

MINUTES OF A PUBLIC HEARING HELD WEDNESDAY AUGUST 17, 2011, AT 7:00 P.M. AT NARAMATA OAP HALL, 330 3<sup>RD</sup> STREET, NARAMATA, B.C. REGARDING ELECTORAL AREA 'E' OFFICIAL COMMUNITY PLAN AMENDMENT BYLAW NO. 2458.03, 2011 AND ELECTORAL AREA 'E' ZONING AMENDMENT BYLAW NO. 2459.06, 2011.  
(E06834.000 – Naramata Benchland Properties Ltd.)

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Present

Tom Chapman, Chair  
Donna Butler, Development Services Manager  
Stephen Juch, Subdivision Supervisor  
Gillian Cramm, Recording Secretary

Representing

Regional District of Okanagan-Similkameen  
Regional District of Okanagan-Similkameen  
Regional District of Okanagan-Similkameen  
Regional District of Okanagan-Similkameen

9 members of the public

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The Chair declared the public hearing open at 7:08 p.m. and explained the process of the public hearing. It was noted that a binder was available which included all written comments received to date and the Chair invited anyone wishing to review the comments to do so.

The Development Services Manager outlined the proposed bylaw amendment application. She also clarified two bylaw components that will need to be adjusted by the Board if the development is supported. The first is a minor housekeeping change. The zoning bylaw makes reference to lands zoned "part Small Holdings 2". The maps accompanying the bylaw do not show the SH2 lands being rezoned. The SH2 lands north of Arawana Road are not being rezoned and reference to them should be removed. As well, the Board Resolution outlined an amendment to the OCP to exempt the subject properties from the OCP requirement to undertake a Comprehensive Development Plan. The OCP requires that a CDP be carried out for any new development over five units. The lands proposed for rezoning have the same or less development potential than the land already zoned residential and are to be rezoned Conservation Area (CA).

The Chair asked if anyone wished to speak to the proposed bylaw.

Gerry Reynolds, 1020 Sammet Road, stated that the changes will enhance the project and ensure its completion. will allow for enjoyment of the future area residents. He is in favour of the application.

The Agent submitted a summary of the application.

The Chair asked a second time if there was anyone who wished to speak further to the proposed bylaw.

The Chair asked a third time if there was anyone who wished to speak further to the proposed bylaws and hearing none, declared the public hearing closed at 7:14 p.m.

I hereby certify this to be a fair and accurate summary of the nature of the representations made by the public at the hearing held on August 17, 2011 with regard to Bylaw Nos. 2458.03, 2011 and 2459.06, 2011.

\_\_\_\_\_  
Chair

\_\_\_\_\_  
Recording Secretary

Attachments

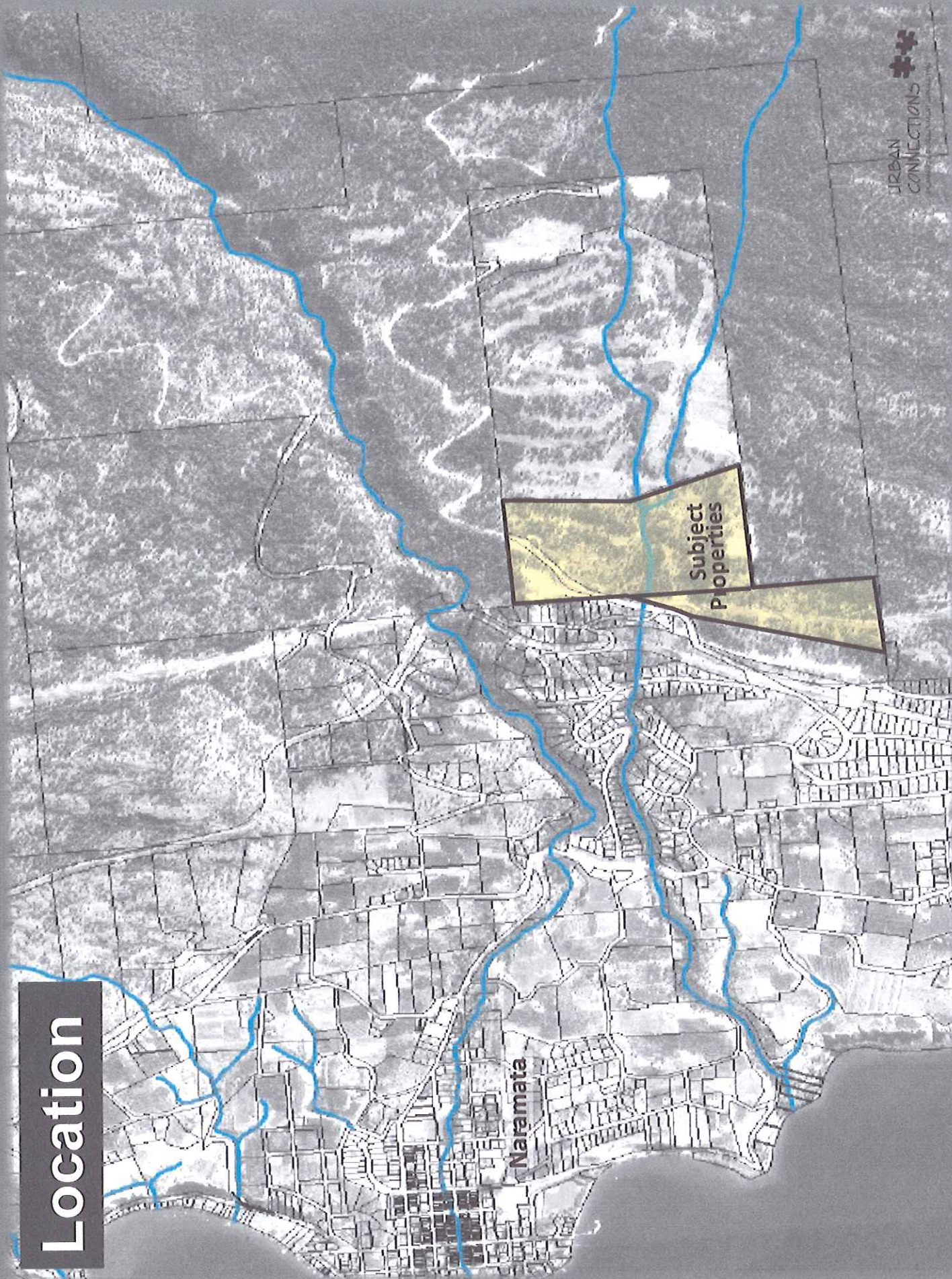




**Area 'E'  
Public Hearing  
August 17<sup>th</sup>, 2011  
Naramata Benchland Properties Ltd.  
Rezoning Application**



# Location



Naramata

Subject Properties



# Subject Properties





# Proposed Transfer of Zoning Rights



## PROPOSAL:

Transfer development rights (ability to create residential lots) from Rem. Sublot 14 to the north portion of Lot A, Plan KAP58675 and a very small portion of north west corner of DL 3473



# Current & Proposed Zoning and Development Rights

DL 3473

Lot A Plan KAP58675

## Rem Sublot 14

- Current Zoning: RS1
- Practical maximum # of lots that could be developed: 75

## Propose to Rezone to CA-Conservation Area

- CA Zone will result in no development potential on the lot

Rem Sublot 14



# Current & Proposed Zoning and Development Rights

**North Portion of Lot A Plan KAP58675 & NE portion of DL 3473**

- Current Zoning: RA
- Maximum # of lots: 1

**Rezone to SH5 Site Specific** in Sublot 14

- Proposed SH5s Zone will result in establishing a maximum of 41 single family residential parcels.

Lot A Plan KAP58675

DL 3473



# Current & Proposed Zoning and Development Rights

## South Portion of Lot A Plan KAP58675

- Current Zoning: RA
- Maximum # of lots: 1

## Rezone to RA Site Specific

- Proposed RAs Zoning will allow for the construction of sewer treatment plant.

Proposed location of Sewer Treatment Facility

Lot A Plan KAP58675  
DL 3473

Rem Sublot 14



# Proposed Transfer of Zoning Rights will Reduce Development Potential

0 units to  
41 units  
(+41 units)

DL 3473

Lot A Plan KAP58675

Transfer Development Rights

75 units to  
0 units  
(-75 units)

Rem Sublot 14

*Proposed Zoning  
amendment will  
reduce potential  
development on the  
properties by  
approximately 34  
residential lots.*



# Community Benefits - Wildlife

*Area rezoned to CA –  
Conservation Area  
will provide habitat  
and a wildlife corridor  
and will allow for an  
open and safe area  
for ungulates to  
forage and graze.*



# Community Benefits - Wildlife

*As part of the rezoning requirements, measures are being taken to protect the ability to obtain a wildlife corridor through property that is not effected by this zoning application.*





## Community Benefits - Water Storage

*During construction of the Stonebrook Development, the developer constructed an oversized water storage reservoir which is currently benefitting all residents of Naramata. If this rezoning is approved, there will be surplus water storage capacity in the recently constructed water reservoir, that will provide a long lasting benefit to the community of Naramata.*



## **Consultation Throughout Rezoning Process - APC, RDOS Staff and Director, NWAC**

- There has been 3 meetings with the Area 'E' APC to discuss and review this proposal; October 2010, and January and February 2011. The APC unanimously supported the rezoning application at their February 2011 APC meeting.*
- Considerable consultation with RDOS staff and the Director have occurred to fine tune details in the application that will result in increasing the benefit to wildlife.*
- The Naramata Water Advisory Committee has reviewed and supported the rezoning application.*



# Consultation Throughout Rezoning Process - Public Open House

*An Open House was advertised and hosted by Naramata Benchland Properties Ltd. in Benchland Properties Ltd. in Naramata on March 17, 2011.*

*• Two people attended to view the information; no comments were provided.*

## Naramata Benchland Properties Ltd OCP / Zoning Transfer

### Background

- Currently Naramata Benchland Properties Ltd. has a low density residential OCP designation and Single Family Residential Zoning on the east side of Sublot 14.
- The current zoning on the property will allow for the subdivision of the property into more than 70 lots.
- Naramata Benchland Properties Ltd. has determined that there would be a significant benefit to local wildlife if the eastside of Sublot 14 was left in its natural state for wildlife (elk) habitat preservation.
- Naramata Benchland Properties Ltd. is prepared to "down zone" the upper elevation east portion of Sublot 14 to Conservation zoning in exchange for zoning an equivalent area of adjacent Naramata Benchland Ltd. owned property for single family residential use.



## Support & Rationale For the Rezoning

- *The proposed rezoning will result in a reduction in the potential development of the properties from approximately 75 residential parcels to 41 parcels.*
- *The proposed rezoning will not provide the developer with additional development rights; rather the residential development potential will be reduced.*
- *The proposed rezoning will result in the protection and enhancement of wildlife habitat and a wildlife corridor.*



## Support & Rationale For Rezoning

- *The proposed rezoning is consistent with the OCP growth policies as it will reduce development potential on the properties, which will serve to moderate growth.*
- *The existing development potential on Sublot 14 has been accounted for in the growth potential numbers in the OCP; as such this is truly a development rights transfer proposal. No new development potential is being proposed.*



An aerial photograph of a residential area with a large reservoir in the background. The text is overlaid on the image.

## Support & Rationale For Rezoning

- *The proposed rezoning of the property will result in a surplus capacity in the new reservoir for the benefit of the community.*
- *Naramata Benchland Properties Ltd. is actively seeking a land conservation group to assume ownership of the lands to be zoned Conservation.*
- *The proposed rezoning will not have a negative effect on the use or enjoyment of any adjacent or surrounding properties.*





The Best Place on Earth

May 9, 2011

File: 58000-20/94528  
Your File: E-06834.000

NANAIMO BENCHMANS

Regional District of Okanagan Similkameen  
101 Martin Street  
Penticton BC V2A 5J9

Attention: Christopher Garrish, Planner

Re: Bylaw referral – Plan 1190, DL 2711, Subsidy Lot 14, except Plan A62, 29843, 38736, KAP44343, KAP45544, KAP46231, KAP54137, KAP57167, KAP86517, SDYD (3440 Arawana Road); Lot A Plan KAP58675, DL 3474, SDYD (3480 Arawana Forestry Road); and DL 3474 SDYD except Plans KAP4434 and KPA59640

The Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) and the Ministry of Environment have reviewed the above noted referral and provide the following response.

Comments from the Ecosystems Section of MFLNRO:

To ensure proposed activities are planned and carried out with minimal impacts to the environment and in compliance with all relevant legislation, the proponent and approving agency are advised to adhere to guidelines in the provincial best management practices (BMP's) document: Develop with Care: Environmental Guidelines for Urban & Rural Land Development (<http://www.env.gov.bc.ca/wld/BMP/bmpintro.html>).

If you have any other questions or require further information please feel free to contact Rob Stewart, Ecosystems Biologist, at 250-490-8253.

Comments from the Water Allocation Section of MFLNRO:

If there is any work in and about a stream below the high water mark of any creeks in the area, the proponent will be required to submit an application for approval under Section 9 of the Water Act, to Front Counter BC, and to obtain approval prior to undertaking works in and about this stream. The proponent may download an application form from the website: [www.frontcounterbc.gov.bc.ca](http://www.frontcounterbc.gov.bc.ca)

MAY 13, 2011  
CC - DIR T. CHAPMAN, DIR 'E' (VIA EMAIL)  
- BINDERS (2)  
- APPLICANT/AGENT (VIA EMAIL)



There are water licences, located downstream of the proposed work therefore extra care must be taken to ensure no siltation or disturbances occur. Rights of all licences under the Water Act need to be protected. Please obtain a list of affected licences along with other relevant information regarding the Water Allocation Section on [www.env.gov.bc.ca/wsd](http://www.env.gov.bc.ca/wsd)

This area may be subject to flooding and erosion. Please contact your local government agency for their requirements.

Development of the property should be consistent with provincial "Flood Hazard Area Land Use Management Guidelines". A copy of the guidelines is available on website: [www.env.gov.bc.ca/wsd/public\\_safety/flood/pdgs\\_word/guidelines.pdf](http://www.env.gov.bc.ca/wsd/public_safety/flood/pdgs_word/guidelines.pdf)

If you have any questions regarding comments from Water Stewardship Division, please call Susan Waldo, Water Management Officer, in Penticton at (250) 490-2223 or email [Susan.Waldo@gov.bc.ca](mailto:Susan.Waldo@gov.bc.ca)

Comments from the Environmental Protection Division of MOE:

Minimal information was provided regarding the disposal of domestic waste water. It is not clear if domestic wastewater disposal will occur by an individual onsite septic disposal system for each proposed lot, or through a treatment plant for all lots. The applicant should be advised that onsite disposal system (s) with a maximum flow of less than 22.7 m<sup>3</sup>/day fall under the jurisdiction of IHA. For wastewater treatment systems with a maximum flow of 22.7 m<sup>3</sup>/day, the disposal will likely require registration and compliance with the Municipal Sewage Regulation. For more information the proponent should consult regional Environmental Protection office in Penticton at 250-490-8200 for further information.

Comments from the Planning Section of MOE:

The proposed bylaw involves private lots that are within 500 metres of a recommended (but not yet formally established) Goal 2 Provincial protected area- Naramata Creek, which is intended to protect an important wildlife connectivity corridor and riparian area.

A strong stewardship ethic on private lands will be increasingly needed in the future to aid in maintaining important habitat and conservation values in the Okanagan. In short, we cannot rely solely on protected areas to maintain healthy populations and intact natural landscape features. Therefore, it is imperative that private land owners play an essential role in minimizing their ecological footprint in existing/proposed development projects. The proposed conservation area identified in the referral (i.e., part of Lot 1) is a positive aspect of the rezoning; however, it also appears that the proposed CA zoning parcel contains two separate utility rights of way (natural gas/hydro). Utility rights of way do not always make the best wildlife corridors as their use is often shared with those operating/maintaining the infrastructure as well as public access along road ways that often run in parallel with the ROW's.



As the OCP area falls within the planning context of the Okanagan Shuswap Land and Resource Management Plan (2001) please ensure that amendments to the OCP, and any future land use decisions, follows the recommendations of the OSLRMP (2001), specifically the sections pertaining to Community and Crown Interface Resource Management Zones (section CCI 4-1 of the OSLRMP and mapped out on page CCI 4-9 of the LRMP document).

An excerpt from the LRMP documents states:

*The boundary between Crown and private land reflects an administrative and jurisdictional division of the landscape that rarely corresponds to natural boundaries. However, ecosystems, watersheds, drainage patterns, road and utility corridors, recreational trails and viewscapes transcend these administrative boundaries. As is becoming increasingly evident in environmental management, everything is connected to everything else. While the mandate of the LRMP does not extend beyond Crown land, the decisions made with regard to land and resource use certainly do. Both the rural and urban communities, and their associated land and economic development processes, will be affected by the activities on the surrounding Crown land. The responsibility for sustainable development has to be reflected through all levels of governance.*

The full document can be located at this link  
<http://ilmbwww.gov.bc.ca/slrp/lrmp/kamloops/okanagan/index.html>.

For further information on the comments provided by Planning please contact Keith Baric, Planning Section Head, at 250-490-8260.

It is the proponent's responsibility to ensure their activities are in compliance with all relevant legislation.

Yours truly,

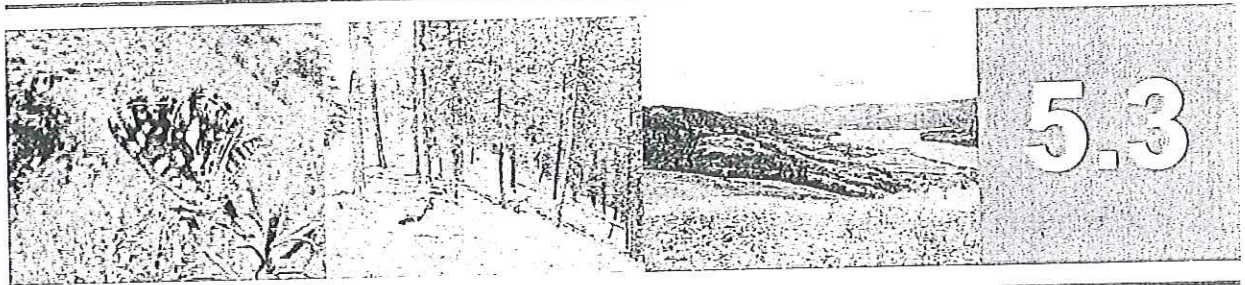


Keith Baric  
Planning Section Head  
For the Referral Committee

RS.GH/SW/KB/cl



# Develop with Care



Environmental Guidelines for Urban and Rural Land Development in British Columbia  
March 2006

## Section Five

### REGIONAL INFORMATION PACKAGES: OKANAGAN REGION

#### 5.3 Okanagan Region

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## Ministry of Environment Regions

This section of *Develop with Care* offers information on issues and species of concern that are unique to each region. This section is not a stand-alone guide to environmentally sensitive development in each region—reference to other sections of this document will be essential for a full understanding of the recommended environmental guidelines.

Figure 5.3-1: Ministry of Environment regions.







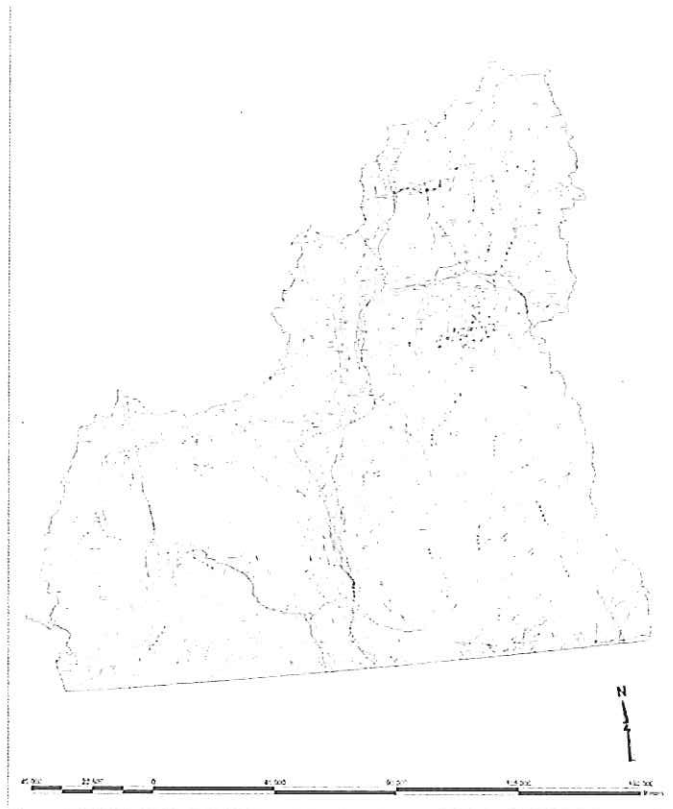
## Okanagan Region



Open pine forests.  
PHOTO: SUSAN LATMER

The Okanagan Basin in British Columbia's southern interior (Figure 5.3-2) represents the northernmost extension of the western Great Basin of North America. Low annual precipitation, hot summers, and mild winters create a variety of semi-arid habitats. The dry grasslands and open pine forests of the Okanagan act as a vital landscape corridor between the shrub-steppe habitats of the Columbia Basin in Washington and Oregon and the grasslands of the Thompson and Nicola valleys to the north and west.

Figure 5.3-2: Okanagan Region.



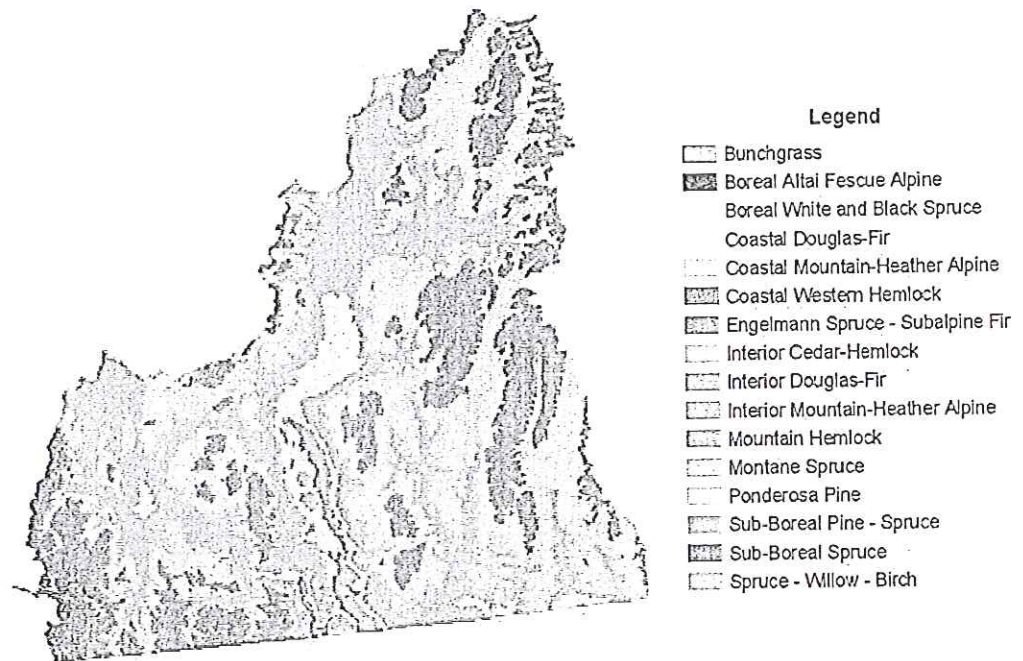
### 5.3.1 REGIONAL FEATURES

The Okanagan Region contains nearly 120,000 ha of grassland distributed over the Okanagan, Kettle, and Similkameen valleys (Figure 5.3-2). These valleys are contained within the Southern Okanagan Basin, Northern Okanagan Basin, Southern Okanagan Highland, Northern Okanagan Highland, and Okanagan Range ecosections. Extending north from the Columbia Plateau in Washington State, the Okanagan Basin runs north and south to the height of land north of Armstrong that separates the Columbia and Fraser River drainages. The Okanagan Basin is one of the



most striking physiographic features in the region and contains the major lakes including Osoyoos, Vaseux, Skaha, Okanagan, Wood, Kalamalka, and Swan Lakes.

Figure 5.3-3: Biogeoclimatic zones of the Okanagan Region.



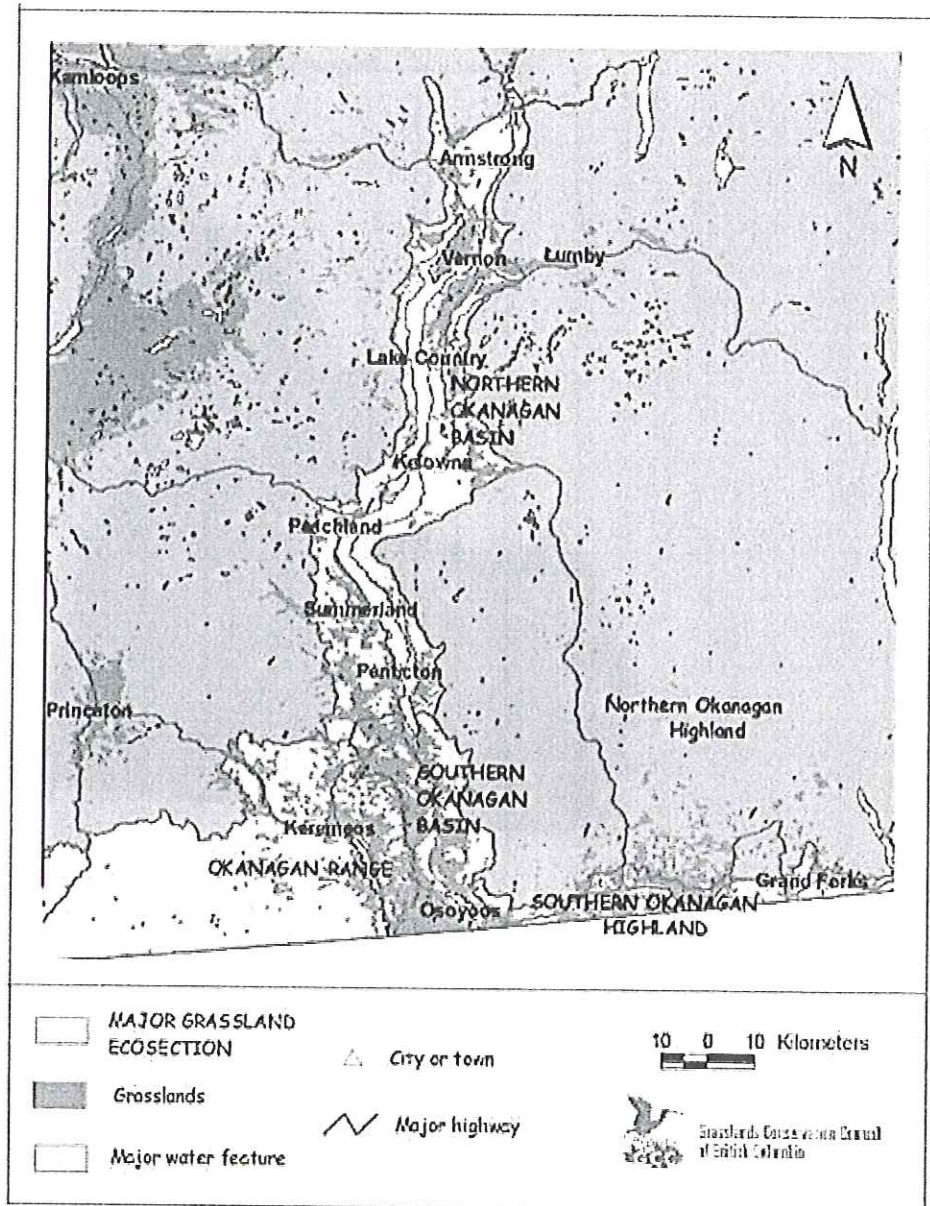
### 5.3.1.1 Biodiversity

The Okanagan supports more species of plants and animals than most other areas of British Columbia and the rest of Canada. The South Okanagan and Similkameen areas of this region have long been recognized as places which have a diversity of habitats and unique species, some of which are found nowhere else in Canada. The Okanagan is now one of the four most endangered ecosystems in our country. The unique characteristics of this ecosystem are centred on the low-elevation grasslands and dry forests—habitats that are most threatened by agricultural and urban developments.

Many species reach their southern or northern range limits in the Okanagan. Populations at the end of their species' ranges are usually genetically diverse. This genetic diversity is very important to the overall health of species' populations, and is critical to their survival in times of environmental change; it is also an integral part of the biodiversity of the Okanagan Region.



Figure 5.3-4: Okanagan grasslands. (Source: BC Grasslands Mapping Project 2004)



The South Okanagan, in particular, has been identified as a biodiversity hotspot. For example, about 190 species of birds breed in the South Okanagan. Additionally, the ranges of many of these species extend into the central and northern parts of the Okanagan Basin.

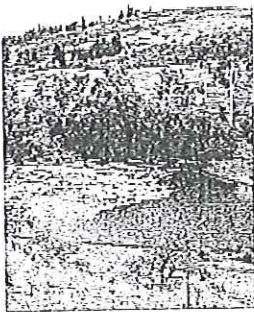
Rapid urbanization, however, has also turned the Okanagan into one of the most endangered regions of the country. The reduction and fragmentation of habitat due to housing, agriculture, and other human-related developments has resulted in a concentration of species at risk: 23 species of plants and animals currently listed as nationally Threatened,



Endangered, or of Special Concern, and one-third of provincially red-listed species, make their homes here. Over half of these depend on grassland and shrub-steppe habitats, which are among the most dramatically altered habitats in the region. In recent years, the central and northern areas of the valley have experienced tremendous population growth.

### 5.3.1.2 Water

Water in the Okanagan Basin is a limited resource that is already heavily allocated to agricultural use, the domestic water supply, and the maintenance of minimum stream flows for fisheries and other aquatic environment needs. Increasing water demands due to population growth and potential changes in water supply and demand associated with predicted climate change will likely result in further competition for water resources within the region. Communities that rely on reservoirs or streams are already experiencing shortages in drought years, and minimum stream flows are often below conservation needs.



Okanagan wetland.  
PHOTO: SUSAN LATIMER

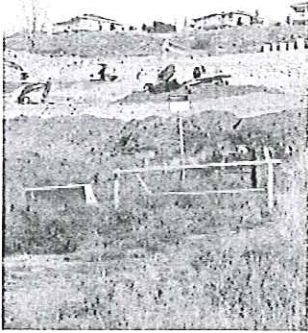
Reduced stream flows due to increasing water removal result in disrupted ecosystem functions and threaten the biodiversity of the Okanagan Region. Changes in seasonal water flow patterns due to such things as increased impervious surfaces and traditional stormwater systems can also contribute to water loss problems by causing reduced low flows and earlier peak flows. Additionally, modification of wetlands can have significant effects on flow regimes, and large withdrawals of groundwater for irrigation and human consumption can cause losses of wetlands and changes in stream flows and lake levels. Ground water contribution to stream flow can be an important factor in regulating stream temperatures.

Water loss and reduced stream flows combined with an increase in pollutants (e.g., non-point and/or permitted discharges) act together to reduce water quality. Similarly, reduced water flows and a loss of shade cause increased water temperatures.

Balancing in-stream water needs (e.g., for fish, waterfowl, and other wildlife) and out-of-stream uses (e.g., domestic use and irrigation) will likely become increasingly difficult given predicted climate change scenarios such as future summer water shortages in the future. Moving towards more sustainable water management within the region will require proactive planning and management by all parties involved with water management and stewardship.



### 5.3.2 CONCERNS RELATED TO DEVELOPMENT



Loss of grasslands to development.  
PHOTO: SUSAN LATIMER

Urban and industrial development in the Okanagan has led to the disappearance of roughly 13,500 ha of the region's grasslands, with over half of this loss occurring around towns and cities in the Northern Okanagan Basin. The municipalities of Peachland, Kelowna, and Vernon, in particular, have experienced a tremendous loss of grasslands. There are also large losses around other Okanagan cities and towns. Summerland, Penticton, Okanagan Falls, Osoyoos, and Grand Forks all had historical areas of native grassland that are now under pavement. Some towns, such as Armstrong, Keremeos, and Oliver, have lost over 95% of their historical grasslands. Loss of grasslands in the Okanagan to roads and railways is also believed to be significant.

As the population of the Okanagan Region continues to grow, native grasslands will continue to be lost to subdivision and urban sprawl. Both grasslands within municipalities and outside of the Agricultural Land Reserve (ALR) may be subject to development. With the market value of land skyrocketing, the number of ranching operations is decreasing while the number of intensive agricultural operations, residential and resort communities, golf courses, and commercial developments is increasing.<sup>1</sup> Private land stewardship may be critical to the preservation of species and viable habitats within the region. This is particularly true in lower elevation areas (Southern and Northern Okanagan Basins) where only a small portion of grasslands habitats are located within Crown or protected areas.

#### PRESSURES FROM URBAN GROWTH AND DEVELOPMENT

There are many pressures on ecosystems that are directly related to urban and rural population expansion in the region:

- ✦ **Population growth:** Projections of population growth for the period from 2001 to 2031 show marked population increases within the Okanagan Region with most occurring in the Okanagan Basin. Populations are predicted to increase by about 25% in the South Okanagan/Similkameen, 60% in the Central Okanagan, and 35% in the North Okanagan. This will dramatically increase pressures on remaining ecosystems and species at risk within the valley.
- ✦ **Agricultural conversion:** Conversion of grasslands and partially modified grazing land to more intensive agricultural operations and hobby farms is resulting in a loss of grassland habitats.
- ✦ **Recreation and resort developments:** Resort development is increasing in the Okanagan Basin. Much of this includes

More than half (31 of 57) of the red- and blue-listed species in the South Okanagan and Lower Similkameen are associated with grasslands. Twelve of 35 rare plant communities are also associated with grasslands. Many insect species that are unique to the Okanagan are grassland specialists. All of the vertebrate species that have disappeared from this area in the last century were grassland species: pigmy short-horned lizard, white-tailed jackrabbit, greater sage-grouse, sharp-tailed grouse, and burrowing owl.

<sup>1</sup> B.C. Grasslands Mapping Project 2004

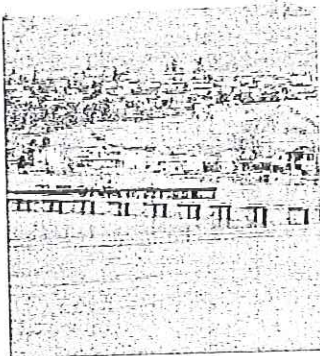


redevelopment of foreshore areas in both urban and rural settings; however, in recent years, the number of satellite developments have also increased and created impacts on foreshore, grassland, and dry forest areas. These developments often include such things as marinas, beaches, golf course, wineries, and/or small town centres. Additionally, many resort developments promote recreational opportunities such as hiking and mountain biking which can extend the footprint of the development into ecologically significance areas.

These pressures produce a number of impacts on shoreline areas, terrestrial ecosystems, water use, and wetlands.

#### SHORELINE DEVELOPMENT

Much of the urban and recreational development in the Okanagan is centered around large lakes and rivers. Impacts include



Shoreline development.  
PHOTO: SUSAN LATIMER

- ◄ loss of riparian vegetation
- ◄ habitat loss, water quality impacts, and changes in longshore drift and sedimentation patterns due to foreshore development of docks, boat launches, and marinas
- ◄ shoreline erosion from wave action
- ◄ modification of shoreline habitats and changes in longshore drift and sedimentation and erosion patterns due to unauthorized infills and lakeshore stabilization
- ◄ cumulative effects on shore spawning and riparian habitats from the development and maintenance of water intakes for domestic and irrigation systems
- ◄ trampling of sensitive habitats and spread of noxious weeds due to recreational access to relatively undisturbed and undeveloped shoreline areas
- ◄ disturbance of waterfowl during wintering, nesting, and breeding seasons
- ◄ cumulative effects of development activities.

Guidelines for shoreline developments are provided in Section 4.

#### TERRESTRIAL DEVELOPMENT

Many of the Okanagan's species at risk are found in low-elevation grasslands and associated habitats (e.g., wetlands and old-growth forests). Most of these habitats are located on private land and outside of the Agricultural Land Reserve. Threats to species at risk include

- ◄ the conversion of grasslands to agricultural crop fields (e.g., wineries)
- ◄ conversion of grasslands to urban-style resort development
- ◄ fragmentation of the landscape due to roads and development





**Figure 5.3-5 : Land status of Okanagan grasslands by ecozone.**  
(Source: B.C. Grasslands Mapping Project 2004)

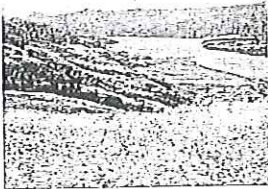
	Southern Okanagan Basin		Northern Okanagan Basin		Southern Okanagan Highland		Okanagan Range		Northern Okanagan Highland	
	grassland (ha)	% of ecosec total	grassland (ha)	% of ecosec total	grassland (ha)	% of ecosec total	grassland (ha)	% of ecosec total	grassland (ha)	% of ecosec total
Provincial Crown (not in protected area)	5035	15.1%	6242	15.7%	2277	18.1%	8747	42.2%	5730	56.2%
Provincial Crown protected area	4486	13.4%	1037	2.6%	66	0.5%	2958	14.3%	267	2.6%
Private	13,536	40.5%	23,035	57.9%	10,199	81.2%	5276	25.5%	4191	41.1%
Private acquired land	1863	5.6%	27	0.1%	0	0.0%	46	0.2%	0	0.0%
Indian Reserve (federal)	8497	25.4%	9417	23.7%	11	0.1%	3700	17.9%	0	0.0%
<b>TOTAL</b>	<b>33,416</b>	<b>100.0%</b>	<b>39,759</b>	<b>100.0%</b>	<b>12,553</b>	<b>100.0%</b>	<b>20,727</b>	<b>100.0%</b>	<b>10,188</b>	<b>100.0%</b>

- ✦ reduced fire frequency resulting in forest ingrowth, and urban and recreational development
- ✦ increasing damage from recreational use (e.g., all-terrain vehicles, mountain bikes, human access)
- ✦ increasing ground disturbance and spread of invasive weeds
- ✦ predation by pets
- ✦ modification of grassland wetlands
- ✦ increasing numbers of 'problem' wildlife and wildlife conflicts
- ✦ cumulative effects of development activities

Careful planning is essential to avoid such impacts while retaining the values that tourism brings. Section 2 provides ideas on how to minimize the impacts of developments on natural ecosystems. Planning to avoid such impacts by providing zoning and restrictions in sensitive areas is discussed in Section 4.



## WATER USE



Okanagan Lake from  
Bella Vista.  
PHOTO: SUSAN LATIMER

Impacts on streams, lakes, and water quality and quantity are as a result of upland and near-shore development, climate change, and recreational activities. These impact include

- non-point pollution of lakes and streams from urban storm runoff and agricultural runoff
- altered stream hydrology due to increased impervious surface areas associated with urban development
- over-licensing of water sources, which can result in a lack of water during drought periods, increased stream temperatures, and/or periods of low or no stream flow
- reduced viability of habitats for fish, amphibians, and other aquatic species due to changes in water quality and quantity
- destruction of natural stream processes when streams are aggraded, degraded, eroded, relocated, dammed, channelled, culverted, and/or rip-rapped
- storage and diversion of water
- damage to and destruction of riparian vegetation, which can disrupt natural biological processes and drive water temperatures into the lethal range
- removal or scouring of spawning gravel
- excessive siltation due to upstream erosion
- cumulative effects of development activities

Management systems that reduce stormwater discharge are presented in Section 2 and Section 3. Section 3 also presents guidelines for addressing waste management issues associated with increased developments and provides appropriate solutions to groundwater and contamination problems. The Okanagan Lake Action Plan provides specific information on the fish of Okanagan Lake, a central feature of this region.

Water availability is a critical issue in the Okanagan Region. While many people like having green lawns, the use of water for lawn watering in this dry habitat may limit the amount that is available for fish and wildlife. Naturescaping (using locally adapted native plants for landscaping) can provide an effective solution to limited water supplies. The handbook Dealing with Drought and the Drought Information website provide information on dealing with drought.



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**WETLAND LOSS AND MODIFICATION**

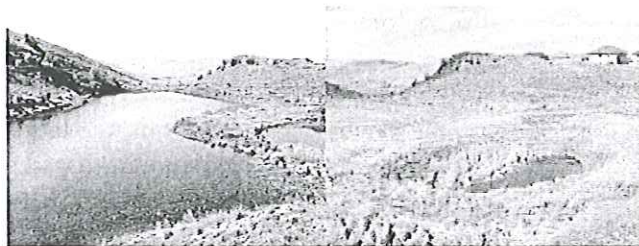
Wetlands are a vital component of healthy grassland and dry forest communities of the Okanagan Region. Many support rare and endangered species. While some wetlands are permanent and easily recognizable, others are more temporary. These are called vernal pools. They are often not considered to be important landscape features; however, they provide habitats for species that are adapted to conditions where water is a temporary feature (e.g., Great Basin spadefoot), and they provide seasonal habitats for migratory birds. These ponds may fill only in years of heavy precipitation; consequently, they may not be visible during drought years.

**5.3.3 ECOSYSTEMS AT RISK**

The Okanagan Region contains Canada's only pocket desert. The southern part of the region, along the border with the United States, lies in the rain-shadow of the Coast Mountains and receives relatively little precipitation. The northern part of the region is influenced by the Columbia Mountains to the east and is consequently significantly wetter. Transitional areas are found between these two.

Several habitats in the region are threatened, especially those at low elevations. Habitats at risk include

- ♦ riparian ecosystems (e.g., cottonwood, water birch)
- ♦ grasslands (e.g., antelope-brush, sagebrush)
- ♦ low-elevation coniferous forest (e.g., ponderosa pine, larch, old-growth Douglas-fir)
- ♦ wetlands, including vernal pools, lakes, and streams
- ♦ rock outcrops, talus, and cliffs



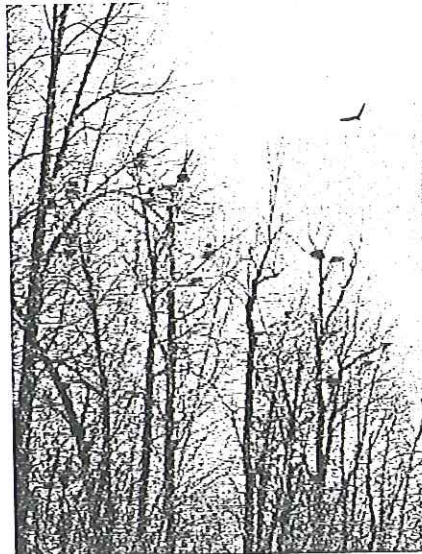
Vernal pools showing how water levels can vary from year to year (pictures taken in same month but in different years). PHOTOS: SUSAN LATIMER



The South Okanagan-Similkameen Conservation Program was established as a means of focusing conservation efforts on the low-elevation areas of the South Okanagan and Similkameen Valleys, and to maintain the ecosystems and the great variety of plant and animal species that exist within it.

#### 5.3.4 SPECIES AT RISK

Many species in the Okanagan Region are at risk because their habitat is threatened by development. Butterflies such as the Behr's hairstreak and the Mormon metalmark, birds such as the white-headed woodpecker and the yellow-breasted chat, and many plants (dwarf woolly-heads, scarlet ammaninia, slender collomia, small-flowered lipocarpha, toothcup meadow-foam), animals (badger and pallid bat) and fish (speckled dace) are either Endangered or Threatened due to urban and rural developments or agricultural expansion on the benches and valley-bottom habitat of these species. Details on these and other rare species can be found through the B.C. Species and Ecosystem Explorer or South Okanagan Similkameen Conservation Program list. Note, however, that a lack of data on the Species Explorer does not confirm the absence of species at risk the availability of data is variable throughout the Okanagan Region. Tables 5.3-1 to 5.3-4 identify vertebrates at risk in various habitat types<sup>2</sup> (note that these tables do not include plants or invertebrate species at risk).



Great blue herons returning to nest.  
PHOTO: SUSAN LATIMER

<sup>2</sup> For updated species lists, check the Ministry's regional website  
<http://www.env.gov.bc.ca/okf/>



**Table 5.3-1: Wildlife at risk in grasslands**

Red List	Blue List
Brewer's sparrow	Gopher snake
Burrowing owl	Western rattlesnake
Ferruginous hawk	Racer
Grasshopper sparrow	Lark sparrow
Prairie falcon	Long-billed curlew
Sage thrasher	Swainson's hawk
Lark sparrow	California bighorn sheep
Pallid bat	Great Basin pocket mouse
Badger	Nuttall's cottontail
Western harvest mouse	

**Table 5.3-2: Wildlife at risk for which riparian and wetland habitat is critical**

Red List	Blue List
Tiger salamander	Great Basin spadefoot
Sandhill crane	Painted turtle
Yellow-breasted chat	American bittern
Western screech-owl	Great blue heron
Western red bat	Bobolink

**Table 5.3-3: Wildlife at risk for which forest habitat is critical**

Red List	Blue List
White-headed woodpecker	Rubber boa
	Gopher snake
	Gray flycatcher
	Townsend's big-eared bat
	California bighorn sheep
	Flammulated owl
	Lewis's woodpecker

**Table 5.3-4: Wildlife at risk for which rugged terrain habitat is critical**

Red List	Blue List
Night snake	Gopher snake
Ferruginous hawk	Western rattlesnake
Peregrine falcon	Racer
Prairie falcon	Canyon wren
Pallid bat	White-throated swift
	Small-footed myotis
	Spotted bat
	California bighorn sheep





### AMPHIBIANS AND REPTILES

The Okanagan Region supports a great diversity of reptile and amphibian species, several of which are rare and unique. Currently, there are seven native and one introduced amphibian species (frogs, toads, and salamanders) and ten native reptile species (turtles, lizards, and snakes) found in the region. Additionally, the northern distribution limit of many species found south of the U.S. border occurs in the Okanagan Region.

Amphibians and reptiles live in valley bottom areas which attract development. Unless measures are taken to preserve the specialized habitats of these animals, their numbers will continue to decline.

Prime development sites in the Okanagan, however, often overlap with important amphibian and reptile habitats. Many native species of amphibians and reptiles are adversely affected by development-related habitat loss, and some have declined to the point that they are now species at risk. The northern leopard frog and the pigmy short-horned lizard have been extirpated in the region. The main threats to reptiles and amphibians are habitat loss and alteration, and draining of wetlands. The dry grasslands and open pine forests used by some species are among the most threatened ecosystems in British Columbia. The rapidly expanding wine industry, agriculture, recreational developments, and urban development are the main threats to natural habitats. Many wetlands have been drained or filled in for urban development, roads, or agricultural purposes. Where waterbodies have been retained, the riparian zones have often been severely degraded, which affects the habitat needs of many species.

For more information on best management practices to protect amphibians and reptiles, see *Best Management Practices for Amphibians and Reptiles in Urban and Rural Environments in British Columbia*.

### FISH SPECIES

The following rare and endangered species are known to inhabit the Okanagan Region<sup>3</sup>:

- † speckled dace
- † Umatilla dace
- † shorthead sculpin
- † mottled sculpin
- † torrent sculpin
- † chizelmouth
- † mountain sucker

<sup>3</sup> Cannings and Ptolemy 1998



### 5.3.5 REGIONALLY SIGNIFICANT SPECIES

#### FISH

The Okanagan Region includes four major drainages—the Okanagan, Similkameen, Kettle/Boundary, and Shuswap. Differences in biogeoclimatic conditions, fish habitats, land ownership, and types of environmental impacts exist among these drainages as well as between upper- and lower-elevation areas in the region.

Headwater areas within the region include a network of small, high-gradient creeks. Flushing rates are high, water levels change rapidly, nutrients are limited, and annual mean temperatures are low. These conditions support slow-growing stream resident (fluvial) rainbow trout and few, if any, other native fish species. An exception is the few high-elevation areas in the Similkameen and Shuswap Basins which support cutthroat trout populations that were introduced years ago. Many of the upper- elevation streams are relatively unspoiled and need protection. Most of the land in the higher areas is Crown land, and impacts there have occurred from forest harvesting and other practices.

In the valley bottoms, the networks of small streams combine to form major rivers like the Shuswap, Okanagan, Tulameen, Similkameen, Kettle, and Granby. These rivers are warmer, more fertile, and more hydraulically diverse than small streams. In the Shuswap and Okanagan Basins, chains of large lakes provide even warmer and more nutrient-rich environments. The major lakes and rivers support

- ♦ populations of rainbow trout which migrate between lakes and rivers (adfluvial) or out to sea (anadromous steelhead);
- ♦ other salmonids such as kokanee, bull trout, salmon, and mountain whitefish; and
- ♦ other indigenous wild fish such as suckers, dace, chub, sculpins, shiners, and pikeminnow.

Some of these species are listed as rare, endangered, or vulnerable. Others, such as the bull trout, sockeye salmon, and kokanee, have been identified as ‘seriously impacted’ or ‘regionally significant’ and have become focal species for protection and recovery efforts.

Bull trout, many populations of which are genetically distinct from populations in the Kootenays, are an important part of the fish-related tourism in the Okanagan Region. Additionally, the bull trout has a very limited distribution in the Okanagan Region. It has been blue-listed by the B.C. Conservation Data Centre and is identified as a species at risk in the Forest Practices Code.





California bighorn sheep.  
PHOTO: LORA NIELD

The Okanagan River also supports some of the last remaining spawning habitat for sockeye and spring salmon in the Columbia River system. For more information, see the Okanagan Lake Action Plan.

#### MAMMALS

Large mammals such as bighorn sheep, deer, elk, and mountain goats as well as their predators are locally important. Section 4 discusses best management practices that can be applied to ensure these species continue to be part of the Okanagan Region.

Most at risk from urban and rural development are species such as the California bighorn sheep, which are sensitive to human disturbance. They require grasslands near a safe retreat from predators (e.g., cliffs) and wintering habitat in the valley bottoms. This species is now blue-listed provincially because of its sensitivity to human activities and changes in habitat conditions.

#### 5.3.6 INVASIVE SPECIES

Ground disturbance associated with land development activities, recreational activities, and forest fires all increase the potential for establishment of alien invasive species.

Alien species are the second greatest threat to biodiversity after habitat loss and degradation. When alien species move in, native species' populations often decrease or may even become extirpated. The total number of plant and animal species may remain the same in an area where alien species have replaced native species, but the integrity and vitality of the natural ecosystem will be altered. For example, alien invasive species can alter forest fire cycles, nutrient cycling, and water flows. They can also compete with, and transmit diseases to, native species. For more information on alien species, see the Weeds BC and Alien Species websites.

For information on preventing the spread of Eurasian milfoil, see <http://www.env.gov.bc.ca/wat/wq/brochures/milfoil.html>





### 5.3.7 USEFUL SOURCES

#### GENERAL INFORMATION

Ministry of Environment Okanagan Regional Office

102 Industrial Place

Penticton B.C. V2A 7C8

<http://www.env.gov.bc.ca/okr/> or <http://wlapwww.gov.bc.ca/okr/><sup>4</sup>

#### REGIONAL RESOURCES

Access to many sources of inventory information can be found through the EcoCat (Ecosystems Report Catalogue) website <http://srmapps.gov.bc.ca/apps/acat/>

Maps and inventory

- ✦ The Ministry's regional ecosystems website (<http://www.env.gov.bc.ca/okr/esd/ecosystems.html>) provides an index to mapping that is available in the Okanagan Region.
- ✦ The Ministry's regional wildlife website (<http://www.env.gov.bc.ca/okr/esd/fisheries.html>) provides a listing of wildlife-related materials (including *Habitat Atlas for Wildlife at Risk: South Okanagan and Lower Similkameen*).
- ✦ The Ministry's regional fish website (<http://www.env.gov.bc.ca/okr/esd/fisheries.html>) presents regional fisheries information.
- ✦ The Ministry's regional environmental protection website (<http://www.env.gov.bc.ca/sir/pp/index.html>) provides access to regional flood protection information.
- ✦ *Habitat Atlas for Wildlife at Risk: South Okanagan and Lower Similkameen*  
<http://www.env.gov.bc.ca/sir/fvh/wld/atlas/index.html>
- ✦ Aquifers in British Columbia:
  - ✦ Query the Aquifer Database  
<http://www.env.gov.bc.ca/wat/aquifers/query/aquifers.htm>
  - ✦ Aquifers and Water Wells in BC
  - ✦ Guide to Using the BC Aquifer Classification Maps for the Protection and Management of Ground Water  
[http://www.env.gov.bc.ca/wat/aquifers/reports/pdfs/aquifer\\_maps.pdf](http://www.env.gov.bc.ca/wat/aquifers/reports/pdfs/aquifer_maps.pdf)
- ✦ Drought Monitoring [http://www.env.gov.bc.ca/rfc/river\\_forecast/drought\\_monitor.htm](http://www.env.gov.bc.ca/rfc/river_forecast/drought_monitor.htm)
- ✦ Water information [http://www.env.gov.bc.ca/sir/okanagan\\_water/index.html](http://www.env.gov.bc.ca/sir/okanagan_water/index.html)
- ✦ Community Mapping Network <http://www.shim.bc.ca/> (information on Sensitive Habitat Inventory and Mapping [SHIM]; Sensitive Ecosystems Inventory [SEI]; and the North Okanagan home page)

<sup>4</sup> Note: Ministry websites are being updated. If the 'www.env.gov.bc.ca' link does not work, try [wlapwww.gov.bc.ca](http://wlapwww.gov.bc.ca)





Other references:

- Allan Brooks Nature Centre Stewardship Program <http://www.abnc.ca/nature.html>
- Dyer, O. 2001. List of species at risk: South Okanagan-Similkameen Conservation Program study area. Updated to November 2001. Ministry of Environment, Penticton, B.C.
- Grasslands Conservation Council of British Columbia <http://www.bcgrasslands.org/about.htm>
- Okanagan Lake Action Plan website <http://www.env.gov.bc.ca/sir/fwh/fsh/olap/>
- Regional District of the Central Okanagan  
<http://www.regionaldistrict.com/departments/planning/env/default.aspx>
- Royal BC Museum Endangered species in endangered spaces website
- South Okanagan-Similkameen Conservation Program <http://www.soscp.org/>
- Summit Environmental Consultants. 2004. Trepanier landscape unit water management plan final report. Report prepared for Regional District of Central Okanagan and Ministry of Sustainable Resource Management, June 2004.  
[http://www.regionaldistrict.com/docs/planning/Final\\_Report\\_Text.pdf](http://www.regionaldistrict.com/docs/planning/Final_Report_Text.pdf)



**Lauri Feindell**

---

**From:** Collins, Martin J ALC:EX <Martin.Collins@gov.bc.ca>  
**Sent:** May-04-11 3:00 PM  
**To:** Planning  
**Subject:** Bylaws 2458.03, 2011 and 2459.06, 2011

The ALC's interests are unaffected because no ALR is affected.

Regards,

**Martin Collins**  
**Regional Planner**  
**Agricultural Land Commission**  
**604-660-7021**

cc - DRT, C. G. (1) (1) (1)  
Bincle 5/4/11



## Lauri Feindell

---

**From:** Christopher Garrish  
**Sent:** May-20-11 4:15 PM  
**To:** Lauri Feindell  
**Cc:** Gillian Cramm  
**Subject:** FW: Zoning by-law amendment (Arawana Creek)

**From:** Withler, Carl AGRI:EX [mailto:Carl.Withler@gov.bc.ca]  
**Sent:** May-20-11 4:00 PM  
**To:** Christopher Garrish  
**Subject:** Zoning by-law amendment (Arawana Creek)

Hi Chris, I have read and reviewed the above noted Administrative Report and remain committed to my earlier comments about the introduction of residential development into a grazing/farming area. The ministry asks that the principles of Section 3 of the *Trespass Act* be incorporated into any conditions of approval. This fencing off of residential development from agricultural use will help in reducing the conflict between a generally urbanized population and the existing rural residents.

I hope that this, and my previous, response are sufficient for your needs. Should you have questions or concerns please, call me at your convenience at 250-861-7229. Cheers.

Sacred cows make the best hamburger.... (Mark Twain)

**Carl Withler P. Ag.**  
**Resource Stewardship Agrologist**  
**Ministry of Agriculture**  
**Interior Region**

cc - Dir. T. Chapman  
Burrard  
Agent



**Lauri Feindell**

---

**From:** Christopher Garrish  
**Sent:** April-18-11 2:46 PM  
**To:** Lauri Feindell; Gillian Cramm  
**Subject:** FW: Bylaw referral: 2458.03, 2010 and 2459,06, 2010 (Arawana Creek)

**From:** Withler, Carl AGRI:EX [mailto:Carl.Withler@gov.bc.ca]  
**Sent:** April-18-11 2:45 PM  
**To:** Christopher Garrish  
**Cc:** LeMaistre, Jim F AGRI:EX  
**Subject:** Bylaw referral: 2458.03, 2010 and 2459,06, 2010 (Arawana C

NARAN-  
gave cc to  
the Brad &  
Director

Hi Christopher,

I have read and reviewed the above noted bylaw referral and offer the following comment from the Ministry of Agriculture: approval recommended with conditions below.

As this proposal brings residential development into the rural landscape potentially impacting the farming/ranching community in its normal activities a fence should be built around the property in keeping with the principles of the *Trespass Act*, Section 3. See link for reference.

[http://www.bclaws.ca/EPLibraries/bclaws\\_new/document/ID/freeside/00\\_96462\\_01](http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96462_01)

Also, we are of the belief that the reasonable accommodation of the farming community is a due consideration of an approving officer as outlined in Section 86(1)(x) of the *Land Title Act* and fits well with the referral response provided.

I hope that this response is clear enough for you.....should you have questions or concerns please call me at your convenience at 250-861-7229. Cheers.

Sacred cows make the best hamburger.... (Mark Twain)

**Carl Withler P. Ag.**  
**Resource Stewardship Agrologist**  
**Ministry of Agriculture**  
**Central Region**

cc- T.Chapman, director, E } via  
Agent/Applicant Jemail  
Binders (2)



**Lauri Feindell**

---

**Subject:** FW: E06834.000 - Bylaw Referral -

**From:** Skinner, Anne E FLNR:EX [mailto:Anne.Skinner@gov.bc.ca]

**Sent:** April-27-11 3:20 PM

**To:** Lauri Feindell

**Cc:** Dinwoodie, Rob FLNR:EX; Withler, Carl AGRI:EX

**Subject:** RE: E06834.000 - Bylaw Referral -

Hi Lauri, thanks for this referral. The proposed re-zoning of this application should not impact the adjacent Crown grazing licence. An increase in separation between the residential development and the range area could actually be a benefit for the livestock as well as wildlife!

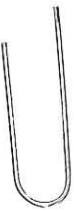
Thanks,

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**Anne Skinner**, Range Agrologist  
Ministry of Forests, Lands & Natural Resource Operations  
Phone: (250) 550-2201 Fax: (250) 549-5485  
Email: [Anne.Skinner@gov.bc.ca](mailto:Anne.Skinner@gov.bc.ca)

CC-DIR:T.CHAPMAN VIA EMAIL  
-BINDERS (2)  
-APPLICANT/AGENT - VIA EMAIL





Agency Referral List

- Agricultural Land Commission (ALC)
- Interior Health Authority (IHA)
- Ministry of Agriculture and Land
- Ministry of Environment
- Pentlcton Indian Band (PIB)
- Integrated Land Management
- Okanagan Nation Alliance (ONA)
- Ministry of Tourism, Culture and Arts (Archaeology Branch)
- Ministry of Transportation and Infrastructure
- School District #67 (Okanagan Skaha)
- Ministry of Forest and Range

**RESPONSE SUMMARY**

**AMENDMENT BYLAW NOS. 2458.03, 2011, & 2459.06, 2011**

- Approval Recommended for Reasons Outlined Below
- Approval Recommended Subject to Conditions Below
- Interests Unaffected by Bylaw
- Approval Not Recommended Due to Reasons Outlined Below

Our File: 13-179-01568

It is recommended that approval be conditional of the subject property and all development there on being serviced by community sanitary sewer and community water systems.

Signature: John C. Beaupré      Signed By: John C. Beaupré  
 Agency: Interior Health Authority      Title: Environmental Health Officer  
 Date: June 13/11

June 15, 2011 cc - J. Chapman, Director (via email)  
Blaine  
Reg. Manager (via email)



**Lauri Feindell**

---

**Subject:** FW: E06834.000 - Bylaw Referral -

**From:** Lake, Cynthia NRO:EX [mailto:Cynthia.R.Lake@gov.bc.ca]

**Sent:** May-10-11 4:12 PM

**To:** Christopher Garrish

**Subject:** RE: E06834.000 - Bylaw Referral -

Hello Chris,

Thank you for the referral regarding 3440 Arawana Road and 3480 Arawana Forestry Road (Naramata Benchlands Properties Ltd.). I checked Provincial records for known archaeological sites and there are none recorded on the subject properties, nor are they located in an area of significant archaeological potential.

Regards,  
Cynthia

**Cynthia Lake** | Archaeological Inventory Officer  
Archaeology Branch | Ministry of Forests, Lands and Natural Resource Operations  
Phone: 250-953-3301  
Visit our website at <http://www.tti.gov.bc.ca/archaeology/>

MAY 10, 2011  
-T. CHAPMAN DR - E  
CC - BINDERS (2)  
-AGENT - VIA EMAIL