

## 2021

# 7174 FINTRY DELTA ROAD Habitat Restoration and Environmental Assessment



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### 1.0 PROJECT BACKGROUND

Arsenault Environmental Consulting Ltd. (the Consultant) was retained by Kristina Souter and Narasak Holdings to provide professional biologist services associated with the removal and relocation of a sauna on the foreshore of the property located at 7174 Fintry Delta Rd, Kelowna, BC, which currently contravenes the Regional District Central Okanagan's (RDCO) Zoning Bylaw No. 871 regarding Floodplain Regulations. The Legal property description for the area is Lot 1, Plan KAP56666, District Lot 3842, Osoyoos Division of Yale Land District, and PID 023-393-971 (the Property). The Property is currently zoned RU2 (Large Holding). The Tot is 9.933 acres (4.02 Ha) in size and fronts Okanagan Lake (Figure 1).

The sauna is currently located <15 m from the present natural boundary (PNB) of Okanagan Lake. To remediate this issue, the client is required to remove the sauna from the riparian area and relocate the Sauna where impacts can be avoided and/or mitigated. The riparian area where the sauna currently rests will require enhancement so that it can provide proper ecological function for fish and wildlife.

The purpose of this report is to provide a detailed restoration plan of the riparian area where the sauna is currently located, along with strategies to guide responsible development within environmentally sensitive areas, and an environmental impact assessment (EIA) of the building relocation.



**Photo 1**. View of the Sauna that encroaches into the Habitat. The Sauna Structure will be removed and placed >15 m from the Present Natural Boundary. Vegetation is growing out of the space below the sauna. The stairs will remain to provide beach access from the relocated sauna.

The Consultant understands that the Client will be removing the existing sauna building and that it will be moved to outside of the 15-metre setback from the Present Natural Boundary. It will be moved by crane to its new location and cut down in size. The only structure that will remain will be the stairs to provide access from the new sauna location to the Foreshore (Figure 2).

This report will be presented in two Sections. Section 1 will address the restoration and enhancement of the Foreshore/Riparian area impacted by the original structure accompanied with detailed prescriptions for the site. Part 2 of the Report will deal specifically with the impact assessment of relocating the sauna including methods, results, and recommendations.

The assessment was completed by a Registered Professional Biologist (Darryl Arsenault, MSc, RPBio #1088). Assistance was provided by Ernest Leupin, MSc. This assessment follows Terms of Reference (TOR), Professional Reports for Planning Services (RDCO 2014).

#### 2.0 HABITAT RESTORATION AND ENHANCEMENT

The existing sauna building is elevated on wooden pilings and includes decks on two levels and was built to within about 6 m from the present natural boundary of Okanagan Lake. The total area impacted by the sauna and decks is 35 m<sup>2</sup>. The underside of the sauna is composed of bare earth in places where support structures were reenforced with concrete blocks that were dug into the ground (Photo 2 below). There is a large stump of a ponderosa pine tree that is located below the upper deck. The tree was not felled to build the sauna. Roots from the tree would provide stability to the existing slope. The stump should not be disturbed.

Concrete blocks will be removed when the decks and sauna are removed, Disturbed ground will be leveled. Plants will be placed within the disturbed areas. There appears to be considerable natural regeneration occurring under the elevated building. The upslope side of the building is at ground level. That area will need to be restored in its entirety. The exact extent of restoration required will not be known until the building is removed.

Arsenault assumes that 60% of the building footprint will need to be restored, plus the disturbed areas where support structures contacted the ground. The sauna and deck area amounts to about 35 m<sup>2</sup>. This means that approximately 21 m<sup>2</sup> will need to be restored.

A total of 15 plants are proposed to be planted in the footprint of the sauna building. This will provide a planting density of 1.5 m on center. Placement will be determined by a qualified professional. The proposed plant list is provided below. Substitutions must be approved by the qualified professional in consultation with the Client.

Common Name	Scientific Name	Number and (Size)
Blue elderberry	Sambucus cerulea	1 (#2 pot)
Ponderosa pine	Pinus ponderosa	2 (#5 pot)
Douglas maple	Acer glabrum	2 (#5 pot)
Saskatoon berry	Amelanchier alnifolia	3 (#3 pot)
Yarrow	Achillea millefolium	4 (#1 pot)
Oregon grape	Mahonia aquifolium	3 (#2 pot)
Total Number		15

The anticipated cost to purchase and install the plants is \$675. This amount, plus 25%, may be required by the RDCO for bonding purposes. Environmental monitoring may be required and would include inspection during restoration, and reporting, with a total fee estimate of \$1,200. Follow-up inspections in subsequent years are estimated to cost approximately \$600 per year, if required.



**Photo 2.** The front deck is supported by wooden beams on concrete blocks. These areas will be leveled and planted. There were native plants growing under the deck including Oregon grape, Nootka rose, snowberry, and woods rose. Each of these species spreads by runners and each is expected to proliferate once shade from the deck is removed.

#### 3.0 ENVIRONMENTAL IMPACT ASSESSMENT

Environmental impacts exist from the former construction of the sauna in the riparian area and can be created from the demolition of decks and moving of the sauna building. The following section discusses environmental sensitivities and potential impacts.

#### 3.1 ASSESSMENT METHODS

For the desktop analysis, we utilized provincial and federal databases specifically for upland species. These provided initial guidance and helped guide our site Assessment. Databases include:

- RDCO Mapping Services, Environmental Protection (Sensitive Ecosystems Mapping, Sensitive Habitat Inventory Mapping). <a href="https://www.rdcogis.com/GIS">https://www.rdcogis.com/GIS</a> <a href="https://wwww.rdcogis.com/
- BC Conservation Data Centre. <u>http://maps.gov.bc.ca/ess/hm/cdc/</u>
- Government of Canada Species at Risk Act: COSEWIC assessments and status reports.
   <u>https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports.html</u>

- Government of Canada Migratory Birds Convention Act (MBCA) and Regulations. <u>https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal-protection/convention-act-regulations.html</u>
- Province of British Columbia Wildlife Act.
   <u>https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/96488\_01</u>

#### Environmentally Sensitive Areas

Environmentally Sensitive Areas (ESA) were based on mapping from the Sensitive Ecosystem Inventory (SEI) housed on the RDCO interactive website. The SEI map was refined through Site inventory with attention on the location of the proposed Sauna relocation and alterations to the landscape by anthropogenic activity. The RDCO has established ESAs as follows.

#### Table 1. Class Significance Description

ESA-1	Very Significant	These areas contain significant vegetation and wildlife characteristics representing a diverse range of sensitive habitat. These features contribute significantly to the overall connectivity of the habitat and ecosystems. Avoidance and conservation of ESA-1 designations should be the primary objective. If development should occur within these areas (Only after it proves impossible or impractical to maintain the same level of ecological function) compensation will promote no net loss to the habitat (typically with a 3:1 replacement of equivalent functioning habitat).
ESA-2	Moderate Significance	These areas contribute toward the overall diversity and contiguous nature of the surrounding natural features. If development is pursued in these areas portions of the habitat should be retained and integrated to maintain the contiguous nature of the landscape. Some loss to these ESAs can be offset by habitat improvements to the remaining natural areas found on property.
ESA-3	Low Significance	These areas contribute to the diversity to the landscape, although based on the condition and adjacency of each habitat the significant function within the landscape is limited. If development is pursued in these areas the impacts should be offset by habitat improvements in other more sensitive natural areas found on property.
ESA-4	Little or no Significance	These areas contribute little or no value to the overall diversity or vegetation, soils, terrain and wildlife characteristics of the area. Development is encouraged to be focused to these sites before consideration developing higher rated sites of the area. These areas shall not be considered as areas for restoration and enhancement or as recruitment as higher value ESA in offsetting development in other areas.

#### **Core Conservation Areas**

As with the Environmentally Sensitive Areas, the SEI also identified Core, Buffer, Wildlife Corridors, and other important Conservation Areas in their Mapping Exercise. The definitions to the designation of the Conservation Values are provided below as per Updated Ecosystem Mapping for the Central Okanagan Valley (Haney and Iverson, 2009).

Core Conservation Areas	Areas with a large concentration of high and some moderate conservation values were identified as core conservation areas. These would be the areas of highest priority for conservation. Ideally, activities would be primarily directed towards maintaining ecological and wildlife habitat values in these areas. There may be small areas within the core areas that could be accessed and developed without compromising core values (e.g., by fragmentation); further larger scale mapping and wildlife inventory would be needed to identify these areas. Core areas are high priorities for acquisition by land trusts, conservation organizations, for Regional Parks, and should be zoned for environmental purposes.
Buffers	Core conservation areas need to be buffered from potential adverse effects of adjacent land uses. The width and design of buffers also needs to be refined at larger scales to reflect the size of patches, ecosystem types, local landscape features and wildlife habitat values. Wetland and riparian buffers will likely need to be wider, but it is possible that buffers around some

	upland ecosystems may be narrower.
Wildlife Corridors	Wildlife corridors provide animals with an opportunity to move freely between two or more habitat patches or habitat types in an otherwise fragmented landscape. This movement is essential to provide genetic links between populations and prevent inbreeding, and to compensate for temporary population declines in one of the habitat patches. The habitat needs of all priority species should be incorporated into the design of the corridor. Corridors must be suitably wide, with appropriate habitat features to provide security cover during movement. Corridors usually consist of linear habitats such as gully or streamside riparian areas; they are often composed of two or more ecosystem types to provide complexity to the corridor. Development and roads should avoid these zones, and mitigation will be required where roads and other developments transect the corridor. Wildlife corridors were identified to connect core areas to each other and to outside the study area. In some cases, important corridors have already been fragmented by roads or other disturbances, and connections need to be restored. Larger scale mapping and additional wildlife inventory might identify some small areas that could be developed without compromising connectivity and other corridor values. This would depend upon the type and configuration of development, and site-specific issues.
Other Important Conservation Areas	Areas with a concentration of moderate conservation values, or small and isolated areas of high values, were identified as other important conservation areas. Activities would be directed towards maintaining ecological and wildlife habitat values. There would be areas within that could be accessed and developed without compromising some ecological values; further larger scale mapping and wildlife inventory would be needed to identify these areas.

Haney, A. and K. Iverson (2009) Central Okanagan EcoMapping Update Report (2009). Report: Conservation Analysis and Updated Ecosystem Mapping for the Central Okanagan Valley: Central Okanagan, South Slopes, Kelowna, Ellison and Joe Rich project areas. Okanagan Collaborative Conservation Program.

In the context of the property, sensitivity zones were further refined and assigned into three categories as follows:

- ESA-1 are areas of provincial or regional rarity that are in relatively pristine states and provides habitat promoting biodiversity for rare or regionally important ecosystems and wildlife species
- ESA-2 are areas similar to ESA-1 but has experienced a small to moderate amount of alteration so that habitat value has been reduced. These areas are prime for restoration or enhancement to increase the ESA value
- ESA-3 are areas that have been impacted by land alteration to the point that there is very little habitat value to support biodiversity, and restoration and restoration or enhancement would be cost-prohibitive (e.g., gravel driveway or building areas)

The assessment area included the entire subject area but emphasis was placed in the immediate vicinity of the proposed Sauna relocation site. Field assessments were completed by Darryl Arsenault, MSc, RPBio, on September 1, 2020. The assessment was habitat-based.

No detailed species inventories were carried out because based on the proposed location of the Sauna, no native habitat is expected to be disturbed.

## 3.2 HABITAT CHARACTERIZATION

The subject property is located along the western shoreline of Okanagan Lake in the Interior Douglas Fir very dry, hot biogeoclimatic variant (IDFdk1). Most of the property is steeply sloped and supports an open forest comprised primarily of mature Douglas Fir (*Pseudotsuga menziesii*) and isolated Ponderosa Pine (*Pinus ponderosa*). The dominant shrub is Saskatoon (*Amelanchier alnifolia*), and to a lesser extent, Birch-leaved Spirea (*Spiraea betulifolia*) and Common Snowberry (*Symphoricarpos albus*). The forb layer is comprised primarily of grasses including Bluebunch Wheatgrass (*Pseudoroegneria spicata*), Needlegrass (*Stipa spp.*), Pinegrass (*Calamagrostis* rubescens) and Junegrass (*Koeleria macrantha*). Herbs in the understorey include Common Yarrow, and Balsamroot (*Balsamorhiza sagittata*) among others.

The Property has been mapped as containing High, Moderate, and Low sensitivity areas (SEI RDCO 2001; RDCO Website 2020). Much of the property has an ESA-2 (Moderate Sensitivity) rating. The extreme south Eastern corner of the property is classified as an ESA-1 (Very Significant) sensitivity rating. The eastern (lakeside) quarter of the Property has been mapped as Not Sensitive (Figure 4).

Similarly, most of the property (except for areas that have been built and landscaped) have been classified as having Conservation Values. Much of the moderate sensitivity ESA has been identified as Core Conservation Zone, and the Very Significant ESA has been identified as a Conservation Buffer Zone (Figure 5).

#### 3.2.1 Ecosystems

The Property is in the Interior Douglas-fir very dry hot subzone Okanagan variant (IDFxh1) biogeoclimatic subzone – variant, which occurs from valley bottoms up to elevations between approximately 500 to 1000 m. Ecosystems mapped within the associated polygons for the subject property are:

- WD:co Conifer Woodland- Douglas Fir
- RI Riparian- Black Cottonwood Douglas-Fir / Common Snowberry Red-osier Dogwood (Red-listed Ecosystem, BCCDC 2012)
- **NS** Rural and Urban Development

#### 3.2.2 Flora

Most of the property is steeply sloped and supports an open forest comprised primarily of mature Douglas Fir (*Pseudotsuga menziesii*) and isolated Ponderosa Pine. The dominant shrub is Saskatoon, and to a lesser extent, Birch-leaved Spirea (*Spiraea betulifolia*) and Common Snowberry (*Symphoricarpos albus*). The understorey is comprised primarily of grasses including Bluebunch Wheatgrass (*Pseudoroegneria spicata*), Needlegrasses and Junegrass. Herbs in the understorey include Common Yarrow, and Balsamroot, among others.

There are few weedy species on the property. Those that are present in low numbers include Great Mullein (*Verbascum thapsus*), Diffuse Knapweed (*Centaurea diffusa*), and Cheatgrass (*Bromus tectorum*). Weeds are prevalent on disturbed areas and roadsides.

The riparian zone is particularly narrow and native vegetation remains only in the extreme southeastern corner of the property. Despite its narrow characteristic, it is the most diverse ecosystem within the property. Species include Black Cottonwood, (*Populus trichocarpa*), Douglas Maple (*Acer Glabrum*), Saskatoon, Birch-leaved Spirea, Rose (*Rosa* spp), Common Snowberry, Chokecherry (*Prunus virginiana*) as well as emergent species.

#### 3.2.3 Fauna

The Central Okanagan is home to many species of reptiles, birds, mammals, and other wildlife, making this one of the most richly diverse areas in British Columbia. The IDFxh1 is a common habitat along the western slopes of Okanagan Lake and provides important habitat for many mammalian, avian, reptilian, and amphibian species, many of which are species that are at risk both at Provincial and Federal levels.

The table below identifies some of the Species at Risk that may utilize the subject property at any given time in their life history (breeding, rearing, roosting, foraging, dispersal, and overwintering).

SPECIES	SCIENTIFIC NAME	PROV/FED LISTING	LIFE HISTORY*
Western Rattlesnake	Crotalus oreganus	Blue/Threatened	F
Great Basin Gopher Snake	Pituophis catenifer deserticola	Blue/Threatened	B/F
Rubber Boa	Charina bottae	-/Special Concem	B/F/O
American Badger	Taxidea taxus Jeffersonii	Red/Endangered	B/R/F/D
Little Brown Myotis	Myotis lucifugus	Yellow/Endangered	F/R
Townsend's Big-eared Bat	Corynorhinus townsendii	Blue/No Status	F/B/H/R

Table 2. Species at Risk occurring in habitats within the IDF xh1 similar to the Subject Property.

\* B=Breeding; R=Rearing; R=Roosting; F=Foraging; D=Dispersal; O=Overwintering.

In addition to the species tabulated above, there are many species that are not listed but contribute to the overall biodiversity of the area including large mammals such as Mule deer (*Odocoileus hemionus*), Black Bear<sup>1</sup> (*Ursus americanus*), and Coyote (*Canis latrans*). Small mammals likely include White-Footed Deer Mouse (*Peromyscus maniculatus*), Meadow Vole (*Microtus pennsylvanicus*), Yellow-bellied marmot (*Marmota flaviventris*), and Douglas Red Squirrel (*Tamiasciurus hudsonicus*). Birds are the more diverse class of vertebrates represented on the site. Approximately 80 species (excluding waterfowl) are common or relatively common in this Biogeoclimatic variant and thus they are the primary contributor to species richness. All these species are likely to occur within the subject property at various times throughout a given year. In terms of reptiles, Western Yellow-bellied Racer (*Coluber constrictor mormon*), Wandering and Common Garter Snake (*Thamnophis elegans vagrans* and *T. sirtalis*) as well as those listed species above. Amphibians are likely the least represented Class on the subject property because the lack of wetlands is a limiting factor. Nevertheless, Pacific treefrog (*Hyla regilla*), and western toad (*Bufo boreas*) may occur infrequently.

#### 3.3 IMPACT ASSESSMENT

The proposed Sauna structure will have a building envelope of approximately 9.2 m<sup>2</sup> as well as a similar sized grade level deck (See Figure 2). The proposed location will be >15 metres from the Present Natural Boundary. Specifically, it will be located on a flat grassy area beyond a grassy path.

Based on the SEI Environmental Sensitivity Areas, the proposed location falls within polygons of very significant and moderate significance designation. Nevertheless, it is important to bear in mind that the polygons that have been mapped are relatively coarse and require on-the-ground verification. Upon visiting the site, we confirmed that the site was indeed devoid of native vegetation (see attached photos).

<sup>&</sup>lt;sup>1</sup> A young black bear was observed moving north along the riparian corridor during the time of a site visit.

The specific location does not have any native vegetation and no native vegetation is expected to be removed or impacted during sauna relocation. We therefore conclude that impacts to intact ecosystems will be minimal and that no mitigation/compensation will be required.

#### 4.0 ENVIRONMENTAL MONITORING

Environmental monitoring will not be required during the dismantling of the existing Sauna Structure. A visit will be conducted by a Qualified Professional to layout plants and to determine compliance of the planting and restoration recommendations set forth in Section 2 of this document. A second visit may be carried out the following year to report whether the plantings were successful and that no additional enhancement activities are required to protect the riparian area.

No environmental monitoring will be required during the relocation of the proposed Sauna and removal of associated structures.

#### 5.0 CONCLUSIONS

The Environmental Assessment provides the context and setting for the demolition and relocation of a Sauna structure at 7174 Fintry Delta Rd. Relocation of the sauna building has potential to cause harm to riparian habitat. However, if the Contractor adheres to the BMP's and mitigation measures provided in this report, the ESA-1 zone can be protected with minimal adverse effects and no serious harm to terrestrial and/or aquatic species and habitat at the Site. In general terms, this project is considered low impact, where disturbed areas will be restored, and the relocation site avoids disturbance of native vegetation. Rehabilitation of the area after dismantling the existing sauna will be relatively straight forward since part of the structure is elevated and did not result in significant impacts to the foreshore and riparian areas.

We trust this report meets your needs. If you have any questions, concerns, or require clarification, please contact the undersigned at your convenience.

Respectfully,

Signature

Name of Qualified Professional

Professional Association Number

Date

Darryl Arsenault, MSc, RPBio RPBio #1088 16 March 2021



#### SITE PHOTOS



Photo 3. View of the underside of the Sauna building. Note native plant growth under it.



Photo 4. The extent of disturbance was limited to the footings and support posts at the lakeside area. Complete disturbance is anticipated at the back of the sauna.



Photo 5. Sauna Structure on left. Proposed Sauna location will be nearer to the barrel pictured. Note steep nature of the mid-seral forest in background.



**Photo 6.** Photo taken from near the proposed new Sauna location. Only the back edge of the sauna building appears to be resting on the ground.



Photo 7. The narrow riparian band supports several tree and shrub species including Saskatoon berry, Oregon grape, black cottonwood, Nootka rose, red-osier dogwood, chokecherry, and Douglas maple.







