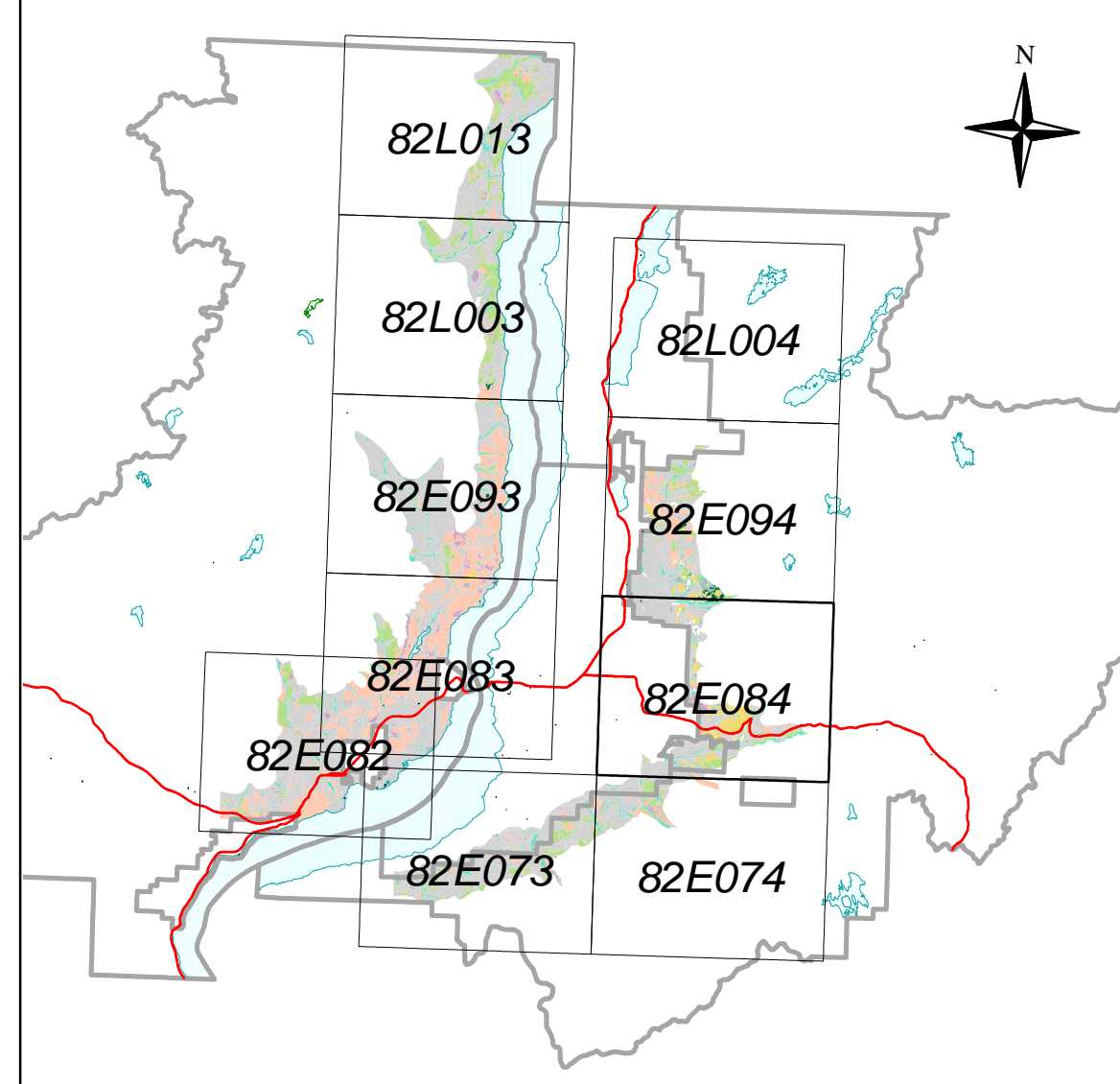


### Sensitive Ecosystems of the Regional District of Central Okanagan

Sensitive Ecosystem Classifications			
<b>BW</b>	<b>Broadleaf Woodland</b> Ecosystems dominated by deciduous species including aspen copces (BW-ac) in grassland areas, and aspen seepage (BW-as) slopes; excludes old forests		
<b>WD</b>	<b>Conifer Woodlands</b> Open stands of Douglas-fir or Ponderosa pine, often on shallow soils; excludes old forests		
<b>GR</b>	<b>Grasslands</b> Ecosystems dominated by bunchgrasses (grassland: GR-gr) and shrubland (GR-sh) ecosystems that occur in a grassland matrix		
<b>NA</b>	<b>Not Sensitive</b>		
	<b>No Data/Outside Study Area</b>		
<b>OF</b>	<b>Old Forest</b> Forest ecosystem dominated by large, old trees; excludes old riparian forests (OF-co)		
<b>SV</b>	<b>Sparsely Vegetated</b> Shrubby rock outcrops (shrub: SV-sh), grassy or unvegetated rock outcrops (SV-ro), talus (SV-ta) slopes, and cliffs (SV-cl)		
<b>RI</b>	<b>Riparian</b> Streamside ecosystems on floodplains and benches along creeks and rivers (bench: RI-fp), ecosystems in gullies with intermittent or permanent creeks (gully: RI-gu); fringe ecosystems associated with pond and lake shorelines or sites with significant seepage (fringe: RI-fr) and the river bed of large systems (river: RI-r)		
<b>WN</b>	<b>Wetlands</b> Non-forested ecosystems where the water table is at or near the surface; includes marshes (WN-ms), swamps (WN-sp), and shallow open water (WN-sw) ecosystems including ponds		
	Dot Density Base Dot Size (4 pt)		
Other Important Ecosystem Classifications			
<b>DG</b>	<b>Disturbed Grasslands</b> Grasslands with some noxious or invasive weeds		
<b>MF</b>	<b>Mature Forest</b> Forests dominated by mature trees; includes broadleaf (MF-bd) forests, coniferous (MF-co) forests, and mixed (MF-mx) deciduous and coniferous forests; excludes mature riparian forests and mature coniferous and broadleaf woodlands		
Non-SEI Features			
	Highway Route		
	Hard Surface - Primary Route		
	Hard Surface - Secondary Route		
	Loose Surface - Major		
	Loose Surface - Minor		
	Provincial & Regional Park Boundary		
	Local Gov't Jurisdictional Boundary		
	SEI Study Area Polygon Outlines		
	Streams		
	Lake/Reservoir		
	Marsh/Swamp		
	Area of Exclusion		
	Depression Contour		
	Depression Index Contour		
	Index Contour		
	Intermediate Contour		
	Mountain Peak		
	Spot Height		
Data Sources for 82E084			
<b>Aerial Photographs</b>			
Roll	F#	Date	Scale
C96035	76 - 80	7/12/1996	15000
C96037	27 - 32	7/13/1996	15000
C96037	205 - 209	7/13/1996	15000
C96038	23 - 30	7/13/1996	15000
C96038	205 - 211	7/13/1996	15000
<b>Field Visits</b>			
Field visits were made during the summers of 2000 and 2001.			



**Sensitive Ecosystem Inventory**  
**Regional District of Central Okanagan**

Map Sheet Approximate:  
**82E.084**

Scale 1 : 20,000

Contour Interval: 20 meters  
Projection: UTM, Datum: NAD83; Spheroid: GR580

**Introduction**

Sensitive Ecosystems are ecosystems that are ecologically sensitive and/or rare in the landscape. These areas also have significant biodiversity values and provide many habitat features required by threatened and endangered plant and animal species.

**Rationale**

The central Okanagan basin of British Columbia is an area of great ecological significance within both the province of B.C. and Canada as a whole. It is an area with high biodiversity values, and many rare and endangered ecosystems, plant and animal species. The warm dry climate of this valley has long attracted humans to live here. The Okanagan Valley is also the area with the highest population densities in the interior of British Columbia and has a rapidly growing population. This area has been subject to extensive agricultural conversion, significant changes to ecosystem structure and function through fire exclusion, and intense urban and rural development pressure. These pressures have resulted in the loss, fragmentation, and degradation of many of these natural areas. This Sensitive Ecosystems Inventory (SEI) was initiated by the Regional District of the Central Okanagan to provide an inventory of the remaining rare and fragile ecosystems and habitats for many wildlife species to support sustainable landscape level land-use decisions and to encourage private land stewardship.

**Ecological Significance**

These sensitive terrestrial ecosystems are ecologically significant because of their rarity and fragility and as a result of the great diversity of species they support, including habitat for many rare and endangered species.

Moist and wet ecosystems are key ecosystems in a climate that is primarily supported by dry, open forests and grasslands historically. They support a rich diversity of species and have important hydrologic functions including filtering out pollutants, safely storing and releasing water (especially during peak flows), preventing stream bank erosion and maintaining water quality and water temperatures.

**Wetland Ecosystems**

Wetland ecosystems are extremely important because of their natural rarity in this area with few collecting sites and because many of them have been lost to development. Wetlands include marshes, swamps, and small water bodies. They support a wide diversity of organisms including food, shelter, and breeding sites for ducks, songbirds, fish, amphibian, and invertebrate species.

**Riparian Ecosystems**

Riparian ecosystems include benches along streams and rivers, gullies with intermittent or permanent creeks, and fringes of lakes and ponds and sites with significant seepage. These sites frequently form natural corridors through the landscape, connecting other ecosystems and providing passageways for animals. Damming, diversions, channelization, draining, and pollution have seriously affected many riparian ecosystems.

**Old Forest Ecosystems**

Old forest ecosystems are ecosystems that are dominated by large, old trees. Most of these forests have been lost to selective logging of larger trees, ingrowth of dense trees resulting from fire exclusion, and development. Only small remnants of these forests remain today. Old forests and the old trees in them provide important habitat for many species including many woodpeckers, owls, and mule deer.

**Grassland Ecosystems**

Grassland ecosystems are dominated by bunchgrasses but also have a wide diversity of forbs. Large areas of grasslands have been lost to agricultural and urban development and noxious weed invasion. Most of the remaining grasslands have been converted to disturbed grasslands (see Other Important Ecosystems) through partial invasion by noxious weeds.

**Broadleaf Woodland Ecosystems**

Broadleaf woodland ecosystems are dominated by trembling aspen trees and include broad, moist basins in grassland areas. They are typically very shrubby and provide important habitat for many birds, reptiles and mammals. These ecosystems are quite rare and their most nature makes their soils sensitive to disturbance.

**Coniferous Woodland Ecosystems**

Coniferous woodland ecosystems are like forests, but have very open canopies or only scattered ponderosa pine or Douglas-fir trees. They most commonly occur on very dry sites where soils are shallow or very shallow. Many sites have been lost to development and many areas have been altered by ingrowth of trees associated with fire exclusion, weed invasion, and other human disturbances.

**Sparsely Vegetated Ecosystems**

Sparsely vegetated ecosystems occur on sites where exposed bedrock or rocks limit the places where vegetation can grow. They include cliffs, rock outcrops and talus slopes with sparse shrub or grass/ herb cover. Many of these ecosystems are rare and their coarse or shallow soils make them sensitive to disturbance. They provide important habitat for bats, snakes, and raptor nests.

**Other Important Ecosystems**

Other important ecosystems are not sensitive ecosystems but have many important values associated with them. They include mature forest and disturbed grassland ecosystems.

**Mature Forest Ecosystems**

Mature forest ecosystems provide important buffer sites, provide some of the values associated with old forest ecosystems and are recruitment sites for old forests.

**Disturbed Grassland Ecosystems**

Similarly, disturbed grassland ecosystems still provide many of the important habitat values associated with grasslands, but they have some weeds (10 to 50% noxious weeds) or have lost many climax grassland species. Given the very limited extent of remaining grasslands, these are important sites for grassland restoration and maintenance of many grassland values including habitat for many rare and endangered species.

**Methodology**

The entire study area was systematically ecosystem mapped following provincial Resources Inventory Committee standards. Biocriteria and ecosystem polygons were delineated on 1:15,000 scale colour stereo aerial photographs from Geographic Data BC taken in 1994 and 1996. Field sampling (survey intensity level 4; 15-25% of polygons are field inspected) was used and a total of 19% of polygons were inspected in the field during the summers of 2000 and 2001. Three different types of plots were used, each with different levels of detail: 42 full plots, 192 ground inspections, and 505 visual inspections were completed. Following fieldwork, biocriteria labels were updated and ecosystem labels were generated for each polygon using aerial photography interpretation and field data. Up to three ecosystems were mapped in each polygon and were assigned proportions of the polygon that they occupy (to the nearest 10%). Line work on photographs was digitized using the monorestitution method, databases were compiled, reviewed, and verified, and digital (ArcInfo) and hardcopy maps were produced. All ecosystems mapped were evaluated for rarity and sensitivity and an algorithm was developed to convert ecosystem labels to Sensitive Ecosystem and Other Important Ecosystem labels (and to eliminate those ecosystems not considered sensitive). Each Sensitive Ecosystem and Other Important Ecosystem has been assigned a colour and random dots of those colours have been applied to polygons proportional to their presence in the polygon. **The location of these dots does not reflect the specific location of that Sensitive Ecosystem within the polygon.**

**Data Limitations**

The map is intended to be used as a flagging tool to accompany planning processes and management of land resources in the study area. For site-specific evaluations, more detailed field assessments are needed. The accuracy of the boundaries of the mapping is limited by the scale of the aerial photographs used (1:15,000). **Enlargement of the data beyond the source scale may result in unacceptable distortion and faulty registration with other data sets.** Rapid changes are ongoing within the study area making it important to refer to the dates of information sources.

**Credits**

**Participating Agencies:**  
Regional District of the Central Okanagan, Ministry of Sustainable Resource Management (MSRM), Conservation Data Centre (MSRM), Canadian Wildlife Service (Environment Canada) and the Habitat Conservation Trust Fund.

**Base Terrestrial Ecosystem Mapping:**  
Iverson, K. and C. Erwin. 2001 and 2002. Ecosystem Mapping of Portions of the PPH1 and IDP#1 in the Central Okanagan. Prepared for the Regional District of the Central Okanagan and the Ministry of Sustainable Resource Management.

**Sensitive Ecosystem Themes:**  
Conversion tables were developed by Kristi Iverson (Iverson & MacKenzie Biological Consulting Ltd.) and Carmen Cadran (MSRM).

**Base Mapping Data:**  
Regional District of the Central Okanagan, Ministry of Sustainable Resource Management (TRIM) Program, Geographic Data BC, Ministry of Sustainable Resource Management.

**Digitizing:**  
Bon Lee (Baseline Geomatics Inc., Victoria, B.C.)

**Cartography:**  
Iain Lawrence (Regional District of the Central Okanagan, Kelowna, B.C.)

**Funding:**  
Regional District of the Central Okanagan, Ministry of Sustainable Resource Management, the Habitat Conservation Trust Fund, and Environment Canada.

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