narrow-leaved goosefoot/

PLANTS OF SPECIAL INTEREST:

*** From Conservation Data Centre Tracking Lists (S3) and Ecosection lists, Ecological Reserves Reports, staff knowledge**

Water marigold/ Pink fairies/ Richardson's penstemon/ Columbia goldenweed/

SPECIAL PLANT HABITATS:

*** From Conservation Data Centre Tracking Lists and Ecosection lists, Ecological Reserves Reports, staff knowledge**

River riparian/ Grassland/

WILDLIFE CHARACTERISTICS

*** Entries in this series were derived from staff knowledge and the latest information be ecosection and tracking list from the Conservation Data Centre. See Sources list for other references.**

LARGE CARNIVORES:

Black bear/ Coyote/ Badger/

FURBEARERS:

Muskrat/ Beaver/ Western long-tailed weasel/

UNGULATES:

California bh sheep/ Mule deer/ White-tailed deer/ elk/

SMALL MAMMALS:

N. pocket gopher/ Yellow-bellied marmot/ Big brown bat/ Little brown myotis/

RAPTORS AND OWLS:

Long-eared owl/ Golden eagle/ American kestrel/ N. harrier/

CAVITY NESTERS:

Williamson's sapsucker/ Lewis' woodpecker/ Pygmy nuthatch/ White-headed woodpecker/
W. bluebird/ Black-backed woodpecker/ Red-naped sapsucker/

WATERFOWL:

High diversity of ducks, geese, swans/

SHORE BIRDS:

Long billed curlew/ Killdeer/ Spotted sandpiper/

GROUND NESTING BIRDS:

Common poorwill/ Common nighthawk/ Blue grouse/ Vesper sparrow/

PASSERINE BIRDS:

High diversity of species/ Canyon wren/

REPTILES AND AMPHIBIANS:

W. Rattlesnake/ W. yellow-bellied racer/ Rubber boa/ Gopher snake/

FISH:

Rainbow trout/ Cutthroat trout/ Chiselmouth/

INSECTS AND ARACHNIDS:

No information

RARE OR ENDANGERED WILDLIFE:

*** From Conservation Data Centre Tracking Lists and Ecoregion lists (G1, G2, G3, S1, S2)**

Tiger salamander/ White-headed woodpecker/ Speckled dace/

WILDLIFE OF SPECIAL INTEREST:

*** From Conservation Data Centre Tracking Lists (S3) and Ecoregion lists, Ecological Reserves Reports, staff knowledge**

CDC S3:

Chiselmouth/ Canyon wren/ Mottled sculpin/ Shorthead sculpin/ Bobolink/
Lewis' woodpecker/ Great basin pocket mouse/ Flammulated owl/
Great basin spadefoot toad/ W. rattlesnake/ W. yellow-bellied racer/
Great Basin gopher snake/

SPECIALIZED HABITATS:

Rock bluffs/ Grasslands/ Escape terrain (CBH)/ River riparian/
Waterfowl staging areas/

RECREATION CHARACTERISTICS

*** see RPAT Ecoregion Description Report: Doug Levers: ??Title for descriptions of each of the following entries. See Sources list for other references.**

RECREATION SETTINGS:

***Derived from RPAT reports and forms**

- (A) highly valued setting, dominant in ecoregion
- (B) highly valued setting, not dominant in ecoregion
- (C) moderately valued setting
- (D) low valued setting

- (A)RFP River and Floodplain
- (A)G Grasslands
- (B)SVS Steep Valley Sides
- (C)FS Forested Slopes

RECREATION OPPORTUNITIES SPECTRUM:

*** As applied by the Ministry of Forests**

Primitive	at least 8 km from a 4 wheel drive road and greater than 5000 hectares in size. Very high probability of experiencing solitude, closeness to nature, self-reliance and challenge; unmodified natural environment; little on-the ground evidence of people.
Semi prim no motors	Semi-primitive Non-motorized: at least 1 km from a 4 wheel drive road and greater than 1000 hectares in size. High probability of experiencing solitude, closeness to nature, self-reliance and challenge; natural or natural-appearing environment; some on-the ground evidence of other people, some on-site controls. Non-motorized access and travel on trails, cross-country and waterways.
Semi prim motorized	Semi-primitive Motorized: at least 1 km from a 2 wheel drive road and greater than 1000 hectares in size. Moderate opportunity for solitude, closeness to nature; a high degree of self-reliance and challenge; natural or natural-appearing environment; some on-the ground evidence of other people, some on-site controls. Motorized access on trails, primitive roads and cross-country may occur.
Roaded resource land	Often within 1 km of a 2 wheel drive road with a gravel or dirt surface. Opportunities for both private and social interaction; feelings of independence and freedom. Natural environment may be substantially modified. On-the-ground evidence of other people, some on-site controls; access and travel is by motorized vehicle.
Rural	No remoteness criteria, no size criteria. Opportunities for social interaction and convenient facilities. Natural environment is culturally modified e.g. pastoral farmlands and utility corridors

PRESENT RECREATION OPPORTUNITIES:

*** Using the broad recreation goals of BC Parks**

- (A) a primary goal within the ecosection
 - (B) a secondary goal within the ecosection
 - (C) a minor goal within the ecosection
 - (D) not a goal within the ecosection
- (C)Back country/ (A)Travel Corridor/ (B)Destination/ (A)Local Recreation/

POTENTIAL RECREATION OPPORTUNITIES:

*** Using the broad recreation goals of BC Parks**

- (B)Back country/ (A)Travel Corridor/ (A)Destination/ (A)Local Recreation/

RECREATION, USE AND APPRECIATION:

*** Derived from staff knowledge of ecosection**

- (A) a major attraction in ecosection
- (B) a secondary attraction in ecosection

(A)swimming/ (A)canoeing/ (A)fishing/ (A)camping/ (A)cycling/ (B)horseback riding/ (A)viewing/ (A)nature study/ (A)cultural appreciation/ (A)auto touring/

CULTURAL HERITAGE CHARACTERISTICS

*** See RPAT Ecoregion Description Report: Commonwealth: *title* for descriptions of each of the following entries. See Sources list for other references.**

CULTURAL THEMES:

*** Derived from RPAT reports and forms**

- (H)SettNat** Settlement: Native: Okanagan Indians along Kettle River
- (H)EcActAgrWWI** Agriculture: World War I: Doukhobour settlement near Grand Forks. Agriculture has been an important activity in the Kettle River Valley.
- (H)EcActAgrMod** Agriculture: Modern
- (H)EcActMiningEar** Economic Activity: Mining: Early Post Contact: use of surface minerals: Placer mining near Rock Creek (1860).
- (H)EcActMiningBoom** Economic Activity: Mining: Boom: The eastern part of the ecoregion participated actively in the mining boom of the 1890's.
- (M)TransRRBoom** Transportation and Communications: Railroad: Boom - Kettle Valley Railroad sites
- (H)EcActManufHydro** Economic Activity: Manufacturing: Early hydroelectric power development at Cascade in the late 1890's.

P.A.'s SPECIAL FEATURES (Rare, Unique, Nationally or Provincially significant)

LANDSCAPES:

VEGETATION:

WILDLIFE:

RECREATION:

CULTURAL:

OTHER:

RESEARCH VALUES:

EDUCATION & INTERPRETATION VALUES:

COMMENTS

SOURCES

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