



July, 2010

Project No: 09-474

Wetland Alliance: The Ecological Response
Salmon Arm, BC

Subject: Spring Inventory Results along the Salmon River, Salmon Arm, BC

1.0 INTRODUCTION

Ecoscape Environmental Consultants Ltd. (Ecoscape) was retained by Wetland Alliance: The Ecological Response (WA:TER) to conduct a spring inventory of wildlife species present along the Salmon River, adjacent to the proposed Smart Centers development site located at civic addresses 2571 and 2971 10th Avenue SW, Salmon Arm, BC (Property). The Property is adjacent to the Salmon River on the Salmon River Delta at the confluence of the Salmon River with Shuswap Lake. The Property includes riparian habitat features associated with the Salmon River, Shuswap Lake and Hobbs Creek, which combine to form the active Salmon River estuary and floodplain.

The inventory surveys were conducted on June 11 and 12, 2010. Ecoscape conducted an evening and early morning songbird survey, a call-playback survey for owls, aural survey for frogs, and conducted an overview assessment along the river and boundaries of the Property.

2.0 BIOPHYSICAL SETTING

The principal historic use of the Property has been agriculture and commercial use. Several buildings occur within the southern portion of the Property with old field and grazing areas occurring throughout the south and central portions. An auto wrecking lot had occurred within the south extent (vehicles and scrap have since been removed), and fill has been dumped in an area along the western boundary in preparation for the development.

The Salmon River transects the northwest corner of the Property and the majority of the north end is comprised of broadleaf riparian/floodplain ecosystems characterized by black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) with common snowberry (*Symphoricarpos albus*), red-osier dogwood (*Cornus stolonifera*), willow (*Salix* sp.), rose (*Rosa* sp.), and black hawthorn (*Crataegus douglasii*) understory. Historic disturbance to these areas is evident by the presence of non-native trees including Manitoba maple (*Acer negundo*) and American elm (*Ulmus americana*). Wetted relic channels (oxbows), riparian flood sites, and old seasonally flooded fields occurring both to the north and east of existing



urban disturbance comprise a mosaic of seasonally flooded low to mid-bench cottonwood floodplain communities and a meandering network of low-lying relic river channels predominated by reed canarygrass (*Phalaris arundinacea*). At the time of the inventory surveys, the river flows were close to bankfull levels (Photo 1). The stream discharge during the field visit ranged between 17.0 and 17.9 cubic metres per second (m^3/S). These flows were down from the peak discharge, which occurred on May 19, of about $27 \text{ m}^3/\text{S}$. During this period, the water level in the river was about 0.50 higher than observed during the field visit (Water Survey of Canada

http://www.wateroffice.ec.gc.ca/graph/graph_e.html?stn=08LE021&prm1=3&prm2=6&mode=graph&sno=5&sday=10&syr=2010&emo=6&eday=25&eyr=2010&y1min=&y1max=&y2min=&y2max=).

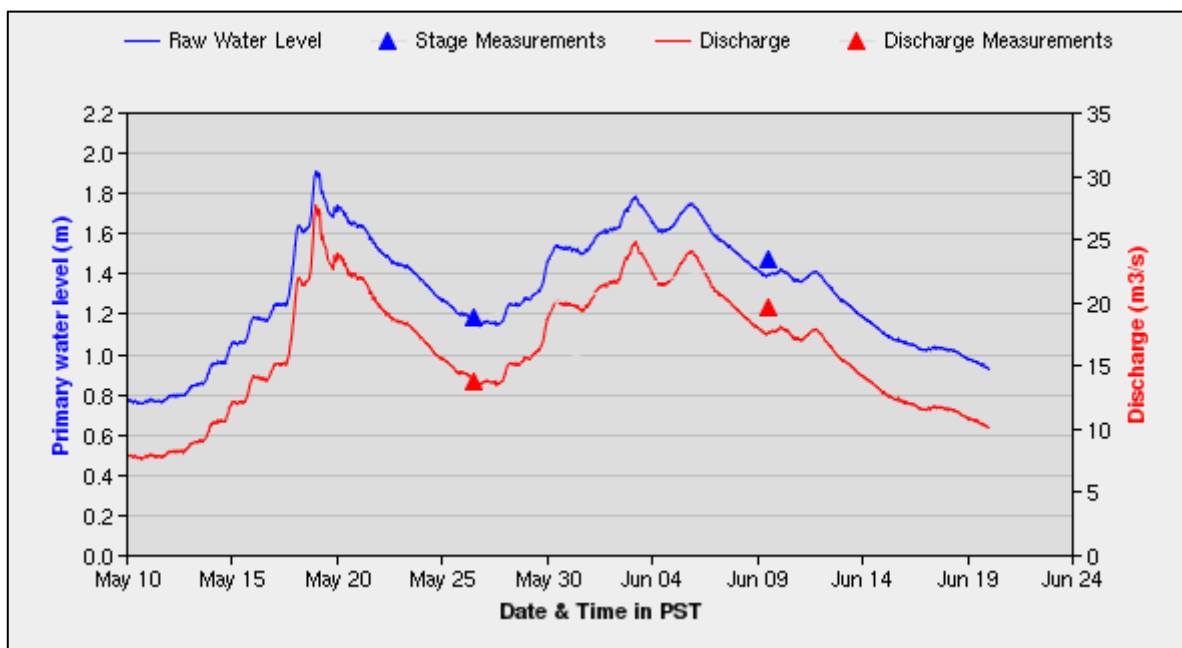


Figure 1. Hydrograph of the Salmon River from May 10 – June 25, 2010. Data was obtained from the Water Survey of Canada

(http://www.wateroffice.ec.gc.ca/graph/graph_e.html?stn=08LE021&prm1=3&prm2=6&mode=graph&sno=5&sday=10&syr=2010&emo=6&eday=25&eyr=2010&y1min=&y1max=&y2min=&y2max=).

3.0 SURVEY RESULTS

On June 11, 2010, Ecoscape conducted an evening songbird survey, a call-playback survey for owls, and an aural survey for frogs. On June 12, Ecoscape conducted an early morning songbird survey, an aural survey for frogs, and conducted an overview assessment along the river and boundaries of the Property. All surveys were conducted in clear, calm weather.

3.1 Songbird Survey



A list of birds observed during the evening and morning surveys is provided in Table 1 below. The provincial and federal listings are also provided. The evening survey was conducted along the eastern (i.e., left) bank of the Salmon River from the Neskonlith Reserve to the railway tracks (Photo 1). The survey was conducted during a very active evening chorus prior to sunset. The morning survey began before sunrise and was conducted along both banks of the Salmon River between the Neskonlith Reserve and the railway tracks. All birds observed (i.e., by sight and sound) were recorded.

Table 1. Summary of Observed within the Property on June 11 and 12, 2010.

Common Name	Latin Name	Provincial Listing ¹	COSEWIC Listing ²
American crow	<i>Corvus brachyrhynchos</i>	Yellow	-
American goldfinch	<i>Carduelis tristis</i>	Yellow	-
American redstart	<i>Setophaga ruticilla</i>	Yellow	-
American robin	<i>Turdus migratorius</i>	Yellow	-
bald eagle	<i>Haliaeetus leucocephalus</i>	Yellow	Not At Risk
black-billed magpie	<i>Pica pica</i>	Yellow	-
black-capped chickadee	<i>Poecile atricapillus</i>	Yellow	-
blue-winged teal	<i>Anas discors</i>	Yellow	-
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	Yellow	-
brown-headed cowbird	<i>Molothrus ater</i>	Yellow	-
California gull	<i>Larus californicus</i>	Yellow	-
Canada goose	<i>Branta canadensis</i>	Yellow	-
Cassin's vireo	<i>Vireo cassinii</i>	Yellow	-
cedar waxwing	<i>Bombycilla cedrorum</i>	Yellow	-
common merganser	<i>Mergus merganser</i>	Yellow	-
common nighthawk	<i>Chordeiles minor</i>	Yellow	Threatened
common yellowthroat	<i>Geothlypis trichas</i>	Yellow	-
downy woodpecker	<i>Picooides pubescens</i>	Yellow	-
eastern kingbird	<i>Tyrannus tyrannus</i>	Yellow	-
European starling	<i>Sturnus vulgaris</i>	-	-
gadwall	<i>Anas strepera</i>	Yellow	-
gray catbird	<i>Dumetella carolinensis</i>	Yellow	-
great blue heron	<i>Ardea herodias</i>	Blue	-
least flycatcher	<i>Empidonax minimus</i>	Yellow	-
MacGillivray's warbler	<i>Oporornis tolmiei</i>	Yellow	-
mallard	<i>Anas platyrhynchos</i>	Yellow	-
northern flicker	<i>Colaptes auratus</i>	Yellow	-
northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	Yellow	-
northern waterthrush	<i>Seiurus noveboracensis</i>	Yellow	-
red-eyed vireo	<i>Vireo olivaceus</i>	Yellow	-
red-tailed hawk	<i>Buteo jamaicensis</i>	Yellow	-
red-winged blackbird	<i>Agelaius phoeniceus</i>	Yellow	-
rock pigeon	<i>Columba livia</i>	Yellow	-
ruddy duck	<i>Oxyura jamaicensis</i>	Yellow	-



rufous hummingbird	<i>Selasphorus rufus</i>	Yellow	-
song sparrow	<i>Melospiza melodia</i>	Yellow	-
Swainson's thrush	<i>Catharus ustulatus</i>	Yellow	-
tree swallow	<i>Tachycineta bicolor</i>	Yellow	-
veery	<i>Catharus fuscescens</i>	Yellow	-
violet-green swallow	<i>Tachycineta thalassina</i>	Yellow	-
warbling vireo	<i>Vireo gilvus</i>	Yellow	-
western wood-pewee	<i>Contopus sordidulus</i>	Yellow	-
willow flycatcher	<i>Empidonax traillii</i>	Yellow	-
Wilson's warbler	<i>Wilsonia pusilla</i>	Yellow	-
wood duck	<i>Aix sponsa</i>	Yellow	-
yellow warbler	<i>Dendroica petechia</i>	Yellow	-
yellow-rumped warbler	<i>Dendroica coronata</i>	Yellow	-

1 Source: <http://www.env.gov.bc.ca/cdc/>

Yellow: Not at risk

Blue: Of special concern.

2 Source: <http://www.cosewic.gc.ca/>

Not at Risk: A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

Threatened: A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

The only bird species observed that is not Yellow-listed is the great blue heron, which is Blue-listed in BC. Heron populations have been decreasing within BC and suitable undisturbed nesting habitat (i.e., mature cottonwood riparian forest types) is becoming increasingly rare. The common nighthawk is considered Threatened federally due to recent severe declines in population across the country.

3.2 Owl Call-Playback Survey

A call-playback survey for western screech-owls was conducted following sunset on June 11, 2010. Surveys were conducted at 6 stations selected randomly along the eastern (i.e., left) bank of the Salmon River. Calls were broadcast for two minutes, followed by a two minute listening period. This was repeated three times at each survey station. Owls were not detected during the survey.

Western screech owls are known to occur within the vicinity of the study area. However, the timing of the surveys may not have been ideal for detections. The BC Resources Information Standards Committee suggests that screech-owls are unresponsive to call-playback in June and July (RISC 2006). The lack of detections during the surveys does not indicate that screech owls are absent from the study area.

3.3 General Observations

Other wildlife species or signs of presence were recorded during the inventory. A list of species observed is provided in Table 2 below.



Table 2. Summary of Wildlife Species Observed within the Property.			
Species Group		Provincial Listing¹	COSEWIC Listing²
Herptiles			
Pacific chorus frog	<i>Pseudacris regilla</i>	Yellow	-
western painted turtle	<i>Chrysemys picta</i>	Blue	Special Concern
Mammals			
American beaver	<i>Castor canadensis</i>	Yellow	-
American black bear	<i>Ursus americanus</i>	Yellow	-
coyote	<i>Canis latrans</i>	Yellow	-
red squirrel	<i>Tamiasciurus hudsonicus</i>	Yellow	-
river otter	<i>Lutra canadensis</i>	Yellow	-
white-tailed deer	<i>Odocoileus virginianus</i>	Yellow	-
unknown bat	n/a	-	-

1 Source: <http://www.env.gov.bc.ca/cdc/>

Yellow: Not at risk

Blue: Of special concern.

2 Source: <http://www.cosewic.gc.ca/>

Special Concern: A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

Frog surveys were conducted simultaneously with the songbird surveys. Two-minute listening periods were used to detect frog calls. Only one species, the Pacific chorus frog, was detected throughout the study area.

As indicated in Table 2, Blue-listed western painted turtle were observed throughout the ponds and backwater channels (e.g., oxbows) adjacent to the Salmon River. A large mature turtle was observed along the left bank of the Salmon River (Photo 2). The presence of the turtles in these areas strongly suggests they may be present within aquatic habitats sustained within the Property.

Mammals observed (i.e., directly or animal sign) were mostly common and predictable, including beaver, black bear, and deer (Photo 3). River otters were also detected along the banks of the Salmon River.

4.0 CONCLUSION

The cottonwood riparian community surrounding the Salmon River and associated oxbows, backwater channels, and active floodplain provide critical habitat for a number of rare and At Risk wildlife. During the inventory surveys, sensitive bird species such as great blue heron and common nighthawk were observed in the area surrounding the River. The Blue-listed painted turtle occurs throughout the Salmon River complex of wetlands, ponds, and watercourses. Although western screech-owls were not detected during the inventory surveys, there are historic records of western screech owl breeding in the area and suitable habitat occurs throughout the broadleaf riparian communities. The results of this brief



inventory surveys further confirm the rich biodiversity characteristic of the area and the rare and critical habitat sustained throughout. The Salmon River and associated cottonwood riparian community combine to form a dynamic complex of sensitive ecosystems with important local, regional, and provincial significance. The potential for the occurrence of rare and endangered wildlife throughout the area is high. Accordingly, these areas should remain intact and buffered appropriately from urban and development impacts to preserve the integrity of the cottonwood floodplain communities, seasonally flooded sites, and wetlands. Through such actions, critical salmon rearing and migratory bird nesting habitat and the overall functioning of the Salmon River delta can be conserved.

5.0 CLOSURE

This letter has been prepared for the exclusive use of WA:TER. Ecoscape has prepared this letter with the understanding that all available information on the present and proposed condition of the site has been disclosed. WA:TER has acknowledged that in order for Ecoscape to properly provide the professional service, Ecoscape is relying upon full disclosure and accuracy of this information.

If you have any questions or comments, please contact the undersigned at your convenience.

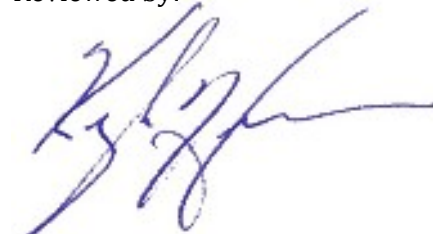
Respectfully Submitted,
ECOSCAPE Environmental Consultants Ltd.

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6.0 LITERATURE CITED

RISC (Resource Information Standards Committee). 2006. Standards for Components of British Columbia's Biodiversity No.42. Inventory Methods for Owl Surveys. Prepared by D. Hausleitner, Seepanee Ecological Consulting. Prepared for the Ecosystems Branch of the Ministry of Environment for the Resources Information Standards Committee. 52 pp





Photo 1. View downstream of Salmon River from left bank showing the high water levels at the time of the inventory (June 11, 2010).

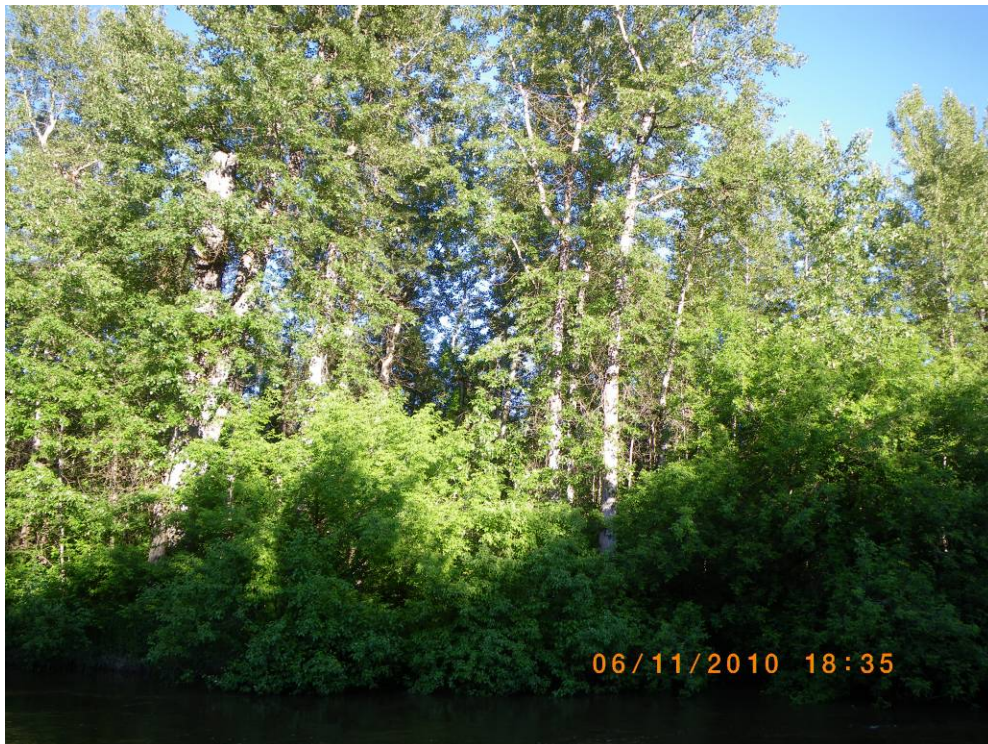


Photo 2. View across Salmon River (i.e., from left bank to right bank) at a survey location near the proposed development (June 11, 2010).



Photo 3. Painted turtle observed along the left bank of the Salmon River, across from the proposed development (June 11, 2010).



Photo 4. Beaver observed from the left bank of the Salmon River downstream from the proposed development (June 11, 2010).