

# Proposed Trail Development Along the Former Kettle Valley Railway (KVR) Line Adjacent to Vaseux Lake and At-risk Species Evaluations

Letter Report prepared for the Vaseux Lake Stewardship Association (VLSA)

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*Transmitted via e-mail*

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## Background and Objectives:

This brief letter report provides high-level thoughts and recommendations regarding any proposed or currently unforeseen development of any lands and areas either within or adjacent to the federally protected Vaseux-Bighorn Wildlife National Wildlife Area (**VBNWA**) and/or Vaseux Lake Migratory Bird Sanctuary (**VLMB**S). The further focus of this report is on potential re-development of the former Kettle Valley Railway (**KVR**) right-of-way (South Spur Trail) that runs through the Westside Unit of the VBNWA.

Further to early discussions with VLSA, I have thought about pragmatic needs associated with the protection and recovery of vulnerable species within the VBNWA, VLMBS, and historical KVR right-of-way along the western foreshore of Vaseux Lake.

## Relevant Pre-existing Studies and Guidance:

In preparing this letter report, I have reviewed the following reports, listed from the most recent to least recent.

- Gebauer, M., November 2020. **Desktop Assessment of Species at Risk Occurrence at the Vaseux-Bighorn National Wildlife Area, British Columbia**. Report prepared for Environment and Climate Change Canada, 80 pp.(40 pp plus appendices).
- EBB Environmental Consulting Inc. (G. Smart & O. Busby), June 2019. **Vaseux Lake West, Reconnaissance-Level Assessment Environmental Feasibility Study Kettle Valley Railway, South Spur Trail**. Report prepared for BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development, 15 pp.
- Böttsch, Y. *et al.*, 2018. Effects of recreational trails on forest birds: Human presence matters. *Frontiers in Ecology and Evolution* **6**:175. (*doi: 10.3389/fevo.2018.00175*).
- EBB Environmental Consulting Inc. (G. Smart & O. Busby), March 2018. **Environmental Feasibility Study -Kettle Valley Railway, South Spur Trail**. Report prepared for BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development, 203 pp (165 pp. plus appendices).

- Pogue, A.M., 2017. **Humans, Climate and an Ignitions-Limited Fire Regime at Vaseux Lake**. M.Sc. Thesis, University of British Columbia, 82 pp.
- McIntosh, T.T., January 2014. **Results of a Foreshore Inventory for At Risk Plant Species in the South Okanagan Valley, BC**. Report prepared for BC Ministry of Forests, Lands, Natural Resource Operations. 26 pp. (available online: [https://a100.gov.bc.ca/pub/acat/documents/r42360/2014ResultsofSOkForeshoreAtRiskPlantInventory\\_1395864916773\\_5863693007.pdf](https://a100.gov.bc.ca/pub/acat/documents/r42360/2014ResultsofSOkForeshoreAtRiskPlantInventory_1395864916773_5863693007.pdf))
- Erasmus, H., April 2014. **Vaseux Lake Canadian Wildlife Service Burn**. UBC graduating project report. 23 pp. (<https://dx.doi.org/10.14288/1.0075585>)
- Environment Canada, 2011. **Vaseux–Bighorn National Wildlife Area Management Plan**. 60 pp. (available online: <https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/publications/vaseux-bighorn-management-plan.html>)
- Dawe, N.K., R. Buechert, A.C. Stewart, J. Penny, K.A. Brock and F. Russell, 2004. **Some Aspects of the Ecology of Vaseux-Bighorn National Wildlife Area with Emphasis on Species at Risk**. Unpublished. Canadian Wildlife Service, Pacific and Yukon Region, British Columbia.

### **Statutory Guidance Regarding Protections and Use of VBNWA:**

The VBNWA is a formally designated protected area under the *Canada Wildlife Act*. Any incursions into or developments and activities in or adjacent to the VBNWA must be fully consistent with the intent and current legal/management status of this statutory designation. According to Environment and Climate Change Canada (**ECCC**),

“Under *the Canada Wildlife Act*, NWAs are protected and managed in accordance with the Wildlife Area Regulations. The primary purpose of NWAs is to protect and conserve wildlife and wildlife habitat. For this purpose and according to the legislation, all activities in a NWA that could interfere with the conservation of wildlife can be prohibited. Consequently, most NWAs are not accessible to the public and all activities in these NWAs are prohibited. However, some activities may be authorized through Schedule I.1 of the Wildlife Area Regulations or the issuance of permits as long as they are consistent with the management plan goals for the NWA.”

(Government of Canada Vaseux-Bighorn National Wildlife Area website: <https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/locations/vaseux-bighorn.html>)

While the former KVR right-of-way is not formally included within the Westside Unit of the Vaseux-Bighorn NWA, it stands to reason that any activity in the former right-of-way should be fully consistent with the management plan goals for the NWA. This is based on at least two considerations.

First, the federal *Species at Risk Act* (**SARA**) enables the Governor in Council to make an order to prohibit destruction of critical habitat for any part of critical habitat located on non-federal lands.

Per the Preface of the Recovery Strategy for the Tiger Salamander Southern Mountain Population, and many similar recently completed recovery strategies, ECCC notes,

“For any part of critical habitat located on non-federal lands, if the competent minister forms the opinion that any portion of critical habitat is not protected by provisions in or measures under SARA or other Acts of Parliament, or the laws of the province or territory, SARA requires that the Minister recommend that the Governor in Council make an order to prohibit destruction of critical habitat. The discretion to protect critical habitat on non-federal lands that is not otherwise protected rests with the Governor in Council.”

Second, the proposed route of the KVR South Spur Trail, as illustrated in Figure 2-1 of the EBB (2018) study, comprises a potential continuous interruption to wildlife movements and habitat connectivity between terrestrial and aquatic (lake and wetland) habitats, including between the Vaseux Lake Migratory Bird Sanctuary and the VBNWA. Furthermore, the existing railbed of the historical KVR comprises a large, continuous historical profound modification to riparian habitat on the western shore of Vaseux Lake that might otherwise be important habitat for vulnerable and ecologically important biological species.

### **Analysis:**

The imperative for any activities or developments along the former KVR right-of-way to be fully consistent with the management goals of the VBNWA is based in part on the very large number of at-risk biological species (special concern, endangered, threatened) that are known to occur within the southern Okanagan and specifically within the NWA. According to the Government of Canada’s Vaseux-Bighorn National Wildlife Area website -

“Thirty species included on Schedule 1 of SARA are currently known to occur in the NWA.”

This list of potentially relevant federally listed at-risk species is smaller than as provided by Gebauer (2020) or EBB (2018). The difference in reported numbers of identified provincially- or federally listed species between the two reports is based in part on the different geographic scopes. Gebauer (2020) provided a desktop assessment for the Vaseux-Bighorn NWA (83 relevant species) while the EBB (2018) study was focussed on the South Spur Trail Local Study Area (LSA), which extends south to Osoyoos Lake, beyond the southern extents of the Westside unit of the NWA.

The thirty Schedule 1 SARA species identifying by ECCC are listed here in Table 1, starting on the next page, along with notes on conservation status and habitat needs that may be particularly relevant in light of the South Spur Trail development proposal.

Eight of the species listed in Table 1 are highlighted in bold text. Under SARA, critical habitat units have been formally identified (and gazetted) for these species that substantially overlap the LSA of the proposed South Spur Trail. These species are further expected to occupy lower elevation riparian habitat through some life stages.

The bolding of these eight species in Table 1 is not intended to diminish the importance of protection and recovery needs for the much larger suite of special concern, threatened and endangered species that have been included in both federal and provincial (Conservation Data Centre) lists or have yet to be formally identified. The large number of formally identified at-risk

species in the Vaseux Lake area and larger south Okanagan is a reflection of the biogeoclimatic conditions in this region of Canada that are very restricted in their distribution. Thus, it is likely that other relatively unique flora and fauna would be found in the area, particularly for taxonomic groups that receive much less attention than birds, mammal, reptiles, amphibians, and butterflies.

In addition, text in COSEWIC status reports, SARA management plans, or the SARA recovery strategy for several of the thirty SARA-listed species identified in the Vaseux Bighorn NWA indicate that the current state of knowledge is insufficient to confidently identify critical habitat for them in the south Okanagan. This type of uncertainty reduces confidence in planning efforts to protect and support recovery of these species. From a management perspective, it would be appropriate to expect a higher level of effort in the conduct of ecological surveys for any proposed activities and developments in light of this high level of uncertainty.

**Table 1: SARA-listed species known to occur in the Vaseux-Bighorn Wildlife Management Area**

<b>SARA-listed Species</b>	<b>Notes</b>
<b><i>Birds</i></b>	
<a href="#"><u>common nighthawk</u></a>	special concern
<a href="#"><u>flamulated owl</u></a>	special concern
<a href="#"><u>long-billed curlew</u></a>	special concern
<a href="#"><u>peregrine falcon</u></a>	special concern
<a href="#"><u>rusty blackbird</u></a>	special concern
<a href="#"><u>sage thrasher</u></a>	endangered
<a href="#"><u>Great blue heron</u></a>	special concern
<a href="#"><u>Lewis's woodpecker</u></a>	<b>threatened: Vaseux-Bighorn NWA is one of the units in which critical habitat occurs; however, "The currently available data is insufficient to completely identify critical habitat in the Okanagan-Similkameen" (ECCC, 2017)</b>
<a href="#"><u>white-headed woodpecker</u></a>	endangered: insufficient information to define critical habitat in BC
<a href="#"><u>Williamson's sapsucker</u></a>	endangered: critical habitat in south Okanagan generally at higher elevations to east
<a href="#"><u>yellow-breasted chat</u></a>	<b>endangered: Breeding habitat in low-lying riparian zones." <i>Yellow-breasted Chats require dense thickets of shrubs within riparian areas for nesting, foraging, and escape cover</i>" (ECCC 2016). Detailed polygons within which critical habitat is found are present along ~50% of the Vaseux Lake shoreline (ECCC 2016, Figure AB3)</b>
<b><i>Mammals</i></b>	
<a href="#"><u>American badger</u></a>	endangered
<a href="#"><u>Nuttall's cottontail</u></a>	special concern
<a href="#"><u>pallid bat</u></a>	<b>threatened. Roosting and Foraging Critical Habitat has been identified within &lt;0.5 km of the shoreline especially for northwest Vaseux Lake</b>
<a href="#"><u>spotted bat</u></a>	special concern
<a href="#"><u>western harvest mouse</u></a>	special concern

Table 1 (continued)

SARA-listed Species	Notes
<b>Reptiles and Amphibians</b>	
<u>desert nightsnake</u>	<p>Endangered. Per COSEWIC Assessment Summary (2011), this species was designated as endangered, since: <i>“ Throughout its small Canadian distribution, expanding urban and agricultural developments and their associated infrastructures threaten habitats of the species. Scattered distribution pattern, small population size, and no possibility of rescue contribute to the vulnerability of the species and place it at imminent risk of extirpation.”</i></p> <p>Per the BC provincial Recovery Plan (2016)for the Desert Nightsnake (<i>Hygsglana chlorophaea</i>) in British Columbia, <b><i>“Human intrusions &amp; disturbance (threat impact Unknown)</i></b> <i>Impacts from activities such as hiking, off-road vehicle use, and mountain biking on Desert Nightsnake have not been researched. The scope is Restricted, owing to the species association with talus habitats and the severity of the impact is Unknown”</i></p>
<u>great basin spadefoot</u>	<p>Threatened. Require critical habitat for both aquatic breeding and terrestrial foraging, overwintering and refuge. <i>“...a band of 500 m of terrestrial habitat around breeding sites will encompass most movements of individuals and allow them to complete their life history functions.”</i></p> <p>Courtship, mating, egg laying; foraging and development occur in lakes, ponds, marshes, springs, sluggish streams, and seasonally wetted margins around permanent waterbodies. Core critical habitat has been identified primarily along the eastern shore of Vaseux Lake, although low sightings along or near the western shore may reflect the historical adverse influence of the KVR on habitat?</p>
<u>rubber boa</u>	special concern
<u>tiger salamander</u>	<p>Endangered: <i>“Adults and juveniles; neotenes; eggs; larvae may use lakes and permanent water bodies (with stationary or very slowly moving water as critical habitat, ideally with an absence of predatory fish.”</i></p> <p>Designated critical habitat for this species occurs in close proximity to the very northern and southern limits of Vaseux Lake</p>
<u>western painted turtle</u>	special concern
<u>western skink</u>	special concern: have been found in lacustrine escarpments. Not generally a riparian species
Western toad	special concern
<u>western yellow-bellied racer</u>	<p>threatened...may occupy lower elevation riparian areas within preferred biogeoclimatic zones (Ponderosa Pine).</p> <p>Greatest identified threat is transportation and service corridors</p>
<b>Arthropods</b>	
<u>Behr’s (Columbia) hairstreak</u>	endangered. Figures A2 and A3 of ECCC 2016 illustrate critical habitat around Vaseux Lake. Rely on presence of Antelope brush as the sole host plant for larvae
<u>monarch</u>	special concern

**Table 1 (continued)**

SARA-listed Species	Notes
<a href="#"><u>mormon metalmark</u></a>	endangered. Only one reported occurrence of this species at Vaseux Lake, in 1929
<b>Plants</b>	
<a href="#"><u>short-rayed alkali aster</u></a>	<p><b>Endangered: annual herb of lake shorelines present at only a few remaining sites in restricted habitats.</b></p> <p><b>“The small populations are subject to disruption from such activities as trampling, beach management, spread of invasive plants and potential development of a major facility at one of the primary sites”.</b></p> <p><b>“Short-rayed Alkali Aster has been reported from lakeshore habitats including sandy beaches (Osoyoos Lake), and from the lightly sloping draw-down zone of lakes and ponds (Vaseux Lake, Skaha Lake, Max Lake)”.</b></p> <p><b>In predominantly the Bunchgrass Biogeoclimatic Zone/ Critical habitat around Vaseux Lake occurs along northeast area, and further south along the eastern shore.</b></p>

\* descriptions in quotations were as provided in the COSEWIC Status Report, SARA Management Plan or SARA Recovery Strategy for the species of interest.

### Conclusions and Recommendations:

It is very clear that the level of assessment of potential at-risk species has not been sufficient to support planning and management of new activities and developments within the KVR South Spur Trail LSA (or larger regional study area). Recent evaluations have been at a desktop level (Gebauer 2020; EBB 2018) or of a very limited scope reconnaissance nature (EBB 2019), while the last in-depth, on the ground set of surveys were completed just over two decades ago by Dawe *et al.* (2004). The study of occurrences of listed plant species by McIntosh (2014) provides a useful addition to the record.

This is not a criticism of the studies completed by Gebauer (2020) and EBB (2018, 2019), which provide relevant information and key considerations for achieving the larger VBNWA objectives. Rather, these studies should be viewed as preliminary work that serves as building blocks for the design and execution of a detailed species, communities, and habitat evaluation.

An appropriately detailed ecological survey should have the following elements:

- Prior dialogue and joint planning with representatives from –
  - ECCC and CWS based on their responsibilities under SARA, the *Canada Wildlife Act* and *Migratory Birds Convention Act*,
  - Ministry of Forests based on responsibilities under the *Wildlife Act* and Canada-British Columbia Agreement on Species at Risk
  - regional government (Regional District of Okanagan Similkameen, RDOS)
  - regional and local stewardship and conservation groups, including the Vaseux Lake Stewardship Association
  - relevant knowledge holders including plant, invertebrate and vertebrate ecologists and ecosystem specialists, natural historians, *et cetera*

- Indigenous managers and knowledge holders of the Syilx Okanagan People, including Osoyoos Indian Band and Penticton Indian Band.

Such consultation and dialogue should lead to prior consensus on the objectives, scope (including extent and intensity of information), and priorities for the proposed studies.

- Detailed prior documentation and evaluation of the “*essential functions, biophysical features, and key attributes of core critical habitat*<sup>1</sup>” for all species of management interest, for all relevant life stages.

This pre-field assessment should define the minimum set of observational needs for applying existing and refined taxon-specific habitat suitability models where relevant for each species of management interest.

- Extensive new field ecological surveys, sufficient to provide insights about actual and potential habitat occupancy for –
  - Different life stages
  - Seasonal variations in the species distribution, including over-wintering (aestivation, torpor, hibernation, etc.)
  - Dispersal and connectivity
  - Breeding and rearing
  - Foraging
  - Other functions such as predator avoidance, thermoregulation, etc.

Such surveys will require decisions about the desired spatial scale of habitat mapping for each species, but as a minimum the spatial scale should be sufficient to support critical evaluation of and possibly mitigation of interactions associated with South Spur Trail development and use for all relevant biological species.

The time spent in the field to complete such studies, given the very large number of federally and provincially listed at-risk species, and other species of management interest (including invasive species) is expected to be appreciable.

- Due consideration of additional complementary next generation ecological survey methods such as targeted taxa environmental DNA (eDNA) surveys for increasing detection rates of cryptic and otherwise hard-to-detect taxa (e.g. for tiger salamander, great basin spadefoot, etc.) and community level metabarcoding eDNA studies.

Such eDNA studies should not be seen as an expedited alternative to more traditional ecological survey approaches for the biological species of interest, but rather being complementary to these as a means to –

- increase the spatial and intensity of observational efforts relative to routine time-constrained search methods, records of amphibian or bird calls, hibernaculum/den/nest surveys, etc.
- decrease reliance on the co-occurrence in space and time of the species of interest and the observer; and

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<sup>1</sup> These descriptors are routinely used in SARA species recovery plans.

- provide corroborative evidence for the presence or absence of important and critical habitat elements in the study area.
- Post-field interpretations of sufficient quality and depth to advance provincial and federal at-risk species assessments for the relevant portion of the south Okanagan for those species that have insufficient information at present.

This information is provided simply to assist you based on your interests in stewardship of the Vaseux Lake natural ecosystem, including its larger catchment. If you have any questions or wish to discuss further, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Doug A. Bright', with a long horizontal flourish extending to the right.

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