



# **Biodiversity Plan**

**Developed for**

**T bar K Ranch  
Chase BC**

**Companion Document to a  
Environmental Farm Plan**

**Funded by  
Agriculture and Agri-Food Canada  
BC Ministry of Environment  
Ducks Unlimited Canada**

**Prepared by  
Pete Spencer  
EFP Planning Advisor**

**March 2010**

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# **T bar K Ranch**

## **1. General Location and Description**

The ranch is located southeast of Chase BC in an area called Turtle Valley. The BC Water Resources Atlas Mapping site shows two watercourses on the property; however, there is no surface water flow in these drainages with the possible exception of spring snow melt. The valley generally drains into Chum Lake, which is about 1.7 km from the subject property. Chum Lake is drained by Chum Creek,, which flows into Little River and subsequently into Little Shuswap Lake and the Thompson River system. There are three springs on the property: Lafferma, Surplice, and Smith Spring, which has been developed into a pond.

The deeded property is about 65 hectares with leased land and Crown grazing making up the rest of the management unit. The ranch is bordered by Crown land on the north and south, and deeded property to the east and west.

There are three main habitat types on the property dictated by slope, soil, and aspect. On the north, the land is steep, rocky, and south facing. The valley bottom is flat with silty loam soils that have lenses of clay and a sand/gravel mix. The south has a gentler slope, with coarser soils than the valley bottom, and is north facing.

The present owners have had possession of the property for less than a year and plan many changes.

## **2. Products Produced**

This is a commercial cow/calf operation which presently has 35 head of mature beef cattle and some horses. Perennial forage is grown and stored as hay, and livestock are pastured on a mix of Crown range and tame pasture. The perennial forage areas are irrigated from Smith Spring pond.

## **3. Habitat Communities**

Of the three main habitat communities found on this property the largest is tame perennial forage. Both the hay field and pastures are mostly mixed grasses with some legumes. The hay fields are used for fall grazing and overwintering. This helps distribute manure economically as opposed to feeding in pens. Extensive rejuvenation of existing forage fields is planned.

The second largest community is a mixed needle leaf forest with some deciduous trees and a north aspect, part of which has been selectively logged for cedar in the past. (see biogeoclimatic zone data, north side of valley)

The third largest community is an area with Douglas-fir, ponderosa pine, shrubs, and native grasses, and a southern aspect. (see biogeoclimatic zone data, south side of valley)

Within this area there are also vertical rock faces with talus slopes, which could be home to the western rattlesnake.

There is a small but significant linear habitat to the north and west of the corral system.

There are three small riparian areas around the springs and pond.

#### **4. Wildlife**

In the short time that the present owners have been on the property, they have identified and photographed a wide variety of wildlife species on the property, including deer, bear, coyotes, Great Blue Heron, and numerous ducks. (see species images)

#### **5. Specific Habitat goals**

##### Riparian

The three riparian zones are limited to the areas around the springs and the developed pond. Since the total area of all three is small, the best option is to exclude livestock from these areas. The areas will be monitored, and any riparian planting and alien species control that is needed will be done.

##### Connectivity

The planting of a shelterbelt starting at the patch of linear habitat north to the public road and then west to the grassland/forested area would provide enhanced connectivity.

Ducks Unlimited Canada has had projects around Chum Lake in the past, but their interest in this property would be limited.

If any conservation groups establish in this area in the future, the ranch owners would be willing to work with them.

##### Water use

The ranch owners are very interested in using irrigation water efficiently by monitoring soil moisture and increasing soil organic content.

### Forested Areas/Forage Production/Weeds

Cross-fencing between forested and perennial forage areas will allow both areas to be managed better with regard to biodiversity. The forested area that is adjacent to the hay fields was selectively logged in the past and is slowly being infested with weeds that have spread due to soil disturbances during the construction of roads, landings, and skid trails. (see Specific Habitat Goals Images) Light, carefully timed grazing, along with seeding of the disturbed areas with grass seed will facilitate weed control, add agricultural value, and protect the regenerating forest.

The ranch owners are interested in using flushing bars on mowers and avoiding nighttime mowing to reduce wildlife mortality.

### Species at Risk

Retaining and enhancing habitat for species at risk and regionally sensitive or threatened species is considered a goal for this ranch. A search of the Conservation Data Centre mapping site has shown that there are no recorded sightings of red- or blue-listed species on this operation, but habitat exists within the land base to support at least three of the species noted on the maps. (see field notes and images)

## Specific Habitat Goals Images



**Multi-species/age logging aftermath  
with some forage and weeds**



**Available forage on roads and landings**

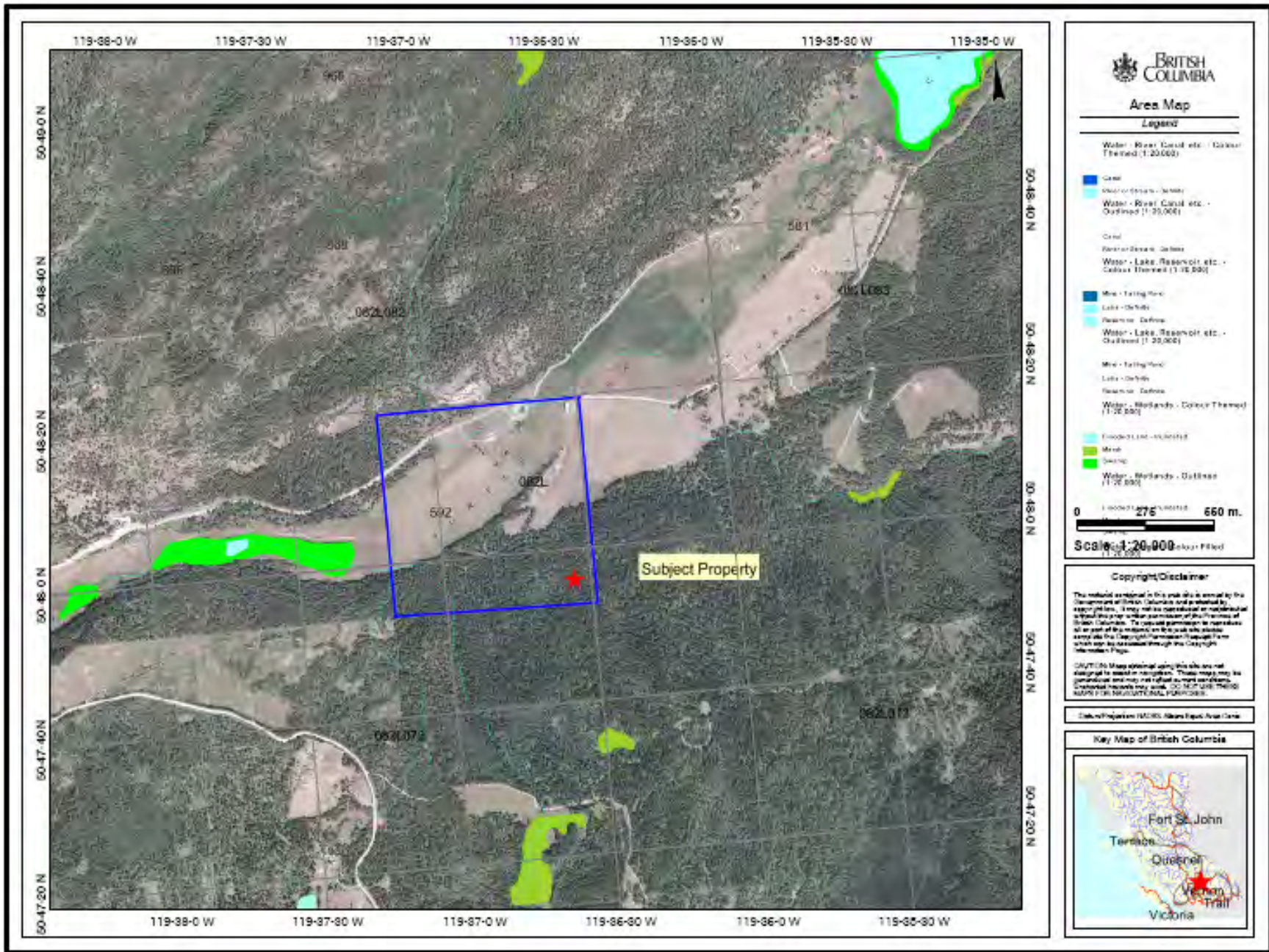


**Mullen, burdock, and Canada thistle, road seeded**

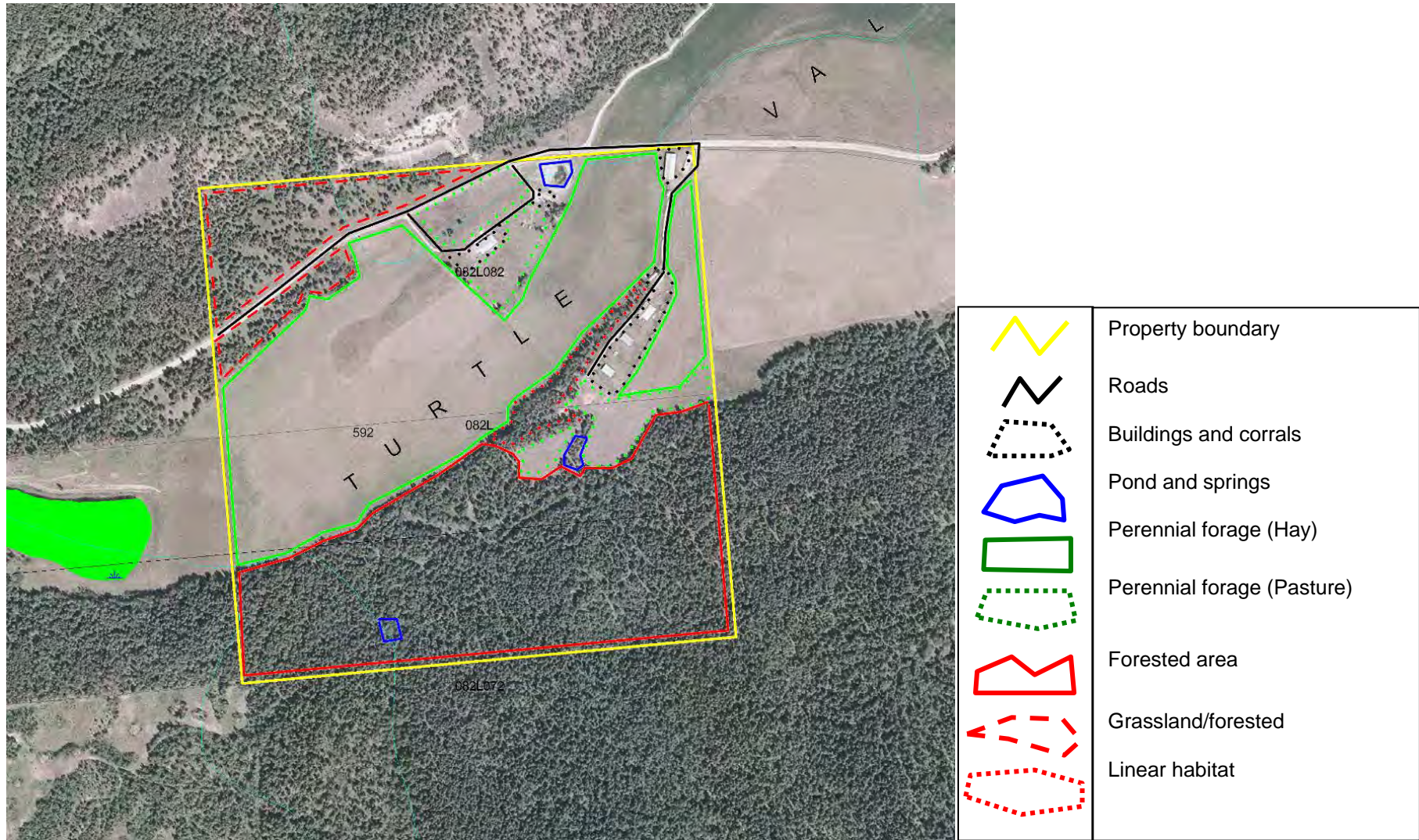


**Landing with mustard and mullen**





# Ranch Map



Ranch Location 119 36' 42" W / 50 48' 17" N, map orientated north, map scale 1- 8,000



# Data Sheet

## Breakdown of map areas

	<b>Hectares</b>	<b>Percentage</b>
Roads	1.5	2.4
Buildings and corrals	2.5	3.9
Pond and springs	.7	1.0
Perennial forage (Hay)	25.6	39.5
Perennial forage (Pasture)	2.5	3.9
Forested area	23.9	36.9
Grassland/forest	6.5	10.0
Linear habitat	<u>1.5</u>	<u>2.4</u>
Total	64.8	100.0

## Species Richness

370 to 940 species (See map)

## Eco-region

Southern Interior/Thompson Okanagan Plateau/Semi-arid Steppe Highland/Dry

## Biogeoclimatic Zone

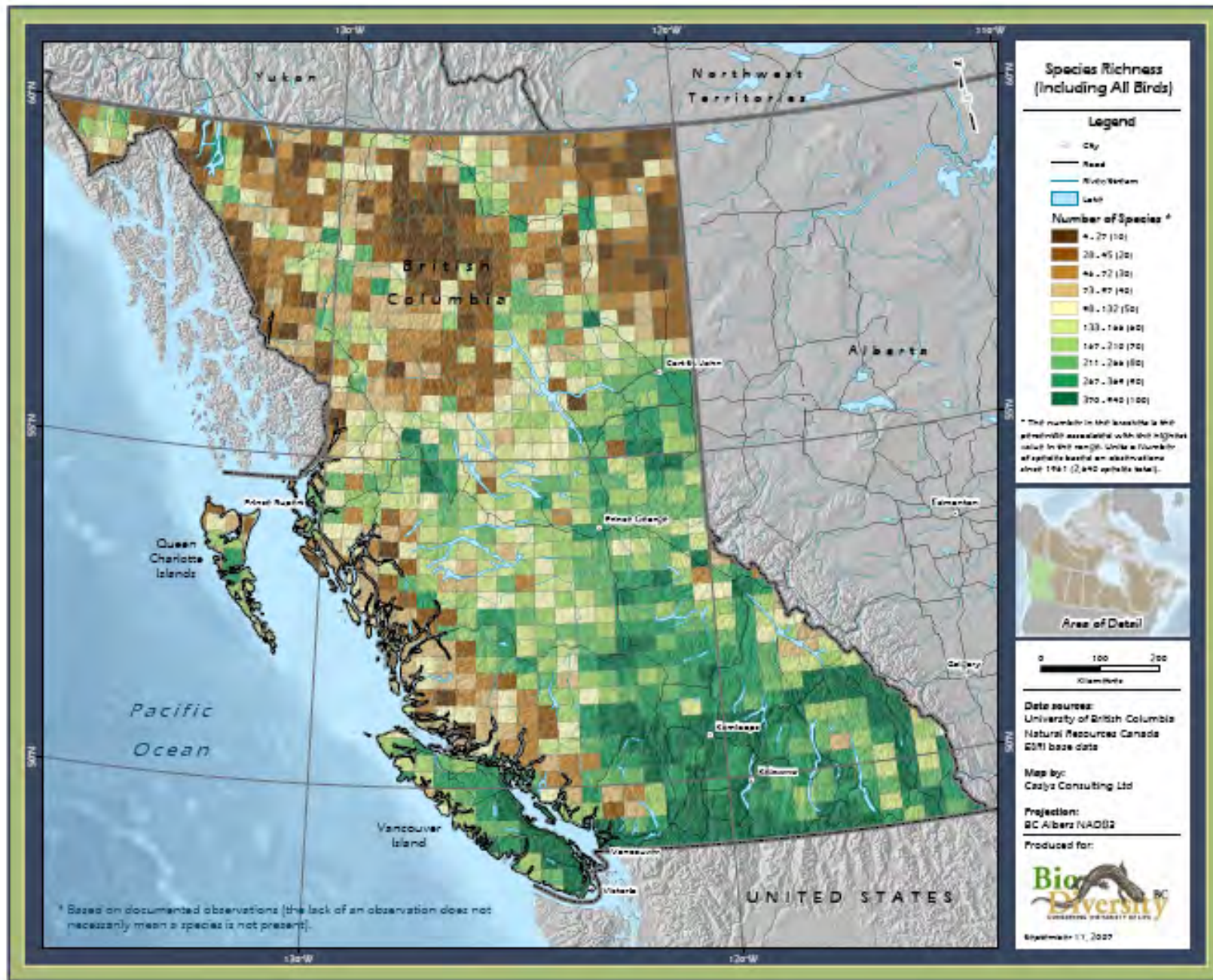
Interior Douglas-fir (see maps and zone data)

## Subzone

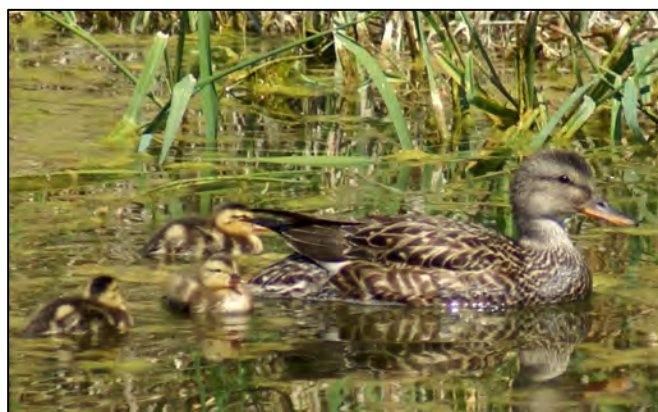
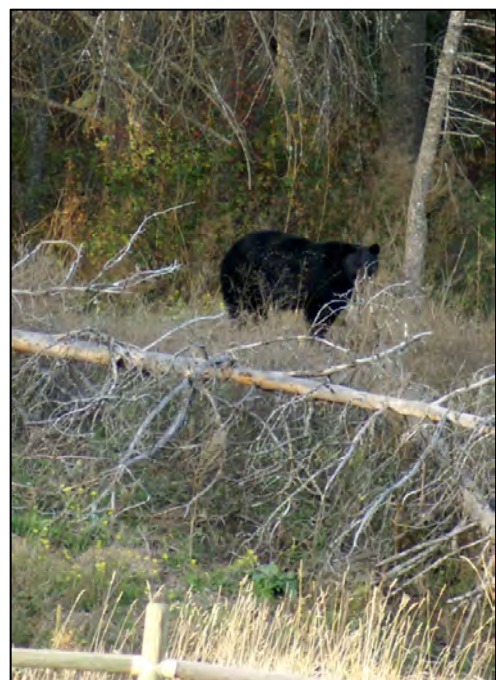
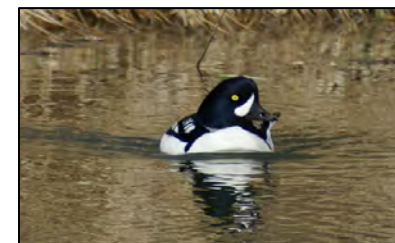
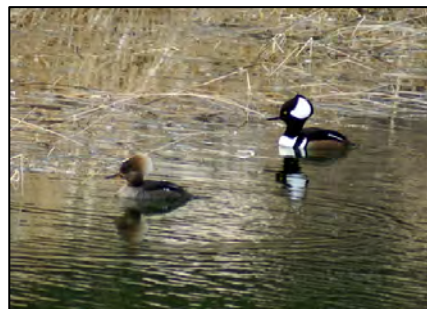
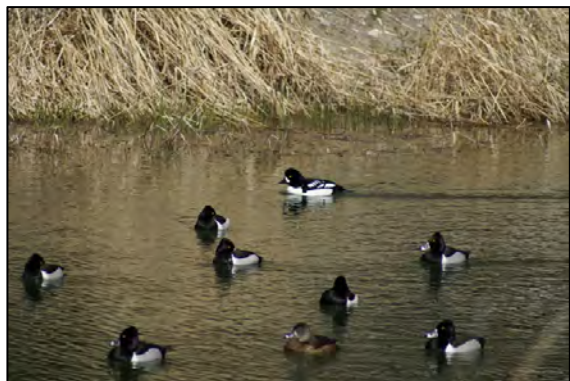
Very Dry Hot/Moist Warm

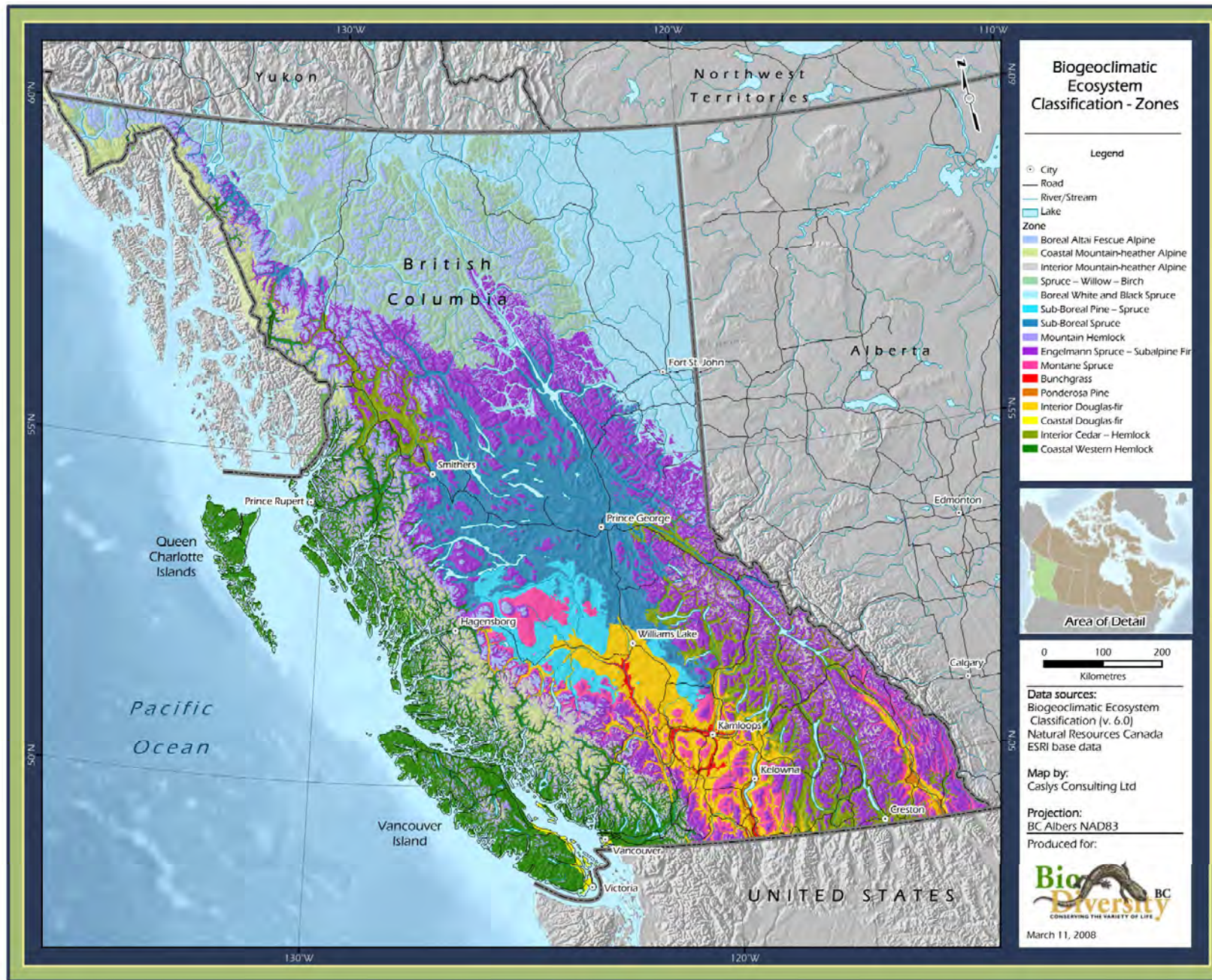
## Variant

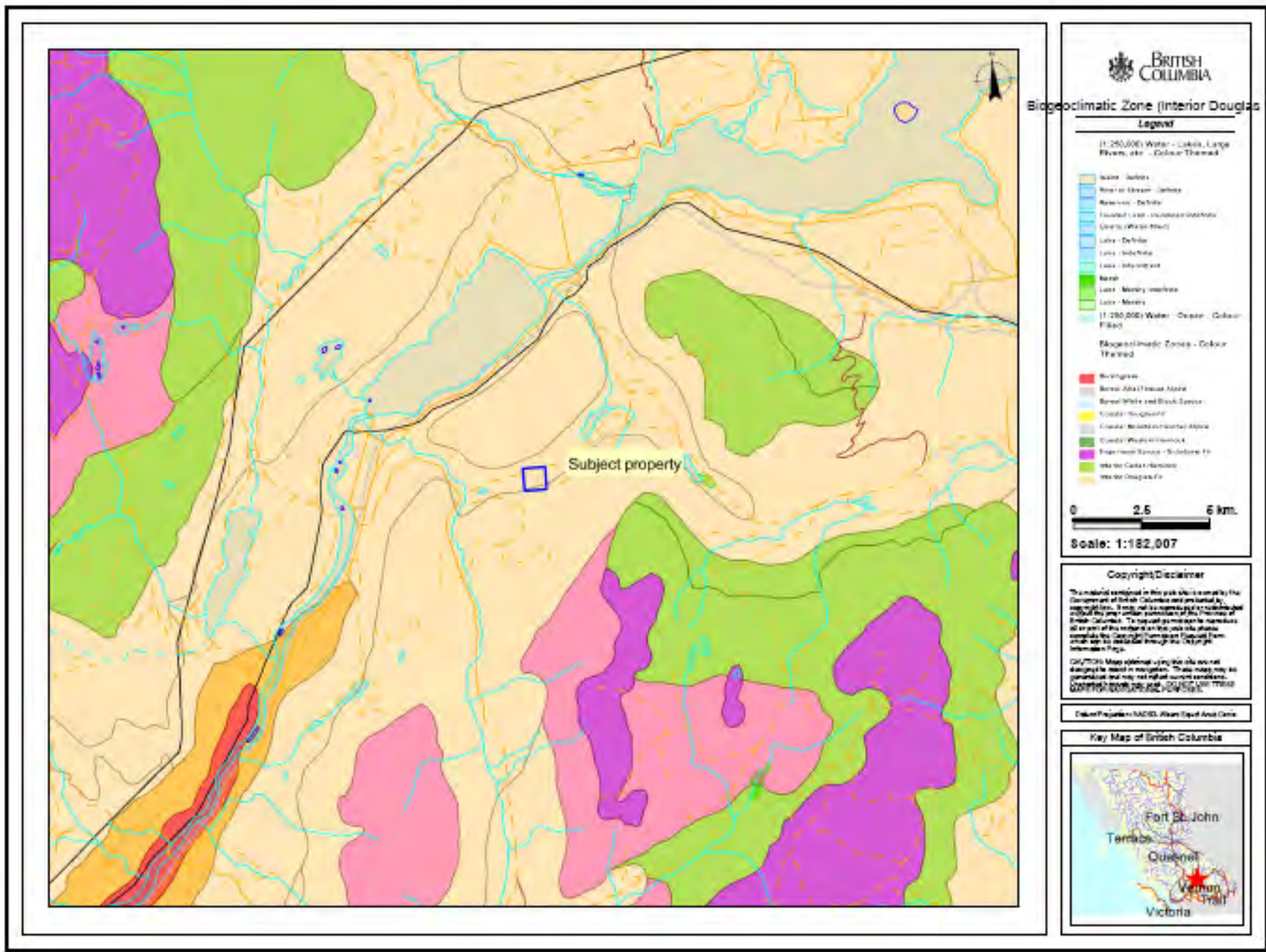
Thompson



## Some of the Species That Visit or Inhabit T bar K Ranch







# Biogeoclimatic Zone data

## North Side of Valley

**Coordinate Position**  
BC Albers: 1449543, 663467  
Geographic: 50° 48' 11" N, 119° 36' 32" W  
UTM 11N: 316182, 5631176

**BEC Analysis - All - (RES) - Outlined**

**Feature Class SKey:** 435  
**Zone:** IDF  
**Subzone:** xh  
**Variant:** 2  
**Natural Disturbance:** NDT4  
**Map Label:** IDFxh2  
**BGC Label:** IDF xh 2  
**Zone Name:** Interior Douglas-fir  
**Subzone Name:** Very Dry Hot  
**Variant Name:** Thompson  
**Natural Disturbance Name:** Ecosystems with frequent stand-maintaining fires  
**Feature Area:** 1441460608  
**Feature Length:** 1346410  
**AREA:** 0  
**LEN:** 0

## South Side of Valley

**Coordinate Position**  
BC Albers: 1449684, 663005  
Geographic: 50° 47' 56" N, 119° 36' 27" W  
UTM 11N: 316265, 5630701

**BEC Analysis - All - (RES) - Outlined**

**Feature Class SKey:** 435  
**Zone:** IDF  
**Subzone:** mw  
**Variant:** 2  
**Natural Disturbance:** NDT4  
**Map Label:** IDFmw2  
**BGC Label:** IDF mw 2  
**Zone Name:** Interior Douglas-fir  
**Subzone Name:** Moist Warm  
**Variant Name:** Thompson  
**Natural Disturbance Name:** Ecosystems with frequent stand-maintaining fires  
**Feature Area:** 922797056  
**Feature Length:** 587650  
**AREA:** 0  
**LEN:** 0



## The Ecology of the Interior Douglas-fir Zone

The Interior Douglas-fir Zone lies in the heart of British Columbia's southern interior. Often described as "cattle country," it is a land of rolling hills and valleys covered by dry grasslands and open forests. Although it is best known for cattle ranching and forestry, this zone also supports a rich diversity of natural communities and wildlife species.

Downloadable from:

[www.for.gov.bc.ca/hfd/pubs/Docs/Bro/bro47.pdf](http://www.for.gov.bc.ca/hfd/pubs/Docs/Bro/bro47.pdf)

# Species at Risk (non-sensitive) – Field Notes

## Endangered Species and Ecosystems - Non-sensitive Occurrences - Conservation Data Centre

OCCR\_AREA\_SP\_ID: 1067760  
OBJECTID: 11307003  
FEATURE\_CODE: FF84660210  
SHAPE\_ID: 3488  
OCCR\_ID: 5465  
SCI\_NAME\_F: *Olsynium douglasii* var. *inflatum*  
SCI\_NAME: *Olsynium douglasii* var. *inflatum*  
ENG\_NAME\_F: satinflower  
ENG\_NAME: Satinflower  
EL\_TYPE: Vascular Plant  
EL\_TYPE\_CD: PLANT  
TAX\_CLASS: monocots  
DATA\_SENS: N  
GLOB\_RANK: G4G5T3T4  
PROV\_RANK: S1  
BC\_LIST: Red  
SURV\_SITE: LITTLE SHUSWAP LAKE  
FIRST\_OBS: 1972-05-04  
LAST\_OBS: 1972-05-04  
OCCR\_DATA: Open, sandy hillsides.  
VEG\_ZONE: Montane  
HABITAT: TERRESTRIAL; GRASSLAND/HERBACEOUS  
REFERENCES: Royal British Columbia Museum. 1991. B.C. Minist. Tourism, and the Minist. Responsible for Cult. 675 Belleville Street, Victoria, BC. V8V 1X4.  
VERS\_DATE: Jan 6, 1992  
AREA: 312474645.431436  
LEN: 62747.5193089381

## Coordinate Position

BC Albers: 1449141, 666821  
Geographic: 50°50' N, 119°36' W  
UTM 11N: 316203, 5634551

## Identify Results

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### Endangered Species and Ecosystems - Non-sensitive Occurrences - Conservation Data Centre

**OCCR\_AREA\_SP\_ID:** 1069667  
**OBJECTID:** 11308910  
**FEATURE\_CODE:** FF84660110  
**SHAPE\_ID:** 23490  
**OCCR\_ID:** 6404  
**SCI\_NAME\_F:** *Taxidea taxus*  
**SCI\_NAME:** Taxidea taxus  
**ENG\_NAME\_F:** Badger  
**ENG\_NAME:** Badger  
**EL\_TYPE:** Vertebrate Animal  
**EL\_TYPE\_CD:** ANIMAL  
**TAX\_CLASS:** mammals  
**DATA\_SENS:** N  
**GLOB\_RANK:** G5  
**PROV\_RANK:** S1  
**COSEWIC:** E (MAY 2000)  
**BC\_LIST:** Red  
**SARA\_SCHED:** 1  
**SURV\_SITE:** KAMLOOPS  
**DIRECTIONS:** There are directions and UTM's for each of the points used to make up each of the polygons within Hoodicoff (2002). Due to the very large number of points used to make up these polygons, these are not included here.  
**FIRST\_OBS:** 1928-05-28  
**LAST\_OBS:** 2001-08-22  
**OCCR\_DATA:** There are 215 observations between May 22, 1928 and August 22, 2001 divided into 17 sources that include sightings of badgers and diggings. Observations within each source feature are a summary of the data presented in the complete database, which also includes UTM's and estimated precision (Hoodicoff 2002). The occurrence covers a very large area (~80km by 60km), however due to the density of sightings and activity within this area it was deemed appropriate. The source features are divided based upon concentrations and natural or anthropogenic features.  
**RANK:** E  
**RANK\_DESC:** Verified extant (viability not assessed)  
**RANK\_DATE:** 2001-08-22  
**CONDITION:** There is a Provincial Park within the EO that contains two fenced, ecological reserves set aside for education and research; there are parcels of private land and cattle grazing in the park; ATV's and off-road vehicles are permitted outside of park boundaries (British Columbia Ministry of Water, Land and Air Protection (online) 2004).  
**HABITAT:** TERRESTRIAL; ROADSIDE; GRASSLAND/HERBACEOUS; CROPLAND  
**REFERENCES:** British Columbia Ministry of Water, Land and Air Protection. 2004. B.C. Parks and Recreation Lac du Bois Grasslands protected area. Online. Available: <http://www.env.gov.bc.ca/bcparks/explore/parkpgs/lacduboi.html>. Accessed October 7, 2004.  
Hoodicoff, C. 2002. Database (Access) of badger sightings historically until 2001.

Rahme, A.H., A.S. Harestad, and F.L. Bunnell. 1995. Status of the Badger in British Columbia. B.C. Minist. Environ., Lands and Parks, Wildl. Branch. Working Rep. WR-72. 64pp.

**VERS\_DATE:** Oct 5, 2004  
**EST\_RA:** Low  
**CON\_EXTENT:** N  
**AREA:** 825714761.59224  
**LEN:** 573325.538102788

#### **Coordinate Position**

BC Albers: 1438325, 654475  
Geographic: 50°43' N, 119°46' W  
UTM 11N: 303917, 5623666





SARA (Non-sensitive)



# 3448



# 23490

SARA (Masked Sensitive)



# 8442

## TABLE 3 ACTION PLAN WORKSHEET

List the assessment questions that you scored as Considerable Opportunity or Some Opportunity and which you want to take action on. Using the BMP list, select the BMPs that you want to implement on your land. Set goals that are specific to the BMPs and what you want to achieve in your operation. Determine what you will monitor and when to check if your goals are being met. See the Sample Biodiversity Management Plan section of the guide for an example.

FARM NAME/AREA: T bar K Ranch		DEVELOPED BY: Karen Wilson, Ted Sikora, Pete Spencer		DATE DEVELOPED: March 1, 2010		PAGE 1 OF 1	
Question to Be Acted Upon	Proposed BMP or BMP Practice Code	Specific Goal(s) Related to BMP(s)	Proposed Monitoring		Date Completed, Approvals or Permits Required, and Other Comments		
			When	What			
#1, #3	1.1, 1.2, 1.3	Exclude livestock, provide alternate livestock watering, and restore native plants	During growing season	Evaluate vegetation			
#2, #6, #9	2.2, 6.2, 6.3, 9.1, 9.3	Plant shelterbelt/hedgerow in field margins	During growing season	Survival			
#5, #10	5.3, 10.2	Separate forest and pasture land to manage browsing/grazing, and alien species	During growing season	Evaluate vegetation			
#14	14.23	Minimize water use, monitor soil moisture, increase soil organic content	During growing season	Soil moisture			