



Preserving Ecological and Genetic Diversity in the Elk Valley Corridor

A Proposal and Plan to Establish a Conservation
and Connectivity Corridor on the Western Slope
of the Elk Valley at Fernie, British Columbia

Elk Valley Regional Land Trust
May 2, 2024

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1.0 Overview

The Elk Valley is recognized as a globally important wildlife corridor, connecting the natural environment of the American Rockies with its Canadian counterpart. The City of Fernie is at the heart of this corridor. As a result of resource, residential, and recreational development, Fernie has experienced and will continue to experience substantial growth. This growth presents significant challenges to wildlife movement through the Valley. If these challenges are not addressed, the Valley will no longer fulfill its critical function as a movement corridor. Wildlife populations in the Valley, and elsewhere, will be seriously threatened.

The Elk Valley Regional Land Trust (the Trust) means to answer that challenge by proposing the establishment of a single, functionally unified conservation and connectivity zone on the Western Slope of the Valley, immediately adjacent to Fernie. To further develop the proposal, the Trust seeks to work collaboratively with Indigenous partners, the Crown, landowners, funders, and stakeholders. Specifically, at this stage, the Trust seeks Expressions of Interest from these and other parties wishing to participate in that collaborative process, all with a view to achieving specific objectives by September, 2025, as described at section 7.4 of this document.

2.0 Proposal Context

2.1 THE PROPONENT

The Elk Valley Regional Land Trust was established on October 15, 2019, to focus on conservation, connectivity, and sustainable use within the Elk Valley. Its mandate is to develop and execute workable proposals to establish conservation and connectivity corridors on the Eastern and Western Slopes of the Elk Valley around the Fernie area.

While great credit is due to large conservation groups, the fact is that they are national or regional organizations and so are required to prioritize their projects on a national or regional scale, as they should. The Land Trust is different. We live here. We see the needs of the Elk and surrounding valleys from a local perspective. That's our focus. It's not the focus of larger conservancies. More importantly, as we set out in this document, we see that meeting those local conservation and conductivity needs has important regional, national, and global implications.

The Trust is an incorporated not-for-profit society in good standing duly registered in British Columbia. It is an environmental charity registered under the Income Tax Act and has been designated as an Eligible Recipient under the Federal Ecological Gifts Program. The Trust is a member of the Land Trust Alliance of British Columbia and complies with the Canadian Land Trust Standards and Practices, 2019. The Trust enjoys broad support among conservation and user groups in the Elk Valley and includes representatives from both sectors as directors.

2.2 LOCATION OF THE PROPOSAL

The Elk Valley of Southeastern British Columbia is within Ktunaxa traditional territory known as Qukin ?Amak?is, or Raven's Land. It is a narrow mountain valley that extends 220 kilometers from Elko in the south to the Elk Lakes in the north.

Along with the neighbouring Flathead Valley, the Elk Valley safeguards one of the greatest assemblages of large mammal species in North America. Decades of research have highlighted the immense value of this landscape for transboundary wildlife populations.¹ The Flathead and Elk Valleys have been identified as internationally significant hotspots of climate change refugia, bird and tree refugia, forest and soil carbon sinks, and topographic diversity.

The most prominent ecological role of the Elk Valley is as a connectivity corridor.² It serves as a genetic bridge that links wildlife populations in the Rocky Mountains of the United States with those in Canada. This connection sustains healthy levels of genetic diversity.³

2.3 THE CONCERN

The last ten years have seen an increase in recreational and resource extraction activities within the Elk Valley. The combined impact of greater traffic volumes, expanding housing developments, increased recreation use, and expanding coal and forest extraction has the potential to profoundly influence habitat corridors in the region.⁴

A five-volume study of the cumulative effects of resource extraction, forestry and urbanization on the Elk Valley was published by the B.C. Government in 2018 and following. The study concluded that development in the Valley posed significant threats to wildlife habitat, and that those threats were very likely to increase over time.⁵

Historical experience in the Canmore area of the Eastern Bow Valley demonstrates that development across narrow mountain valleys, such as the Bow and Elk, creates a dam-like effect, resulting in habitat fragmentation and isolation of wildlife populations.⁶ Extensive high-angle clear cutting on the Eastern Slope of the Elk Valley and urbanization on the Western Slope will effectively cut the Valley in half on an east-west axis at Fernie.

Like Canmore, Fernie is or will soon become a chokepoint—a functionally impenetrable barrier across the Elk Valley that fragments habitat for species that depend on movement and interchange along and across the continental divide. As a result of this barrier, wildlife populations face significant challenges. Considering the cumulative effects of urbanization and resource extraction, the Trust sees the need to preserve and maintain connectivity corridors in and around Fernie as an ecological necessity.

2.4 THE PROPOSED SOLUTION

The Bow Valley experience teaches us the critical importance of establishing wildlife corridors and protected habitat near chokepoints. Wildlife corridors and habitat patches do not merely preserve functional wildlife habitat—they promote daily and seasonal movements of wildlife that prevent populations from becoming genetically isolated. Wildlife corridors that maintain sensitive ecological values, beyond simple linkage and connectivity, are especially important. That being so, the Trust conducted an inquiry to determine whether a connectivity and habitat corridor in the vicinity of Fernie would address the threats posed by urban, recreational, and resource development.

3.0 Environmental Considerations

3.1 TELEMETRY AND MOVEMENT STUDIES

The Trust retained Dr Clayton Lamb⁷ of the University of British Columbia to determine whether areas in the Elk Valley near Fernie continue to function as connectivity corridors notwithstanding present levels of development. Dr Lamb's report is reproduced as Appendix A. Telemetry studies and field observations support the conclusion that both the Eastern and Western Slopes of the Elk Valley are being used by wildlife as key corridors (Figure 1, below). The Trust's proposal with respect to the Eastern Slope is the subject of a separate process and document. This document focuses solely on the establishment of the Western Slope Corridor.

Dr. Lamb's study concluded:

1. The Elk Valley functions as a funnel for wildlife connectivity in the Rocky Mountains and is thus important at local, national, and international scales.
2. Wildlife connectivity in the Elk Valley substantially depends on the ability of wildlife to work their way around Fernie.
3. Conservation of the Western Slope as a functioning corridor is an important objective in maintaining regional north-south connectivity, as well as local connectivity.

Grizzly Bear Habitat Use Around Fernie, BC, Canada

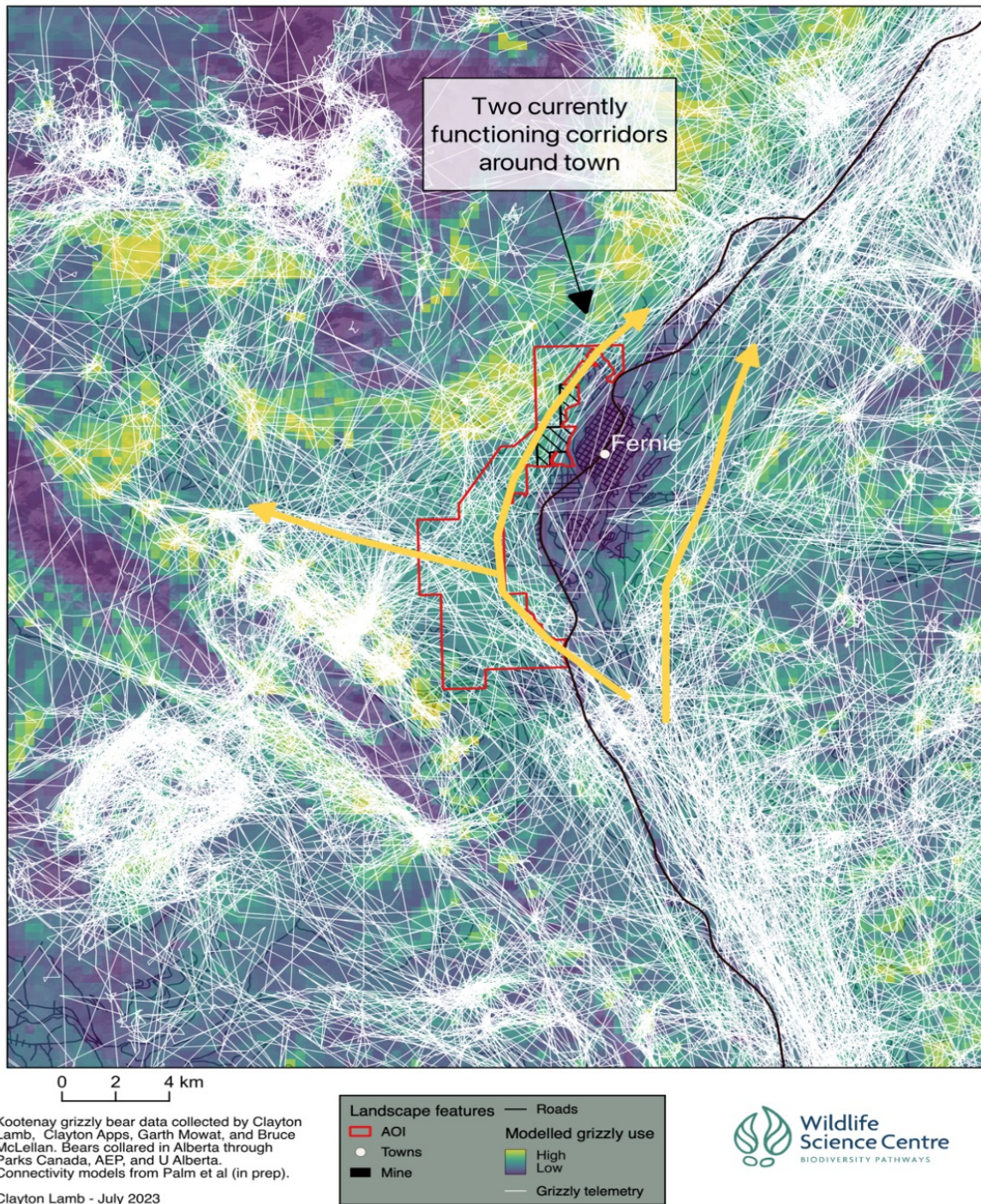


Figure 1. Telemetry Studies showing the movement of grizzly bears around the city of Fernie, B.C. Actual grizzly bear movements from GPS collar data are shown as white lines. Note that the distribution of collars is not random and thus areas of high and low use cannot be compared across large areas since bears were not collared everywhere.

3.2 CONSERVATION VALUES STUDY

The Trust also retained VAST Resources Solutions to conduct a Conservation Values Assessment for the Western Slope. The VAST Report is reproduced in Appendix B. The Report summarizes documented occurrences of conservation values. It finds that the proposed Western Slope corridor:

1. Provides important habitat for 22 sensitive species of both flora and fauna;
2. Falls within the Southern Rockies Grizzly Bear Population Unit, which includes areas of significant conservation concern;
3. Is situated within the occurrence range of the American badger and, subject to further investigation, may contain critical habitat areas;
4. Comprises parcels within the Ungulate Winter Range for moose, mountain goat, and mule deer; and
5. Comprises parcels potentially located within an Environmentally Sensitive Area (ESA) identified as an Old Growth Management Area.

3.3 CUMULATIVE EFFECTS

Additionally, the Trust retained Macdonald Hydrology Consultants to assess its proposal for a West Slope Corridor in the context of the B.C. cumulative effects study referenced in Section 2.3. Specifically, that analysis assessed the hazard to bear, aquatic ecosystems, and old forest valued components within the proposed corridor against known stressors, using the most recent data available. Macdonald Hydrology concluded that:

1. Hazard to grizzly bear is currently high across the Project Area except for that portion of Fairy Creek, where hazard is moderate.
2. These hazard levels suggest that although habitats are available they are less desirable because of anthropogenic development (roads and built-up areas).
3. Regulating access in the Project Area would improve the condition of these habitats.
4. Similarly, aquatic hazard is moderate for the whole Project Area, largely driven by relatively high road densities.
5. High road densities can result in sediment delivery to Fairy and Lizard creeks and can affect fish movement if fragmentation is occurring.
6. Less road use and potentially road closure would facilitate deactivation of roads and crossings that would promote healthy aquatic ecosystems.
7. The proposed corridor provides an excellent opportunity for conservation.

4.0 Mapping the Proposed Western Corridor

4.1 THE AREA OF INTEREST

Based on the information gathered from the Lamb and VAST reports, the Trust views the protection of the lands that constitute the Western Slope corridor as an ecological imperative. The Trust has identified an Area of Interest (AOI) of 950 hectares (about 9.5 km²) on the Western Slope (Figure 2). The proposed corridor stretches from the Fernie Alpine Resort and Island Lake watershed in the south to the Fairy Creek watershed in the north—a distance of approximately 7.5 kilometers. The exact borders of the proposed corridor will depend on the outcome from engagement with relevant parties.

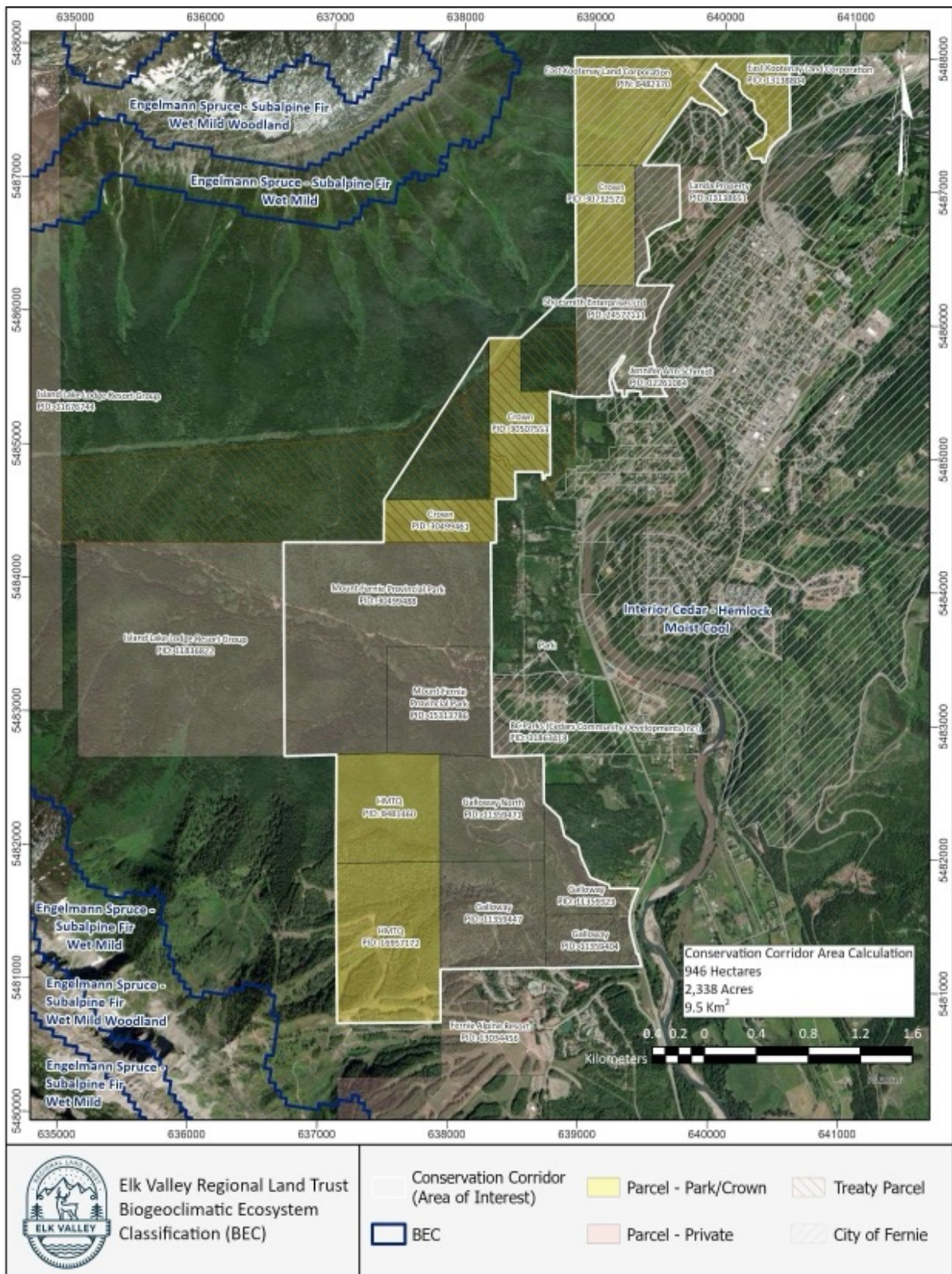


Figure 2. The Area of Interest (AOI) and corresponding land parcels of the proposed Western Slope corridor. Additional topographic mapping can be found in Appendix C.

4.2 ADJACENT PROPERTIES

As adjoining or adjacent lands, parcels to the north, south, and west of the Area of Interest obviously play important connectivity and conservation roles. Some of these parcels are privately owned. Others remain with the Crown. The Trust has an express interest in and will work with the owners of these parcels, as well as the Crown and the Ktunaxa Nation, to ensure that connectivity and conservation values are protected and maintained.

5.0 Benefits of the Western Slope Corridor

5.1 THE CORRIDOR WILL HELP PRESERVE NORTH-SOUTH CONNECTIVITY IN THE VALLEY

The boundaries of the corridor encompass the north-south movement pattern on the Western Slope of the Valley as identified by Dr Lamb. Establishing, maintaining, and effectively managing the corridor will help prevent bifurcation of the Elk Valley at Fernie and preserve the critical role that the Elk Valley serves in maintaining genetic diversity in the Rocky Mountains.

5.2 THE CORRIDOR WILL LINK EXISTING CONSERVANCIES AND WILDLANDS

In addition to providing north-south connectivity, the corridor will provide linkages to existing conservancies and wildlands. Specifically, the Western Slope corridor will provide a physical link between two largely pristine watersheds running west of the Elk Valley—the Island Lake Valley and the Fairy Creek Valley. The Island Lake Valley comprises a small provincial park (Mount Fernie) as well as a large private conservancy (Island Lake Lodge) which itself shelters some of the last great stands of old growth cedar in the valley. The Fairy Creek Valley contains a largely untouched mountain valley and wildlife habitat, resting between Mount Fernie and the pristine meadows and heights of Mount Proctor.

5.3 THE CORRIDOR WILL CONSERVE HABITAT FOR 22 SENSITIVE SPECIES

The VAST Report (Appendix B) establishes that the Western Slope corridor will provide important habitat for 22 sensitive species of both flora and fauna, including the American badger, grizzly bear, mountain goat, and Westslope Cutthroat Trout. The VAST Report also establishes that there are proven or likely in situ populations of 13 of these species and that the presence of 4 other species is possible.

5.4 THE CORRIDOR WILL CONSERVE HEALTHY, MIXED FORESTS

The Western Slope has a variety of different forest stand age classes ranging from 21 to 250 years old, with the majority of the forest stands being greater than 81 years old. The southern portion of the corridor contains the greatest abundance of both young and the oldest stand age class. Most of the forest stand within the Area of Interest (AOI) was at least 19.5 m tall, with heights ranging from 0–46.4 m.

As the VAST Report notes, vegetation resource inventory data (VRI) shows the area contains a mosaic of conifer and deciduous stands. Eight tree species are identified—consisting of black cottonwood, trembling aspen, western red cedar, interior Douglas-fir, western larch, lodgepole pine, Engelmann spruce, and spruce hybrid (mix of Engelmann spruce and white spruce).

5.5 THE CORRIDOR WILL SUPPORT SUSTAINABLE RECREATION

The proposed corridor is currently used for recreational purposes. Subject to its overriding concern for conservation, the Trust supports the use of lands for non-motorized and sustainable recreational pursuits. Where expert evidence establishes that a given use is not in the circumstances sustainable (i.e., it harms or unduly interferes with wildlife), then the use will be regulated, restricted, or prohibited as circumstances warrant. Subject to the Conservation Connectivity Management Plan, discussed below, the Trust does not anticipate substantial changes to the present level of recreational use.

5.6 THE CORRIDOR WILL PROVIDE AN OPPORTUNITY TO ADDRESS CUMULATIVE EFFECTS

The proposed corridor or will provide an opportunity to address the effects predicted in the Elk Valley Cumulative Effects Management Framework, the effects predicted in the MacDonald Study, and any additional cumulative effects identified by the Ktunaxa National Council.

5.7 THE CORRIDOR SUPPORTS THE B.C. BIODIVERSITY AND ECOSYSTEM HEALTH FRAMEWORK

The B.C. Biodiversity and Ecosystem Health Framework, presently in draft, reflects the government of British Columbia's commitment to prioritize the conservation and management of ecosystem health and diversity, including the conservation and recovery of species at risk, by encouraging individuals and organizations to conserve and manage ecosystem health and advance sustainable communities. Maintaining biodiversity at the interface of the urban and natural environments is exactly the objective of the proposed West Slope corridor.

5.8 THE CORRIDOR SUPPORTS ECOSYSTEM BASED MANAGEMENT

The B.C. Biodiversity and Ecosystem Health Framework also commits to ecosystem-based management. Ecosystem based management is an environmental management approach that recognizes the full array of interactions within an ecosystem, including humans, rather than considering single issues, species, or ecosystem services in isolation.

As set out in Sections 7.2 and 7.3, the Trust will manage lands that it acquires within proposed corridor in accord

with a Conservation and Connectivity Management Plan. In respect of lands that it cannot acquire, the Trust proposes to enter Conservation and Connectivity Cooperation Agreements. Both the Management Plan and the Conservation Agreements are examples of and will reflect ecosystem-based management principles.

5.9 THE CORRIDOR WILL SUPPORT HIGHWAY RISK MITIGATION

Plans proposed by various agencies to mitigate the risk to wildlife by Highway 3 have specifically identified the southern portion of the proposed corridor as having high scores for regional and local conservation significance.⁸ These plans propose that risk mitigation techniques be introduced to reduce mortality and improve wildlife movement in that area. The proposed corridor will provide “safe space” for wildlife crossing at that point.

5.10 THE CORRIDOR WILL SUPPORT CLIMATE CHANGE RESILIENCY

The proposed corridor consists of approximately 948 hectares, almost all of which is forest. The preservation of that forest, rather than its destruction for development, contributes to climate change resiliency. The Trust is advised that, over a 25-year period, a forest carbon project at this site has the potential to sequester 37,500 to 67,500 tonnes of CO_{2e}, which is the equivalent of 8,750 to 16,500 Canadian homes powered for 1 year.

5.11 ADJOINING CROWN LANDS WILL AMPLIFY THE IMPACT OF THE CORRIDOR

The area west of the central portion of the Western Slope corridor is comprised of Crown lands of increasing elevation. Although they have substantial ecological value, they cannot themselves constitute a primary wildlife corridor due to the steepness of terrain. That said, these Crown lands will backstop and amplify the connectivity of the corridor as a whole.

6.0 Parcels, Lands, and Interests

6.1 PARCEL OWNERS

The Western Slope consists of 16 individual parcels, or parts of parcels (or undivided Crown Lands), encompassing a mixture of private, public, Crown and First Nations tenures. Table 1 identifies each of the owners of each of the properties within the AOI, the size of the property (if presently known), the legal interest preferred to be obtained by the Trust, and the publicly disclosed asking price.

Table 1: Detailed summary of the properties within the Area of Interest.

PID	OWNER	PROPERTY SIZE	PRESENT ZONING	INTEREST SOUGHT	PRICE IF ON OFFER
013138804	EK Land	228 acres total	Rural residential, rural resource; medium density residential	Ownership	\$7.7 M
8482370	EK Land			Ownership	
030732573	Crown			Agreement	N/A
CROWN1	Crown		Rural Residential - Rural Resource	Agreement	N/A
024577111	Shoesmith	149 acres	Rural Residential	Ownership	\$5.3 M (Assessed not Market Value)
012261084	Schmidt		Agricultural Zone; Low Density Residential	Agreement	N/A
030507553	Crown		Rural Residential - Rural Resource	Agreement	N/A
CROWN2	Crown		Rural Residential - Rural Resource	Agreement	N/A
030499461	Crown		Rural Residential - Rural Resource	Agreement	N/A
0304994488	B.C. Parks	640 acres	Rural Residential - Rural Resource	Agreement	N/A
015313786	B.C. Parks		Rural Residential - Rural Resource	Agreement	N/A
8481460	Crown		Commercial - Resort Commercial	Agreement	N/A
016957172	Crown		Commercial - Resort Commercial	Agreement	N/A

PID	OWNER	PROPERTY SIZE	PRESENT ZONING	INTEREST SOUGHT	PRICE IF ON OFFER
011359471	Nelson	450 acres	Institutional - Resort Open Space, Recreation and Trails; Residential - Single Residential	Agreement or Covenant	N/A
011359447	Nelson				N/A
011359323	Nelson				N/A
011359404	Nelson				N/A

6.2 IMPACT OF DEVELOPMENT

There are six primary landowners within the AOI: EK Lands Corporation, Shoesmith Enterprises, Schmidt, the Crown, B.C. Parks, and the Nelson Family, who own the Galloway Lands. The current and intended use of these lands vary but many anticipate future development.

- The EK Lands are located on both sides of Fairy Creek. They are being actively marketed by the present owner for development as a subdivision containing up to 84 multistate units and 109 single family lots. As it presently stands, the lands are undeveloped.
- The Shoesmith lands are also being actively marketed as acreages. The Shoesmith lands include the last available access point to the Elk River for wildlife.
- The Galloway lands are under contract to Handshake Holdings which has recently obtained approval for the development of 200 acres of the 450-acre holding. As a condition of development approval, about 250 acres is required to be transferred to a (yet unnamed) conservation organization.

The development of the Galloway lands, as well as proposed developments in the EK lands and Shoesmith lands, provides ample illustration of the immediacy of the need to preserve a working wildlife corridor on the Western Slope.

Proposed development of large tracts of land on the West Slope will substantially compromise or destroy the existing wildlife corridor by turning the chokepoint at Fernie into an impenetrable barrier. Figure 3 depicts those parcels within the proposed corridor that are presently sought to be developed. The Trust has prioritized the parcels at the north end of the corridor (in red) for acquisition.

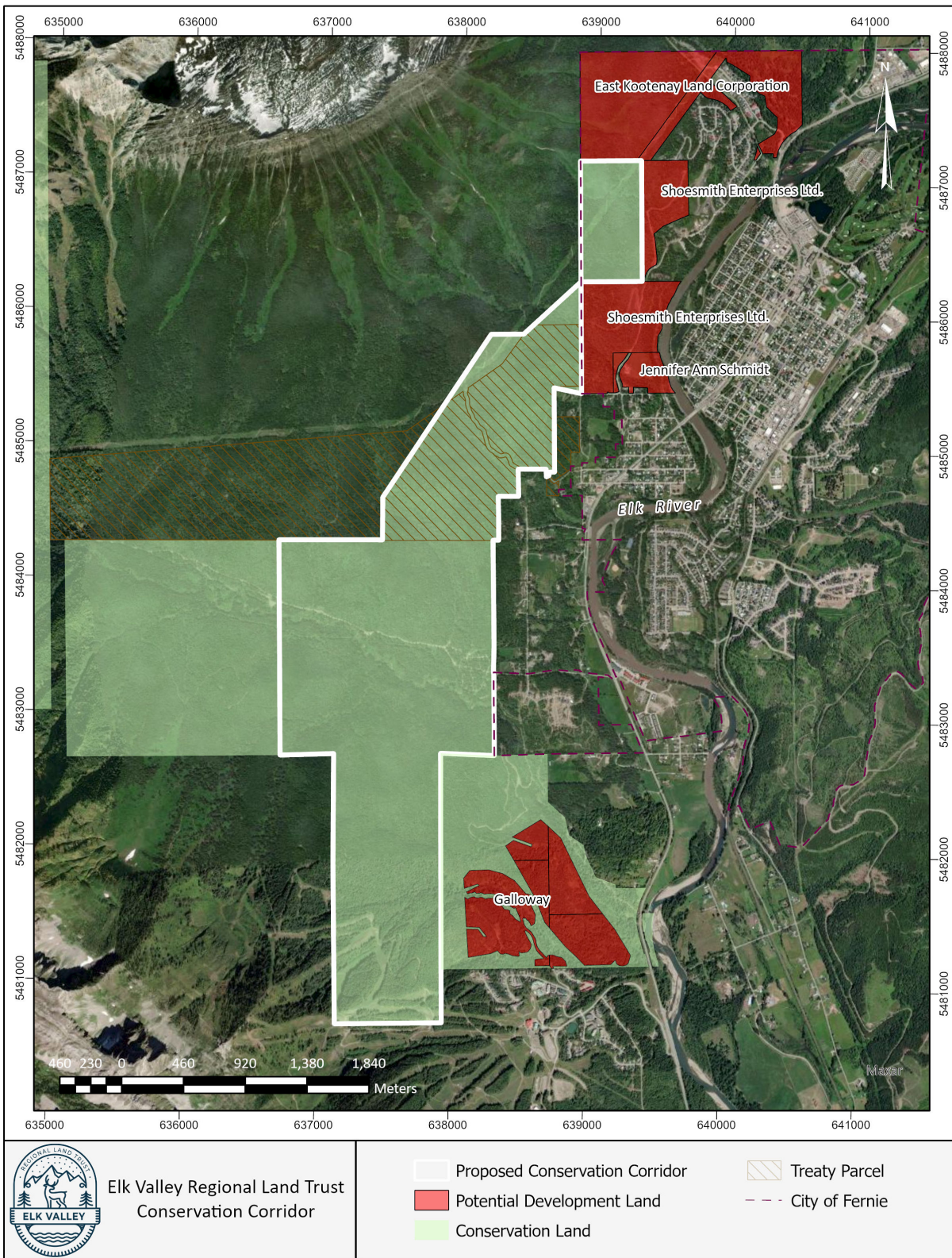


Figure 3. Proposed development (in red) in relation to the proposed Western Slope corridor (green).

A substantial portion of the proposed corridor are Crown lands. Some of these are divided parcels while others are undivided parcels. Some of these are the subject of licenses and permits. The Trust has identified these and considers the license and permit holders to be stakeholders with whom it wishes to collaborate.

6.3 INDIGENOUS LANDS AND ENGAGEMENT

As noted, the whole of the corridor falls within Ktunaxa's traditional territory known as Qukin ?Amak?is. Additionally, one parcel is identified as a Ktunaxa treaty parcel. The treaty negotiations are currently in Stage 5 of the British Columbia treaty process. (See Map in Appendix C). The Trust is specifically committed to working with the Ktunaxa Nation to further develop and execute this proposal in a way that meets the needs and expectations of all parties. The Trust and the Ktunaxa National Council are engaged in ongoing consultations and dialogue.

7.0 Execution Strategy

7.1 ACQUIRING THE NECESSARY RIGHTS

The Trust proposes to establish the Western Slope corridor as a single, functionally unified conservation and connectivity zone. To achieve this goal, the Trust aims to:

- Liaise directly with all relevant parties.
- Seek capital funding of up to \$15 million for the acquisition of properties by purchase.
- Purchase identified properties within the AOI if it reasonably can.
- Acquire long term leases or covenants in properties it cannot acquire by purchase.
- Negotiate Conservation and Connectivity Cooperation Agreements (CCCA's) with owners of properties that it cannot purchase, lease, or covenant.
- Administer the lands it owns or leases in accordance with a detailed Conservation and Corridor Management Plan (CCMP).
- Secure operational funding of up to \$80K per year from public sources for the administration of the properties pursuant to the CCMP, in perpetuity.

7.2 CONSERVATION AND CONNECTIVITY MANAGEMENT PLAN

A Conservation and Connectivity Management Plan (CCMP) is an ecosystem-based management plan adopted to establish:

1. Standards for wildlife corridor and habitat patch design and management including size, topography, cover, and vegetation characteristics;

2. Guidelines that identify a consistent set of best practices for the Trust and owners to apply when dealing with human use activities within and adjacent to habitat patches; and
3. Guidelines and best practices for proposed and existing activities that will identify compatible uses within and adjacent to wildlife corridors and habitat patches, as well as measures to lessen their impacts on the viability of wildlife corridors and habitat patches.

It is intended that the CCMP will be prepared by experts retained by the Trust after consultation with property owners, Indigenous Peoples, and other parties and stakeholders, and that the CCMP will reflect:

1. The conservation values identified in the VAST Report and by the Ktunaxa Nation;
2. The Trust's conservation, connectivity, and sustainable use priorities; and
3. The conservation, connectivity, and sustainable use objectives of property owners within and adjacent to the corridor.

7.3 CONSERVATION AND CONNECTIVITY COOPERATION AGREEMENTS

A Conservation and Connectivity Cooperation Agreement is a legal agreement intended to ensure that wildlife conservation polices that traverse or address habitats across legal boundaries employ reasonably consistent ecosystem-based management principles. Ordinarily, a CCCA is a bilateral or multilateral agreement between two or more property owners in which the parties make reciprocal conservation commitments. Commitments may vary based on the parties and the circumstances. A CCCA may, for example, include commitments obliging owners to:

1. Adopt a given set of guidelines to inform their individual conservation practices in respect of their properties; or
2. Apply an agreed upon set of rules in establishing conservation practices in respect of their properties; or
3. Undertake or abstain from undertaking certain acts or performing certain works on their respective properties.

A CCCA is a voluntary agreement. Unlike a covenant it is not necessarily registerable on title and does not bind a future owner. A CCCA has a defined term, and it may or may not be renewable.

7.4 SCHEDULE AND EXECUTION TIMELINES

The Trust views this project as a land assembly. Assembling the necessary rights and agreements will acquire a period of years. That being said, the Trust hopes to have the following by December 31, 2024:

1. Expressions of Interest (non-binding) from private donors and foundations;
2. Draft Agreements of Purchase and Sale (non-binding) with EK Lands and Shoemith Enterprises;
3. Expressions of Interest (non-binding) from each of the City of Fernie and RDEK;
4. An Agreement with other conservation organizations in the Fernie Area as to the composition and nature

of a Local Conservation Fund, and the appointment of an intermediary to liaise with the City of Fernie and RDEK in that regard;

5. Resolutions from each of the City of Fernie and RDEK instructing staff to liaise with an intermediary and to report and make recommendations on establishing a Local or Regional Conservation Fund, or otherwise;
6. Draft Covenants or Conservation and Connectivity Cooperation Agreement, as may be appropriate, with B.C. Parks, the B.C. Parks Foundation, The Crown in Right of British Columbia, and The Ktunaxa National Council; and
7. A draft CCMP, prepared by the Trust and broadly acceptable to all stakeholders.

The Trust seeks the following by September 1, 2025, if not earlier:

1. Binding commitments of support from private donors and foundations;
2. Binding Agreements of Purchase and Sale with EK Lands and Shoesmith Enterprises;
3. Operational funding commitments from the City of Fernie and RDEK;
4. Binding Covenant Agreements; and
5. Binding Conservation and Connectivity Cooperation Agreements with B.C. Parks, the B.C. Parks Foundation, The Crown in Right of British Columbia, and The Ktunaxa National Council.

Endnotes

- 1 Lamb, C.T. (2023) *Assessment of Connectivity Potential Along the Western EVRLT Corridor and Potential for the Shoemith and EK Lands Properties to Contribute to the Corridor*. (Appended)
- 2 Nature Conservancy Canada. (Accessed online 2023) *Elk Valley Heritage Conservation Area*. <https://www.natureconservancy.ca/en/where-we-work/british-columbia/featured-projects/elk-flathead/elk-valley-heritage.html>
- 3 Stetski, W. (2021) *Conservation Options for the Elk and Flathead Valleys*. Page 10: <https://ecoreserves.bc.ca/wp-content/uploads/Elk-Flathead-Stetski-FINAL.pdf>
- 4 Lamb, C.T. (2023) *Assessment of Connectivity Potential Along the Western EVRLT Corridor and Potential for the Shoemith and EK Lands Properties to Contribute to the Corridor*. (Appended)
- 5 Elk Valley Cumulative Effects Management Framework (EV-CEMF) Working Group. (2018) *Elk Valley Cumulative Effects Assessment and Management Report*. Page IV and following: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/final_elk_valley_ceam_12122018.pdf
- 6 The Bow Corridor Ecosystem Advisory Group. (2012) *Wildlife Corridor and Habitat Patch Guidelines for the Bow Valley*. Page 1: https://conservationcorridor.org/cpb/Bow_Corridor_Ecosystem_Advisory_Group_2012.pdf
- 7 The Bow Corridor Ecosystem Advisory Group. (2012) *Wildlife Corridor and Habitat Patch Guidelines for the Bow Valley*. Page 1: https://conservationcorridor.org/cpb/Bow_Corridor_Ecosystem_Advisory_Group_2012.pdf
- 8 Clevenger, A., Apps C., Lee, T., Quinn M., Poulton, D., Ament, R. (2010) *Highway 3: Transportation Mitigation for Wildlife and Connectivity in the Crown of the Continent Ecosystem*. https://www.rockies.ca/files/reports/H3%20Final%20Report%200607_June8.pdf

Appendix A

Assessment of connectivity potential along the western EVRLT corridor and potential for the Shoesmith and EK Lands properties to contribute to the corridor

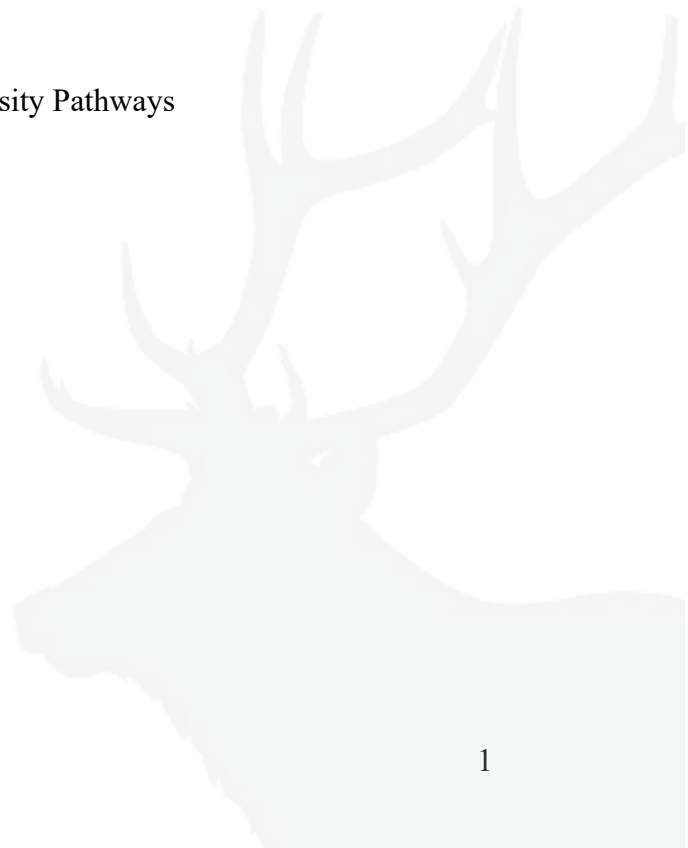
22 April, 2024

Prepared for: Elk Valley Region Land Trust

Prepared by:

Clayton Lamb, PhD

Wildlife Science Center, Biodiversity Pathways



Request

The Elk Valley Regional Land Trust has requested:

1. A note speaking to the connectivity values that could be / would be served by securing ownership of or non development covenants in respect to a defined Area of Interest (AOI) on the Western Slope of the Elk Valley.
2. Indicating, if it is possible, those portions of the AOI that have the highest conservation values, whether as a corridor or otherwise.

1. Conservation Values

The Flathead and Elk Valleys of southeast British Columbia currently safeguard one of the greatest assemblages of large mammal species in North America (Laliberte and Ripple 2004, Dirzo et al. 2014, Wolf and Ripple 2017). Decades of research has highlighted the immense value of this landscape for transboundary wildlife populations, and the potential challenges as human impacts intensify (Apps and Wildlife Conservation Society Canada 2007, Proctor et al. 2012, McLellan 2015, Poole et al. 2016, Benz et al. 2016, Mowat et al. 2020, Lamb et al. 2020, 2023, Poole and Lamb 2022, Palm et al. 2023, 2024) (Figure 1). While there is growing appreciation of the lifestyle and resource extraction opportunities on this landscape, the combined impact of expanding housing developments, increased traffic volumes and recreation use, and expanding coal and timber extraction have the potential to profoundly influence the shared wildlife and habitat corridors in the region.

Located in the center of a connectivity “pinch point” where the continental Rocky Mountain corridor narrows to 70 km wide, the Elk Valley forms a critical wildlife corridor of local and international significance (Apps and Wildlife Conservation Society Canada 2007, Palm et al. 2023, 2024). With protected areas and largely undeveloped provincial lands to the north (Banff and Kootenay National Parks, Kananaskis Provincial Park, and Bull River drainage) and south (Akamina-Kishinana Provincial Park, Glacier and Waterton National Parks. And Flathead Valley), the Elk Valley is nestled in a wilderness setting. It is, however, facing rapid development which will challenge local wildlife populations, and may fracture connectivity between the tracts of secure habitat on either side of the valley. Currently, the Elk Valley is functioning as north-south corridor for many dispersing large mammals such as elk, wolves, and grizzly bear, and an east-west corridor for elk. The degree to which the Elk Valley can be kept intact and functioning as a wildlife corridor will influence the future of wildlife populations within and well beyond the valley, including across the border in Montana and Idaho.

Here we focus on the lower Elk Valley around the city of Fernie. This landscape is the focus of the Elk Valley Regional Land Trust’s (EVRLT) efforts to secure land for conservation. Previous work outlined an eastern corridor in the EVRLT Conservation Plan, but land securement on the east side has proven challenging. A second corridor, the western EVRLT corridor (AOI), is now a potential focus and scoping is currently underway (Figure 2).

For connectivity to work across large extents, animals must also be connected at finer scales. A pinch point in one area can reduce connectivity in all directions. As developments expand in the Elk Valley, wildlife will increasingly be pushed into smaller and smaller corridors. At some point connectivity will be severely impeded. The ideal movement corridor in the Elk Valley is likely in the valley bottom itself, which is where the towns of Fernie, Hosmer,

Sparwood, and Elkford are also placed, as well as rural expansion between these areas. As the development footprint expands or intensifies, animals increasingly will be pushed further up slope, limiting connectivity in the valley. In this way, even small corridors at a continental scale, such as those around Fernie, Sparwood, or Elkford, have knock on effects in how, and whether animals can move through this area and keep populations connected at much larger extents.

Telemetry studies provide direct evidence of animal movement in real time and over time. Grizzly bear telemetry is especially valuable. Grizzly bears are an “umbrella species “. Umbrella species often have large home ranges and need to use multiple habitats within a year, so they overlap (or “co-occur” to scientists) with many other species in the same landscape. Ensuring that umbrella species have what they need to survive benefits other (often overlooked) species with smaller individual home ranges or more specific habitat needs, such as amphibians and rodents. Grizzly bear movement can be indicative of movement patterns of other species. Where bears can and do move, so many move other species. While more detailed connectivity studies can be undertaken in respect of given species if required, this study relies on grizzly bear telemetry.

On average, grizzly bears strongly avoid cities (Lamb et al. 2020, Palm et al. 2024). There are exceptions and it is well known that bears do venture into town but at the population level there is strong avoidance and the bears that do not avoid town usually end up being killed (Lamb et al. 2023). Given the location of Fernie in the center of the valley and the imperative to keep wildlife connected within this important corridor, bears need to go around Fernie. Currently, there are two functioning corridors around town that bears are using (Figure 2). The eastern corridor crosses Coal Creek and the western corridor (the AOI) is at the base of Mount

Fernie and crosses Lizard and Fairy Creeks (Figure 3). A corridor up Lizard creek and over into Iron Creek splits off the western corridor.

In Figure 4 I offer my opinion, based on telemetry and field observations, as to the scope of the Western Slope corridor in practice. It overlaps, in large part, with the corridor ought to be established. As is apparent, if it is an objective to have the “legal” corridor better match the corridor as used, I would suggest that the legal boundaries might be drawn more tightly in the south and, correlatively might be expanded somewhat to the west and north. Subject to those suggestions, the “legal” corridor and the actual corridor are largely congruent.

I note as well that the Shoemith and EK Lands properties specifically can contribute to the overall western corridor, but only to the extent that they remain substantially undeveloped and are connected to each other and the surrounding corridor (Figure 4).. Overall, a corridor is only as good as its most constrained area. For example, if all the properties are secured except one, and that one is fully developed and severs the corridor, the overall effectiveness of the entire corridor diminishes. Development within and near the corridor must be carefully considered because it’s not only the footprint of the developments that matters, it’s the diffuse impacts that extend beyond the footprint, often hundreds of meters that can functionally narrow corridors (Ford et al. 2020).

In summary, in my opinion:

1. The Elk Valley is an internationally significant wildlife corridor.
2. Wildlife connectivity in the Elk Valley substantially depends on the ability of wildlife to work their way around Fernie, and the cities upriver of it (Hosmer, Sparwood, and Elkford).

3. The Western Slope Corridor is used by wildlife for that purpose. It is a functioning Corridor.
4. Conserving that Western Slope Corridor is an important objective in maintaining regional north – south connectivity, as well as local connectivity.
5. The “legal” corridor as proposed by EVRLT is largely commensurate with the working corridor, as long as development within the corridor is limited and the effective corridor width is not substantially reduced (Ford et al. 2020).
6. Where circumstances permit it may be advisable to slightly redraw the AOI, as I have suggested.

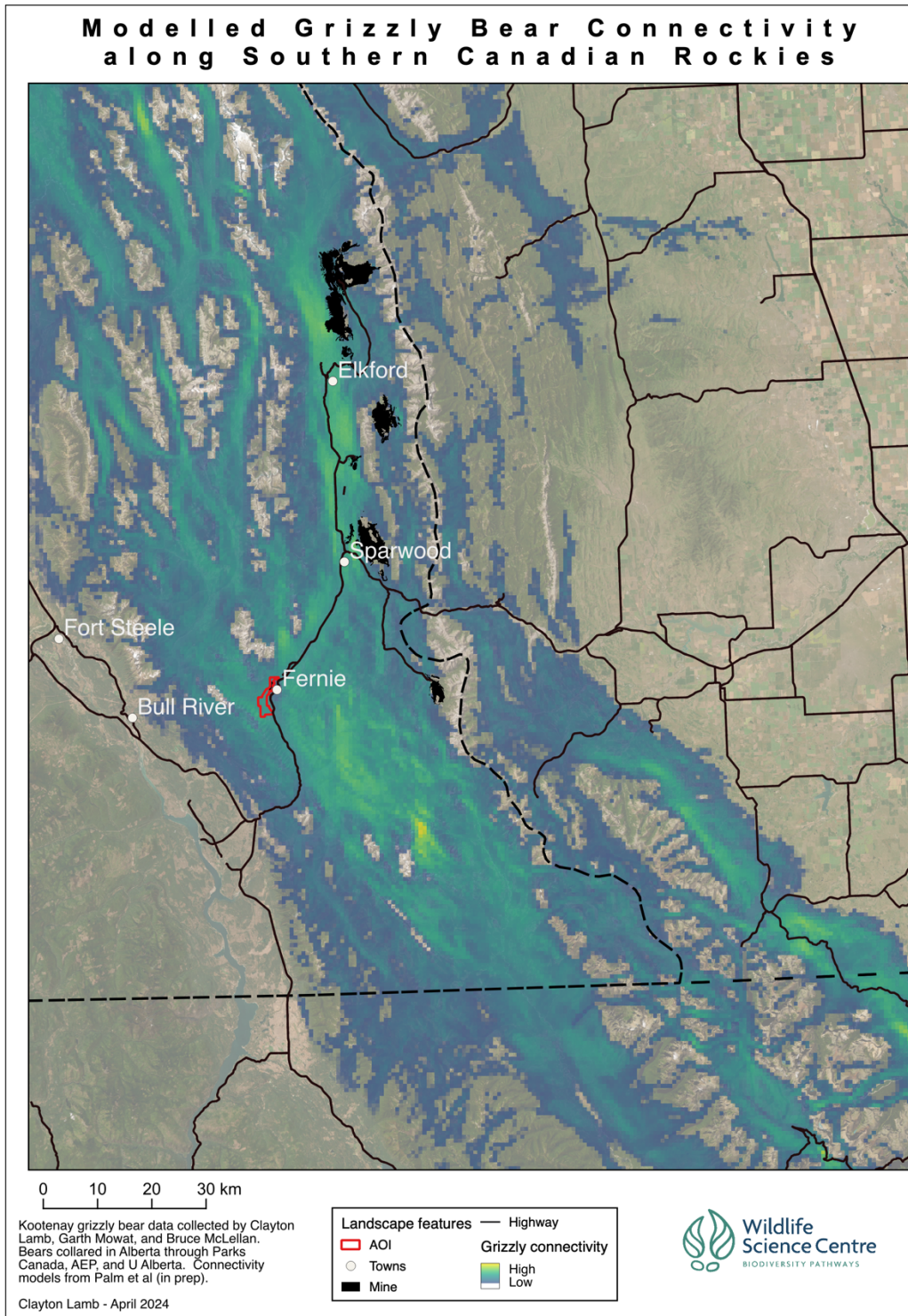


Figure 1. Predicted grizzly bear connectivity along the southern Canadian Rocky Mountains from Palm et al. (in prep). The Elk Valley forms a critical grizzly bear corridor with significance at local and international scales.

Grizzly Bear Habitat Use Around Ferne, BC, Canada

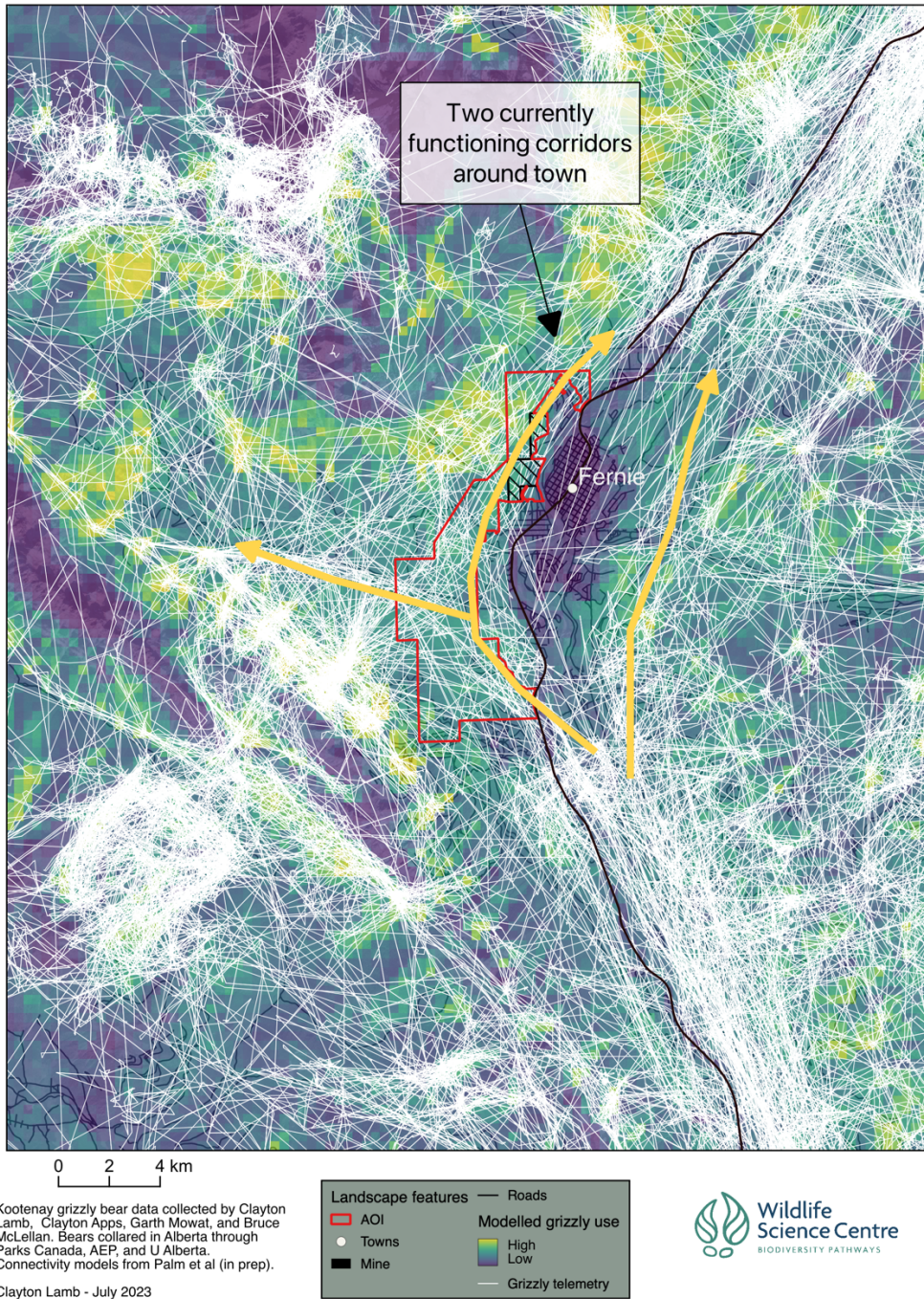


Figure 2. Grizzly bear movement corridors around Fernie, BC. Actual grizzly bear movements from GPS collars shown as white lines. Note that the distribution of collars is not random and thus areas of high and low use can not be compared across large areas because we did not collar bears everywhere. Modelled grizzly bear utilization distribution from Palm et al. (in prep) shown underneath to give a sense of movement and habitat potential across the landscape.

Grizzly Bear Habitat Use Along EVRLT Western Corridor

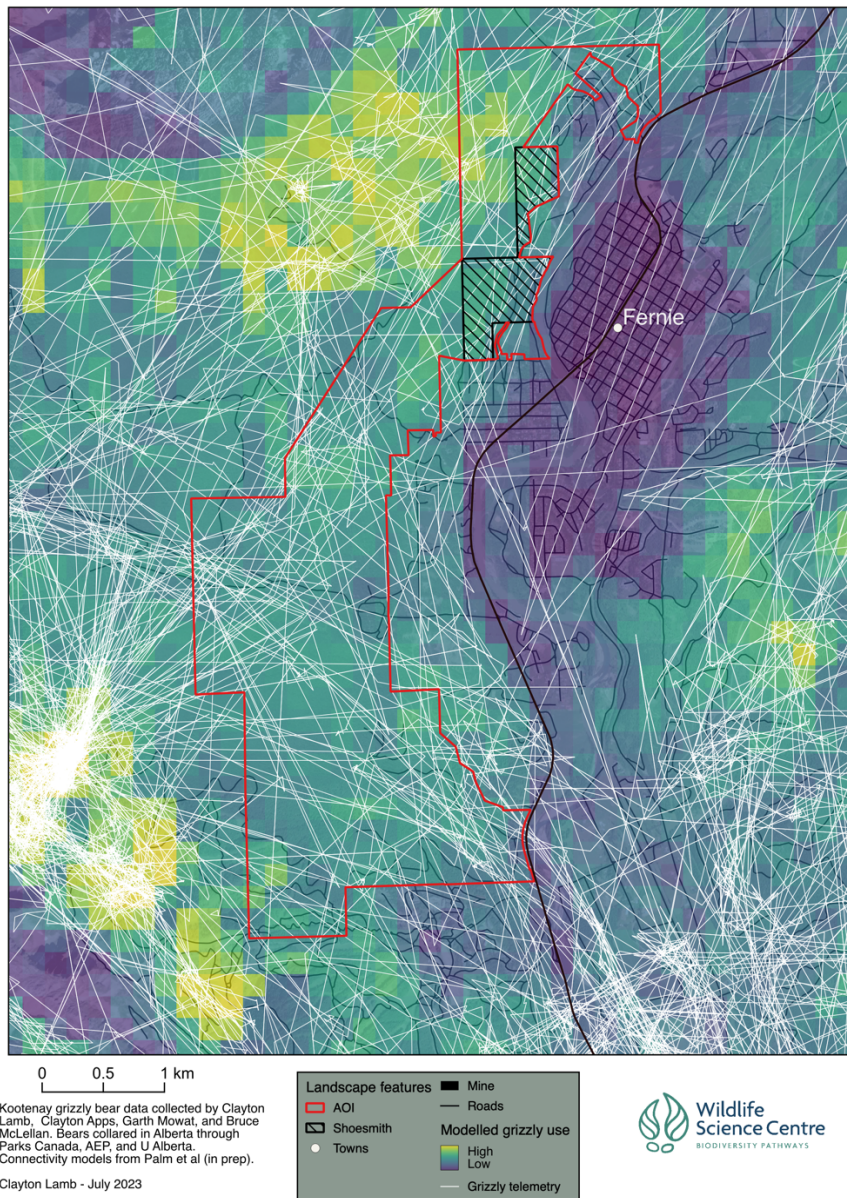


Figure 3. Grizzly bear movement around the west side of Fernie, BC with EVRLT western corridor (AOI) shown in red. Actual grizzly bear movements from GPS collars shown as white lines. Note that the distribution of collars is not random and thus areas of high and low use can not be compared across large areas because we did not collar bears everywhere. Modelled grizzly bear utilization distribution from Palm et al. (in prep) shown underneath to give a sense of movement and habitat potential across the landscape.

EVRLT Western Corridor

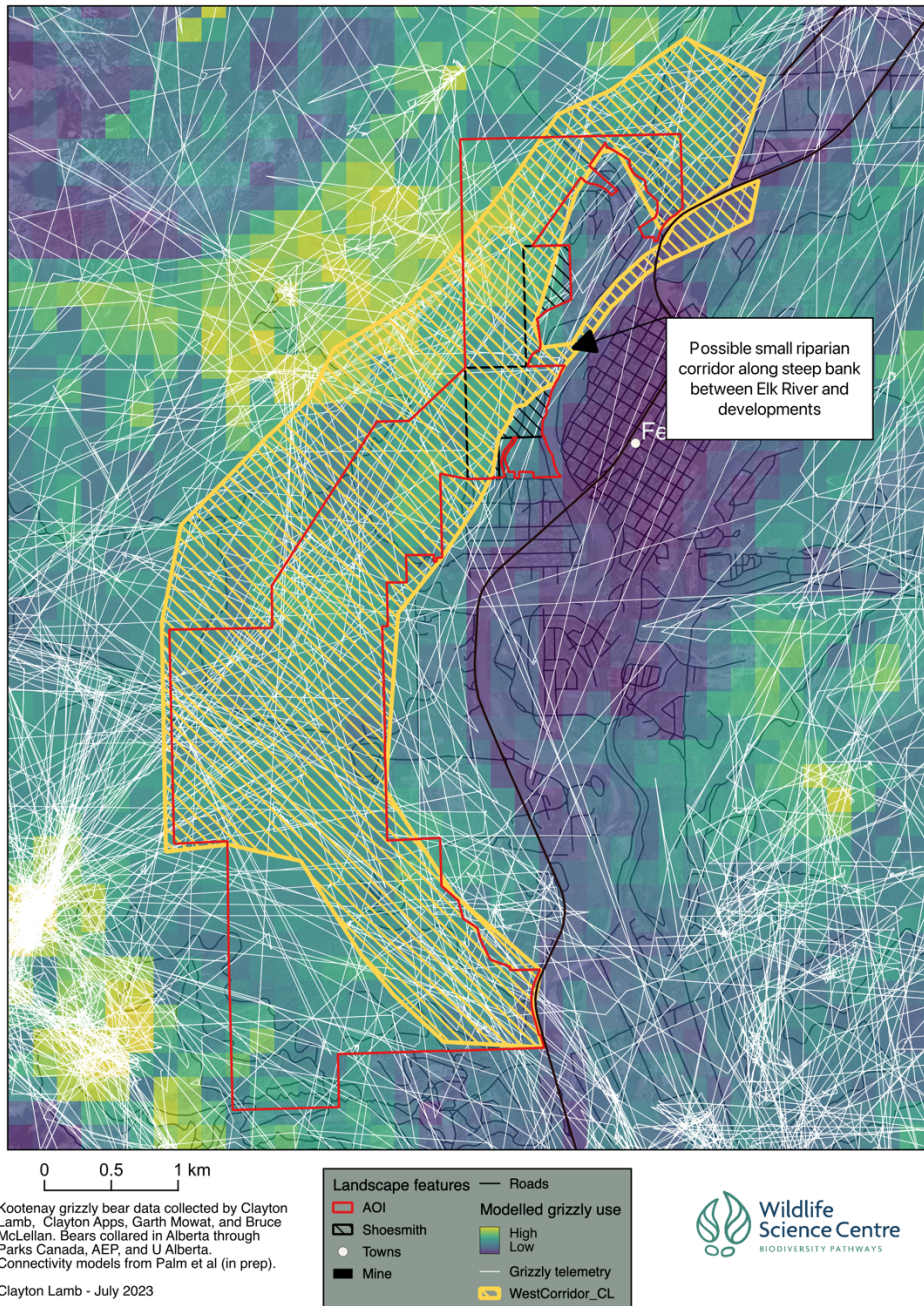


Figure 4. Grizzly bear movement around the west side of Fernie, BC with EVRLT western corridor (AOI) shown in red, and expert opinion corridor shown in yellow. Shoesmith property shown in black. Actual grizzly bear movements from GPS collars shown as white lines. Note that the distribution of collars is not random and thus areas of high and low use can not be compared across large areas because we did not collar bears everywhere. Modelled grizzly bear utilization distribution from Palm et al. (in prep) shown underneath to give a sense of movement and habitat potential across the landscape.

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END DOCUMENT

Appendix B



CONSERVATION VALUES ASSESSMENT

West Fernie

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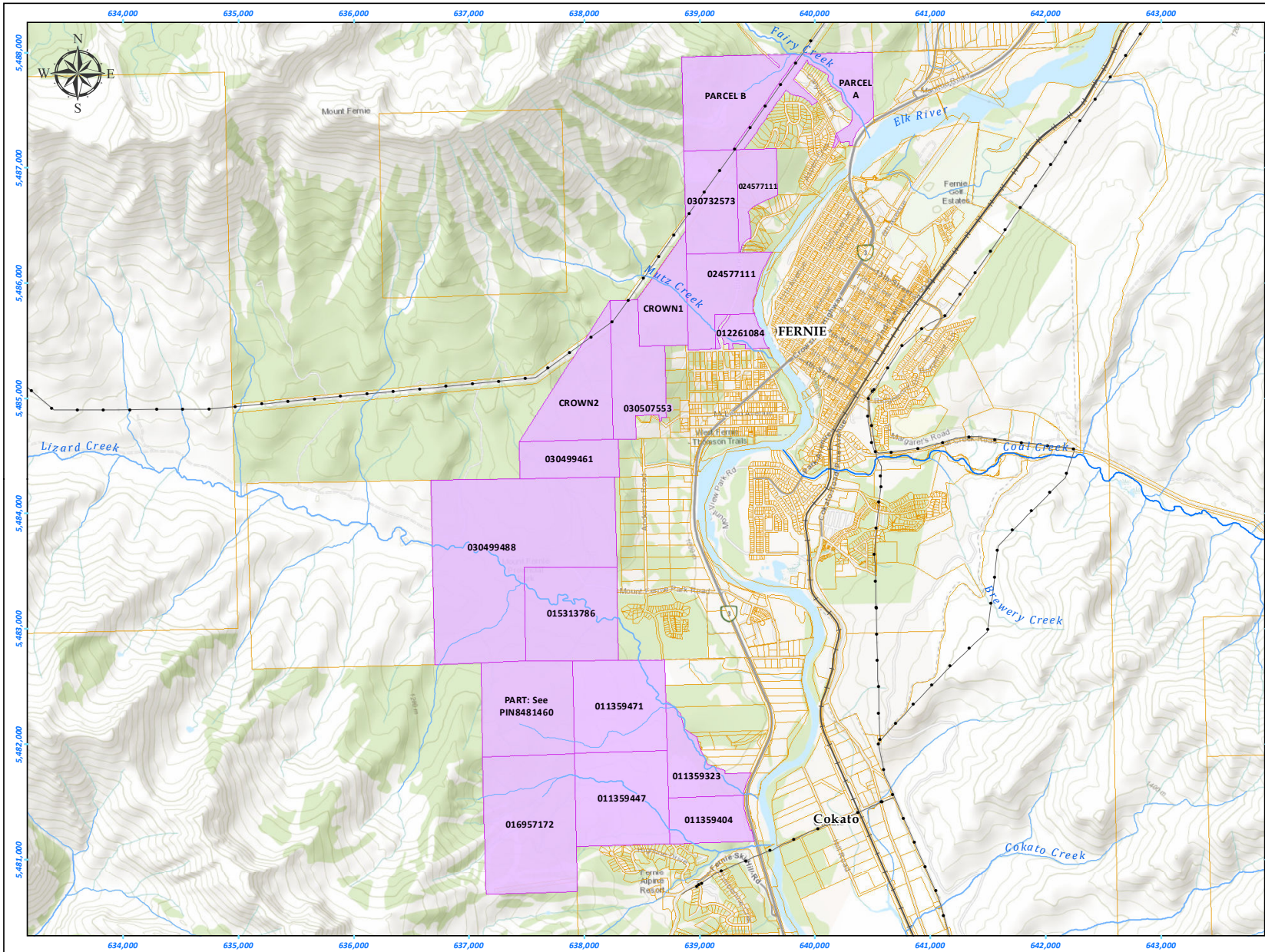
1.0 INTRODUCTION

The Elk Valley Land Trust (EVLTL) is interested in learning about potential conservation values within a series of land parcels located on the west side of Fernie, British Columbia (Figure 1). The purpose is to help determine whether or not any of the land parcels meet requirements for potential conservation status. EVLTL retained VAST Resource Solutions (VAST) to complete a desktop exercise to summarize documented occurrences of conservation values such as Species and Ecosystems at Risk (SEAR; provincial or federal), approved and proposed Wildlife Habitat Areas (WHAs), known wildlife habitat features (e.g., wildlife trees, burrows/dens, and mineral licks), ungulate winter range (UWR), Old Growth Management Areas (OGMA), and identified critical habitat for Species at Risk. This report provides a summary of the conservation values known to occur within the West Fernie area and the different habitat types and forest stand structures present.

2.0 ASSESSMENT AREA

The assessment area consists of a series of land parcels located on the west side of Fernie, BC and extends from Fairy Creek in the north down to Fernie Alpine Resort in the south (Figure 1; herein referred to as the West Fernie Assessment Area). The West Fernie Assessment Area is about 928 hectares (ha) in size.

The assessment area is located within the “Elk Moist Cool Interior Cedar – Hemlock” (ICHmk4) biogeoclimatic (BEC) zone which is found from the valley bottom up to 1650 meters (m) (MacKillop et al. 2018). Moist forests within this BEC zone are dominated by Englemann x white spruce (*Picea engelmannii x glauca*) and western red cedar (*Thuja plicata*; MacKillop et al. 2018). The prevailing conditions in this ecosystem (which is maintained by periodic fires) tend to be consistently moist (MacKillop et al. 2018).



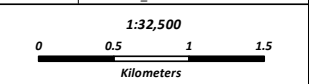
PROJECT
Elk Valley Land Trust

TITLE
Figure 1 – Study Area

LEGEND
 EVLT Parcel - Area of Interest
 Parcel Fabric BC

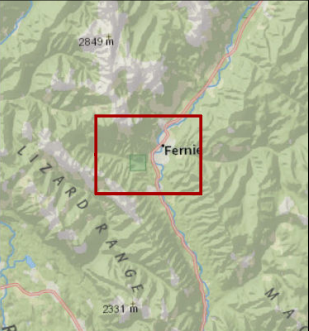
MAP INFORMATION
 1. MAP DATUM/PROJECTION: NAD 1983 UTM ZONE 11N.
 2. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:32,500 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.
 3. ALL DIGITIZED LINEWORK IS APPROXIMATE

DESIGN	DH	DATE	2017-Jun-07
DRAWING	DH	DATE	2023-Sep-27
REVIEW	DD	DATE	2023-Sep-27
MXD ID	STUDY_AREA		



DATA SOURCES
 Topographic Base Maps provided by ArcGIS License
 Transport Line - GeobC Digital Road Atlas
 PMBC - GeobC PMBC_PARCEL_FABRIC_POLY
 VRI - GeobC VEG_COMP_LYR_L1_POLY.gdb

OVERVIEW MAP



3.0 METHODS

3.1 Desktop Screening

The desktop screening included reviews of the following databases:

- BC Conservation Data Centre;
- iMapBC;
- Wildlife Species Inventory database;
- Ecocat (Ecological Reports Catalogue);
- City of Fernie Official Community Plan, Zoning and Land Use;
- Regional District of East Kootenay Official Community Plan, Zoning and Land Use; and
- Species and Ecosystems at Risk - Recovery and Management Plans;

Queries were also completed for sensitive species using the online BC Ecosystem Explorer database. The following search criteria and queries were selected within the database to identify sensitive species that have the potential to occur in the area:

- Animals, Plants, Lichen and Macrofungi
- BC Conservation status: red and blue listed; and,
- *Species at Risk Act* status: endangered, threatened and special concern.

The resulting query results were then exported and filtered to only include species that occur in the ICHmk4 BEC zone. All species identified were evaluated for potential occurrence based each species' known range and distribution within BC (note: ICHmk4 BEC zone occurs in various locations throughout BC; therefore, some species identified in the query may not occur in the land parcels area based on the species' known distribution).

3.2 Forest Stand Structure and Old Growth Forest

Queries were made from GeoBC to determine forest stand structure. The following data layers were retrieved and evaluated:

- Parcel fabric download; and,
- Vegetation Resources Inventory (VRI).

Parcels were identified in the Parcel Fabric dataset. The geoprocessing tool "Intersect" was then used to find the geometric intersection of the Parcels and VRI. The attribute data was exported and converted to a spreadsheet and summarized by Leading Species, Age Class, and Height Class. Maps were created to display the data by Leading Species, Age Class, and Height Class.

4.0 CONSERVATION VALUES

4.1 Grizzly Bear Population Unit

The Province of BC identifies Grizzly Bear Population Units (GBPUs) to encompass both regional and sub-regional variations in population and habitat management. This classification aids in assessing the conservation urgency of these units, facilitating land-use planning, project impact assessment, and the evaluation of cumulative effects (Morgan et al. 2019). The West Fernie Assessment Area falls within the Southern Rockies Grizzly Bear Population Unit, which holds a significant position in terms of conservation concern (Morgan et al. 2019).

The Elk Valley Cumulative Effects Management Framework (CEMF) Grizzly Bear Cumulative Effects Assessment Report for Elk Valley (2018) emphasizes four crucial indicators of the grizzly bear population and its habitat preservation (habitat type, habitat connectivity, human-caused mortality and population trend). The study highlights the significance of habitats like avalanche chutes and alpine environments. Additionally, it emphasizes the crucial role of proficient forest management in nurturing open-canopy forests and practices to bolster the production of berries, a vital food source for grizzly bears.

4.2 American Badger

The West Fernie Assessment Area is situated within the Element of Occurrence range of the American badger (*jeffersonii* subspecies) in the Elk Valley. This badger subspecies predominantly inhabits grassland and open forest habitats, although it does sometimes venture into forested regions. These forays into forested regions usually occurs during territorial expansion or when encountering disrupted landscapes that provide appropriate soil conditions for burrowing and a plentiful availability of subterranean prey (Weir and Almuedo 2010). In 2021, Environment and Climate Change Canada (ECCC) proposed a preliminary recovery strategy for the American badger *jeffersonii* subspecies. The recovery strategy will identify critical habitat areas for the subspecies which might potentially overlap with the West Fernie Assessment Area. However, the confirmation of any overlap cannot be established until the recovery strategy has been finalized.

4.3 Ungulate Winter Range

Ungulate Winter Range (UWR) was identified for moose and mountain goat in some of the land parcels within the West Fernie Assessment Area. All of the land parcels are located within the approved UWR for moose (*Alces alces*; order u-4-006-Cranbrook TSA; Conservation Data Centre 2005). Crown parcel PID 030732573 partially falls into the approved UWR for mountain goat (*Oreamnos americanus*; order u-4-002-TFL 14 TSA Golden, Invermere, Cranbrook; B.C. Conservation Data Centre 2022). The UWR outlines general wildlife measures such as forest cover retention requirements for specific habitat types (Province of BC 2005). ICHmk4 can provide suitable habitat for moose and mule deer, along with important travel corridors for some wide-ranging species (MacKillop et al. 2018).

4.4 Sensitive Species and Ecosystems

Twenty-two sensitive species were identified to potentially occur within the West Fernie Assessment Area, consisting of twelve birds, three mammals, one amphibian, two fish, two gastropods, one insect and one plant community (Table 1). The desktop queries revealed very little data on wildlife species occurrence in the Assessment Area, likely due to data not being documented in the databases queried. Species occurrence was based on professional judgment and knowledge of the area for most species, while bird species occurrence was based on findings from citizen science reporting on an online public database (i.e., eBird.org). Fish species occurrence is directly related to any of the land parcels that are adjacent to Lizard Creek, Mutz Creek, or Fairy Creek.

4.5 Environmentally Sensitive Areas

According to the RDEK's Elk Valley OCP (bylaw No. 2532, 2014), four properties are potentially located within an Environmentally Sensitive Area (ESA) identified as an Old Growth Management Area. The four properties are PID: 30499488, PID: 15313786, PID: 8481460, and PID: CROWN2. Any proponent proposing a development within these areas are required to have a field assessment completed by a Qualified Professional to determine if the ESA exists within the identified area. Further details on Old Growth Management Areas are provided in section 4.4.

4.6 Forest Stand Structure

According to the VRI database, the West Fernie Assessment Area has a variety of different forest stand age classes ranging from 21 to 250 years old, with the majority of the forest stand at least 81 years old (Figure 2). The south portion of the West Fernie Assessment Area contains both the most abundant amount of young stand age class and oldest stand age class (Figure 2). Some land parcels had portions not containing forest stands that were attributed to either avalanche chutes (on the north land parcels), or ski runs from Fernie Alpine Resort on the southwest land parcels (Figure 2). The majority of the forest stand within the West Fernie Assessment Area was at least 19.5 m tall, with heights ranging from 0 – 46.4 m (Figure 3).

The VRI data identifies a mosaic of conifer and deciduous stands. Eight tree species were identified to occur within the West Fernie Assessment Area, consisting of black cottonwood (*Populus trichocarpa*), trembling aspen (*Populus tremuloides*), western red cedar (*Thuja plicata*), interior Douglas-fir (*Pseudotsuga menziesii*), western larch (*Larix occidentalis*), lodgepole pine (*Pinus glauca*), Engelmann spruce (*Picea engelmannii*), and spruce hybrid (mix of Engelmann spruce and white spruce). The leading tree species identified in the West Fernie Assessment Area are western larch, spruce hybrid, and trembling aspen (Figure 4).

Details on the size of the different age classes, tree heights, and leading tree species occurrences in each land parcel within the West Fernie Assessment Area are provided in Appendix A.

Table 1: Sensitive species that have the potential to occur within the West Fernie Assessment Area.

Common Name	Scientific Name	Designation		Occurrence ³	Habitat	Comments
		SARA ¹	BC List ²			
Birds						
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Threatened	Blue	Possible	Open woodlands	Species has been identified at Fernie Alpine Resort.
Barn Swallow	<i>Hirundo rustica</i>	Threatened	Yellow	Likely	Caves, holes, artificial structures, grasslands	Species has been identified within Fernie City Limits but not in Assessment Area.
California Gull	<i>Larus californicus</i>	No status	Red	Not likely	Lakes and Ponds	Species occurrence unknown
Common Nighthawk	<i>Chordeiles minor</i>	Special Concern	Blue	Possible	Grasslands, open forests	Species has been identified within Fernie City Limits but not in Assessment Area.
Eared Grebe	<i>Podiceps nigricollis</i>	No status	Blue	Unlikely	Lakes and Ponds	Species occurrence unknown
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	Special Concern	Yellow	Likely	Forests	Species has been identified within Fernie City Limits but not in Assessment Area.
Great Blue Heron	<i>Ardea herodias</i>	No status	Blue	Possible	Marshes	Species has been identified within Fernie City Limits but not in Assessment Area.
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Special Concern	Yellow	Likely	Forests, clearings	Species has been identified within Fernie City Limits but not in Assessment Area.
Northern Goshawk, <i>atricapillus</i> subspecies	<i>Accipiter gentilis atricapillus</i>	No Status	Blue	Likely	Forests	Species has been identified within Fernie City Limits but not in Assessment Area.
Peregrine Falcon	<i>Falco peregrinus</i>	Special concern	No status	Unlikely	Shorelines	Species occurrence unknown

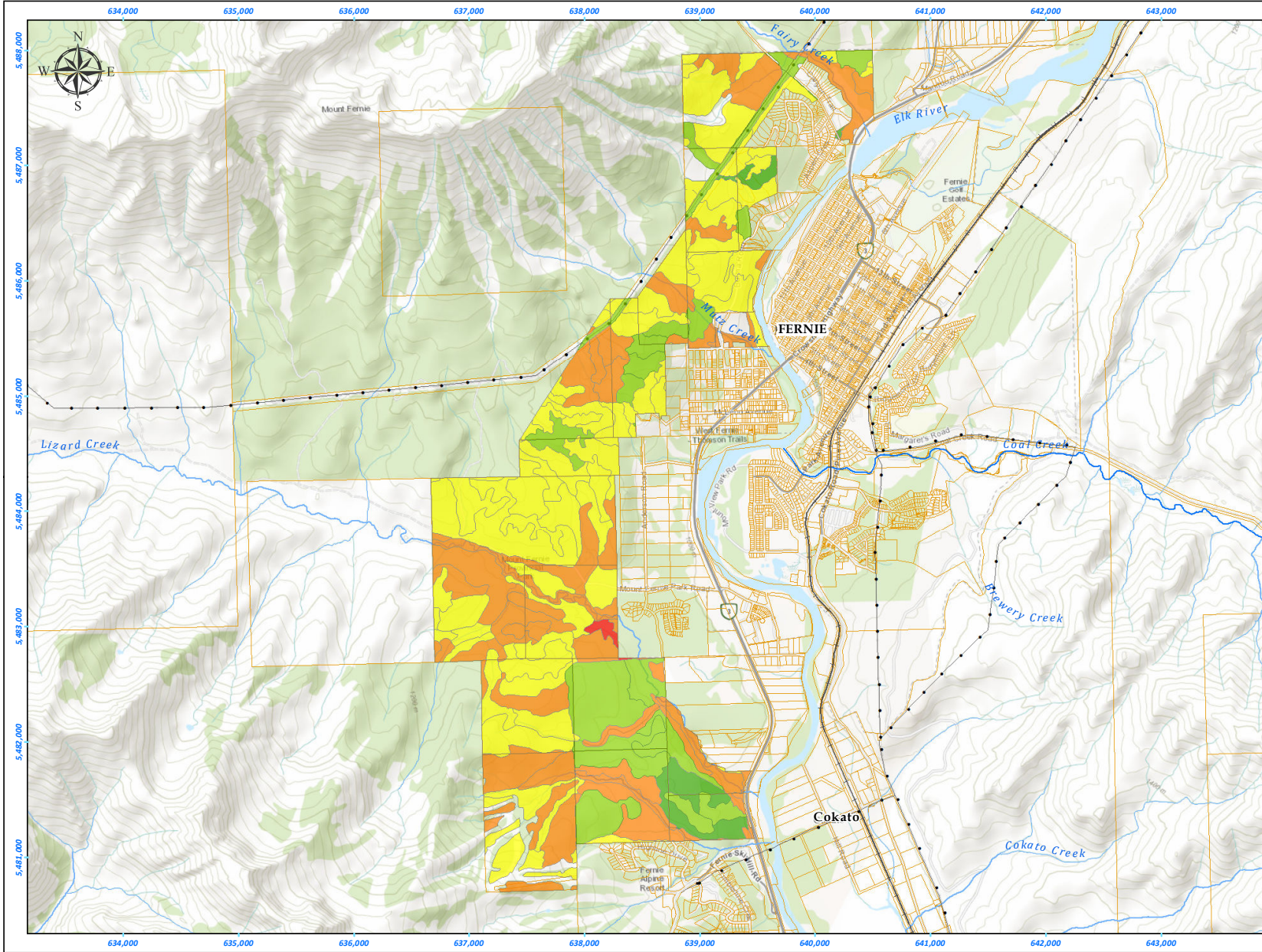
Common Name	Scientific Name	Designation		Occurrence ³	Habitat	Comments
		SARA ¹	BC List ²			
Birds						
Short-eared Owl	<i>Asio flammeus</i>	Special concern	Blue	Unlikely	Grasslands	Species occurrence unknown
Western Grebe	<i>Aechmophorus occidentalis</i>	Special concern	Red	Possible	Lakes and Ponds	Species occurrence unknown
Mammals						
American Badger	<i>Taxidea taxus</i>	Endangered	Red	Possible	Grasslands, open forest	Historic occurrences in the Elk River valley.
Grizzly Bear	<i>Ursus arctos</i>	Special Concern	Blue	Confirmed	Woodlands, forests, alpine meadows,	Species is known to occur within the Assessment Area.
Mountain Goat	<i>Oreamnos americanus</i>	No Status	Blue	Possible	Alpine, cliffs, forested areas	Species may occur in Assessment Area if a mineral lick occurs within a land parcel.
Amphibians/Reptiles						
Western Toad	<i>Anaxyrus boreas</i>	Special Concern	Yellow	Likely	Wetlands, forests, grasslands	Species is known to occur in the surrounding area.
Ray-finned fishes						
Bull Trout	<i>Salvelinus confluentus</i>	No status	Blue	Confirmed	Riparian cover, in-stream structure	Species known to occur in Lizard Creek and Fairy Creek
Cutthroat Trout, <i>lewisi</i> subspecies	<i>Oncorhynchus clarkii lewisi</i>	Special Concern	Blue	Confirmed	Riparian cover, in-stream structure	Species known to occur in Lizard Creek, Mutz Creek, and Fairy Creek.
Gastropods						
Magnum Mantleslug	<i>Magnipelta mycophaga</i>	Special Concern	Blue	Possible	Cool and moist habitat	Species occurrence unknown
Subalpine Mountainsnail	<i>Oreohelix subrudis</i>	No status	Blue	Unlikely	Moist habitat	Species occurrence unknown
Insects						
Variagated Fritillary	<i>Euptoieta claudia</i>	No Status	Blue	Possible	Variety of habitats	Species occurrence unknown

Common Name	Scientific Name	Designation		Occurrence ³	Habitat	Comments
		SARA ¹	BC List ²			
Plants community						
Black cottonwood / Common snowberry / Roses (community)	<i>Populus trichocarpa</i> , <i>Symphoricarpos albus</i> , <i>Rosa</i>	No status	Red	Possible	Sandy-gravelly flats in riparian zones	Species occurrence unknown

1 - Endangered- A wildlife species that is facing imminent extirpation or extinction. Threatened- A wildlife species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction. Special Concern- A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats. No status – a wildlife species that has not been recognized under the SARA.

2 - BC Listing: Red- Any species/ecosystem that is at risk of being lost (extirpated, endangered or threatened). Blue- Any species or ecosystem that is of special concern (Province of British Columbia 2018).

3 - Expert-based assessment of probability of species occurring in the area. Confirmed = species known to occur in area; Likely = species occurrence unknown but suitable habitat occurs; Possible = species occurrence unknown but potential suitable habitat occurs; Unlikely = species occurrence unknown and low probability of suitable habitat present.



PROJECT
Elk Valley Land Trust

TITLE
Figure 3 – Height Class of Stand

LEGEND

- Parcel Fabric BC
- Height Class of Leading Species**
- 1 - 0 – 10.4 m
- 2 - 10.5 - 19.4 m
- 3 - 19.5 - 28.4 m
- 4 - 28.5 - 37.4 m
- 5 - 37.5 – 46.4 m

MAP INFORMATION

- MAP DATUM/PROJECTION: NAD 1983 UTM ZONE 11N.
- THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:32,500 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.
- ALL DIGITIZED LINEWORK IS APPROXIMATE

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DRAWING	DH	DATE	2023-Sep-27
REVIEW	DD	DATE	2023-Sep-27
MXD ID	HEIGHT_CLASS		

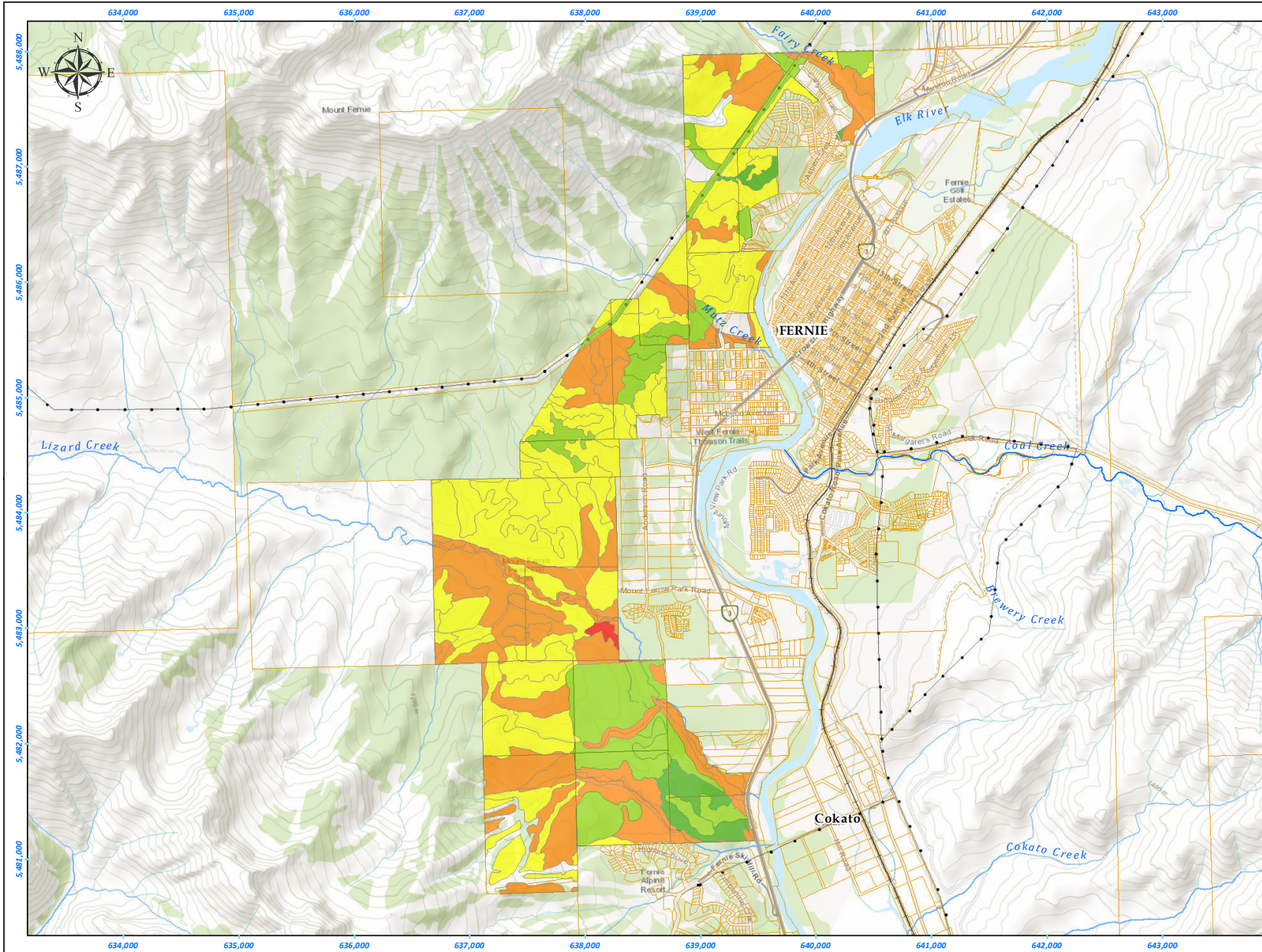
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Kilometers

DATA SOURCES

Topographic Base Maps provided by ArcGIS License
 Transport Line - GeoBC Digital Road Atlas
 PMBC - GeoBC PMBC_PARCEL_FABRIC_POLY
 VRI - GEOBC VEG_COMP_LVR_L1_POLY.gdb







OVERVIEW MAP



PROJECT
Elk Valley Land Trust

TITLE
Figure 3 – Height Class of Stand

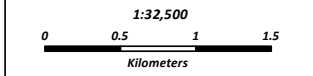
LEGEND

-  Parcel Fabric BC
- Height Class of Leading Species**
-  1 - 0 – 10.4 m
-  2 - 10.5 - 19.4 m
-  3 - 19.5 - 28.4 m
-  4 - 28.5 - 37.4 m
-  5 - 37.5 – 46.4 m

MAP INFORMATION

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3. ALL DIGITIZED LINEWORK IS APPROXIMATE

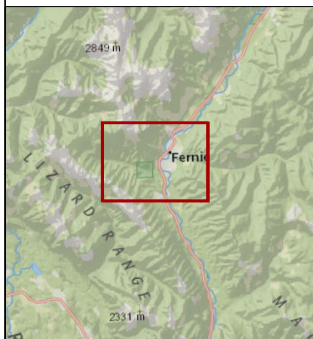
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DRAWING	DH	DATE	2023-Sep-27
REVIEW	DD	DATE	2023-Sep-27
MXD ID	HEIGHT_CLASS		

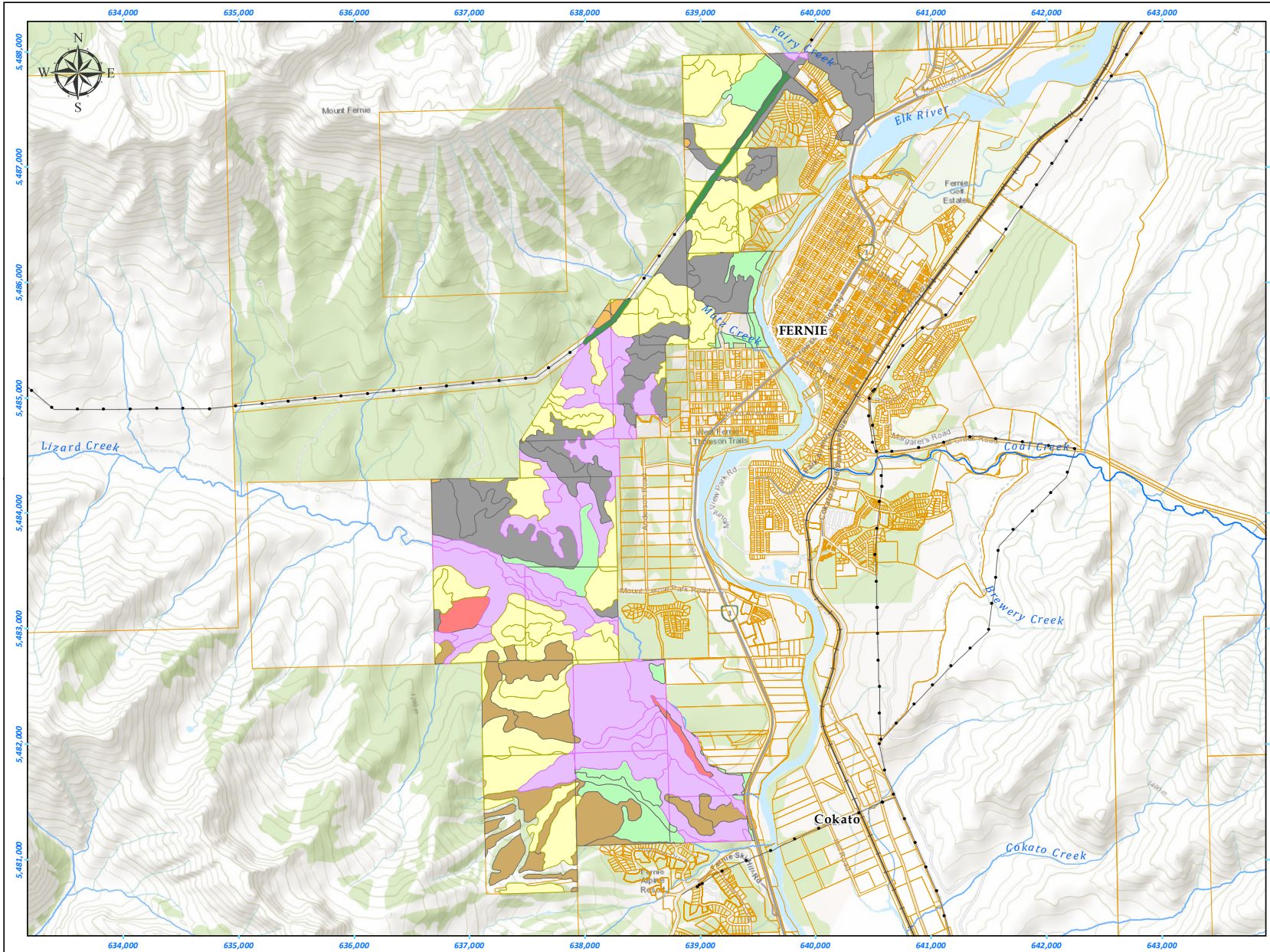


DATA SOURCES

Topographic Base Maps provided by ArcGIS License
 Transport Line - GeoBC Digital Road Atlas
 PMBC - GeoBC PMBC_PARCEL_FABRIC_POLY
 VRI - GEOBC VEG_COMP_LYR_L1_POLY.gdb

OVERVIEW MAP





PROJECT
Elk Valley Land Trust

TITLE
Figure 4 – Leading Species

LEGEND

Parcel Fabric BC

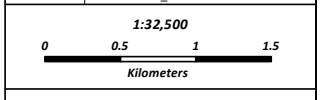
Leading Species

- ACT - Black cottonwood
- AT - Aspen
- CW - Western red cedar
- FDI - Douglas-fir (interior)
- LW - Western larch
- PLI - Lodgepole pine
- SE - Engelmann spruce
- SX - Spruce hybrid

MAP INFORMATION

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2. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:32,500 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.
3. ALL DIGITIZED LINEWORK IS APPROXIMATE

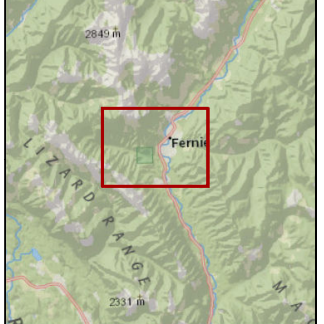
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DRAWING	DH	DATE	2023-Sep-27
REVIEW	DD	DATE	2023-Sep-27
MXD ID	LEADING_SPC		



DATA SOURCES

Topographic Base Maps provided by ArcGIS License
 Transport Line - GeoBC Digital Road Atlas
 PMBC - GeoBC PMBC_PARCEL_FABRIC_POLY
 VRI - GEOBC VEG_COMP_LVR_L1_POLY.gdb

OVERVIEW MAP



4.7 Old Growth Management Areas

In the Forest Practices Code of the *British Columbia Act*, an Old Growth Management Area (OGMA) is “an area established under a higher level plan which contains or is managed to contain structural old growth attributes (such as maintenance of large trees, variation in tree size/spacing, accumulation of large dead standing and fallen trees, multiple canopy levels, elements of decay, etc.)” (Province of BC 1998).

Presently, the province of British Columbia recognizes two distinct classifications for OGMA: legal and non-legal. Legal OGMA are delineated geographical zones within old growth forests, officially declared through an Old Growth Order. These designated areas are mandated to be integrated into the forest stewardship plans (FSP) of forest licensees (Province of BC 2011a). It is a requirement that the FSP of a licensee aligns with the objectives outlined in these Orders.

Non-legal OGMA refer to segments of old growth forest that have not been formally declared under a legal order. However, forest licensees have the option to incorporate these areas into their FSP to fulfill non-spatial order obligations. This incorporation allows them to employ a variety of management strategies as outlined by the guidelines of the Province of BC in 2011b.

As of August 21, 2023, an assortment of non-legal OGMA have been identified within the West Fernie Assessment Area (Figure 5). This information reflects the current state of Old Growth Management Areas in the context of British Columbia's forest practices and regulations.

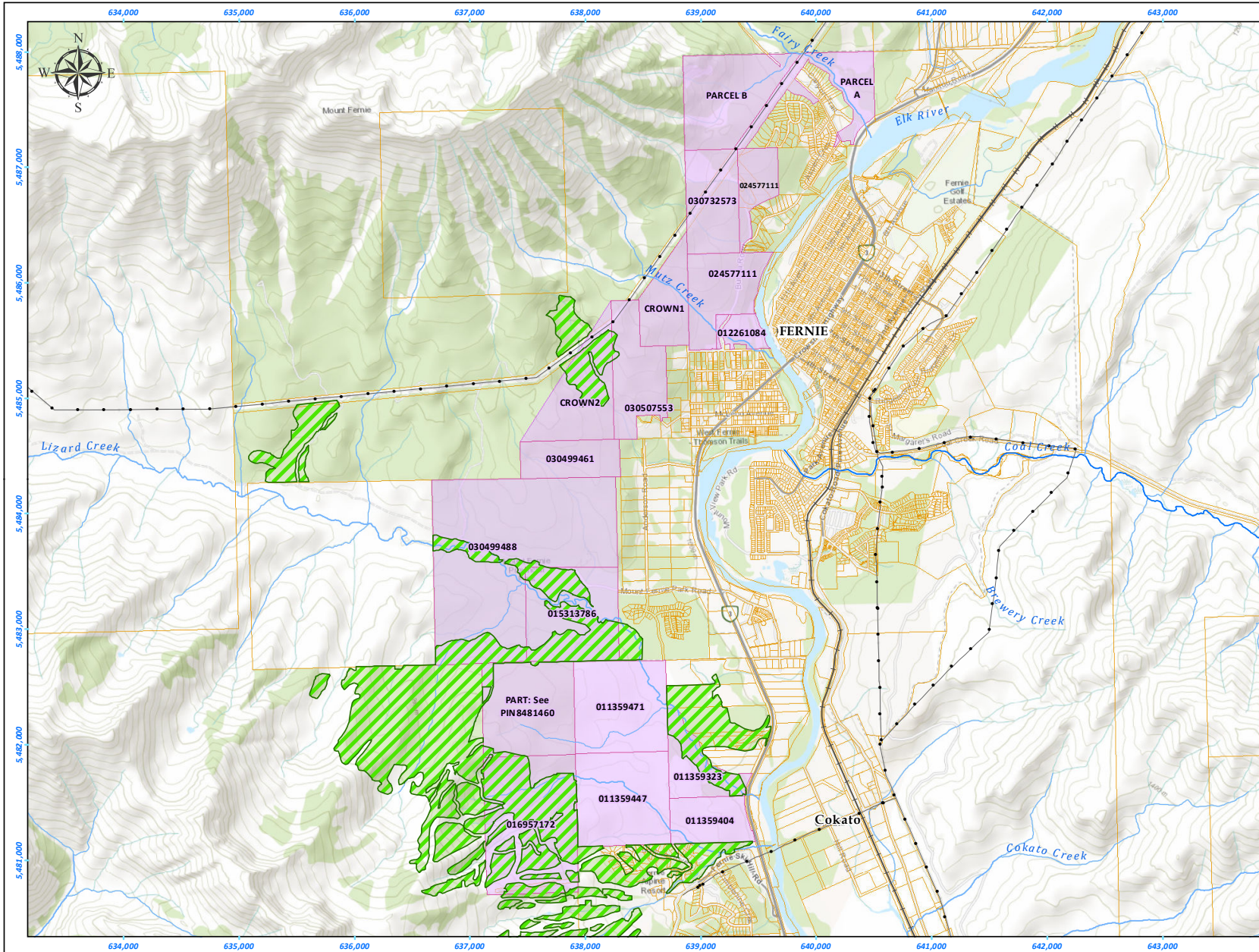
4.8 Land Use Zoning

Details regarding each parcel and its corresponding zoning are outlined in the Table 2. The data was extracted from sources such as the Regional District of East Kootenay, Elk Valley Zoning Bylaw No. 829, and The Corporation of the City of Fernie consolidated zoning bylaw No. 1750.

Table 2: Land Use Zoning for the West Fernie Assessment Area.

Parcel (PID)	Zoning shortcut	Zoning
13138804	P2; R1B; R3	Parks and Open Spaces; Single Detached Plus Residential; Medium Density Residential
8482370	RR; R3; R1B	Rural residential; Medium Density Residential; Single Detached Plus Residential
30732573	RR; P2	Rural residential; Parks and Open Spaces
CROWN1	RR-60	Rural Residential - Rural Resource
24577111	RR	Rural Residential

Parcel (PID)	Zoning shortcut	Zoning
12261084	A1; R-WF	Agricultural Zone; Low Density Residential West Fernie
30507553	RR-60	Rural Residential - Rural Resource
CROWN2	RR-60	Rural Residential - Rural Resource
30499461	RR-60	Rural Residential - Rural Resource
304994488	RR-60; RS-2(B); MG-A(A)	Rural Residential - Rural Resource; Residential - Resort Residential (Multi-family); Industrial - Resort Light Industrial
15313786	RR-60	Rural Residential - Rural Resource
8481460	CG-8	Commercial - Resort Commercial
11359471	PG-4; RS-4	Institutional - Resort Open Space, Recreation and Trails; Residential - Single Residential (Extensive)
16957172	CG-8	Commercial - Resort Commercial
11359447	PG-4; RS-4	Institutional - Resort Open Space, Recreation and Trails; Residential - Single Residential (Extensive)
11359323	PG-4; RS-4	Institutional - Resort Open Space, Recreation and Trails; Residential - Single Residential (Extensive)
11359404	PG-4; RS-4	Institutional - Resort Open Space, Recreation and Trails; Residential - Single Residential (Extensive)



PROJECT
Elk Valley Land Trust

TITLE
Figure 5 – OGMA Non-Legal

LEGEND

- EVLT Parcel - Area of Interest
- Parcel Fabric BC
- OGMA - Non Legal

MAP INFORMATION

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3. ALL DIGITIZED LINEWORK IS APPROXIMATE

DESIGN	DH	DATE	2017-Jun-07
DRAWING	DH	DATE	2023-Sep-27
REVIEW	DD	DATE	2023-Sep-27
MXD ID	OGMA_NONLEGAL		

1:32,500

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Kilometers

DATA SOURCES

Topographic Base Maps provided by ArcGIS License
 Transport Line - GeoBC Digital Road Atlas
 PMBC - GeoBC PMBC_PARCEL_FABRIC_POLY
 RMP_OGMA_NON_LEGAL_CURRENT_SVW.gdb

OVERVIEW MAP

5.0 LIMITATIONS

Services provided by VAST Resource Solutions Inc. for this report have been completed in a manner consistent with the level of skill, care and competence ordinarily exercised by members of the profession currently practicing under similar conditions and like circumstances in the same jurisdiction in which the services were provided. Professional judgment has been applied to developing this report. No warranties, expressed or implied, are made as to the professional services provided under the terms of the agreement and included in this report.

The findings from the conservation values assessment completed have some limitations associated with it. Findings identified in the report were through a desktop screening. As such, the report is based on information available online at the time of the conservation values assessment. Additionally, a desktop screening does not take the place of an on the ground survey. The desktop screening helps provide direction/needs for on the ground surveys should future activities be considered.

The recommendations in this report do not relieve the Elk Valley Land Trust, their agents or representatives of the responsibility to comply with applicable acts, regulations, bylaws and/or decisions of any authorities that have jurisdiction under an enactment. The content of this report does not, in any way, constitute or provide a legal opinion.

The report is based on and limited by circumstances, conditions and information available at the time the work was completed. The information summarized in this report is based in part on information provided by others. VAST believes this information is accurate but cannot guarantee or warrant its accuracy or completeness.

6.0 CLOSURE

VAST trusts the information provided herein meets your requirements. If you have any questions, please contact the undersigned at your convenience.

Authored By:



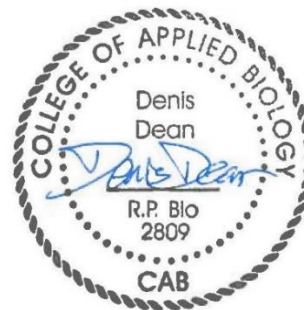
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Reviewed By:



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Senior Wildlife Biologist
250-420-7709
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VAST Resource Solutions acknowledges that the persons signing this report have the proper combination of formal education, training, skill and demonstrable experience and are familiar with completing the scope of work identified in this report.



7.0 REFERENCES

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APPENDIX A: FOREST STAND DATA SUMMARIES

Forest Stand Structure: Age Class

Parcel ID	Age Class	Size (ha)
<u>011359323</u>	Stand Age 21 - 40 years	14.60
	Stand Age 41 - 60 years	0.35
	Stand Age 101 - 120 years	0.41
	Stand Age 121 - 140 years	4.09
	Stand Age 141 - 250 years	8.55
	Total Area	27.99
<u>011359404</u>	Stand Age 21 - 40 years	12.07
	Stand Age 41 - 60 years	10.28
	Stand Age 81 - 100 years	0.01
	Stand Age 101 - 120 years	0.72
	Stand Age 121 - 140 years	2.95
	Stand Age 141 - 250 years	1.12
	Total Area	27.14
<u>011359447</u>	Stand Age 21 - 40 years	16.51
	Stand Age 41 - 60 years	16.51
	Stand Age 101 - 120 years	0.11
	Stand Age 121 - 140 years	28.65
	Stand Age 141 - 250 years	3.08
	Total Area	64.86
<u>011359471</u>	Stand Age 21 - 40 years	53.21
	Stand Age 81 - 100 years	1.27
	Stand Age 121 - 140 years	8.54
	Stand Age 141 - 250 years	0.52
	Total Area	63.54
<u>012261084</u>	Stand Age 81 - 100 years	5.49
	Total Area	5.49
<u>015313786</u>	Stand Age 81 - 100 years	39.21
	Stand Age 101 - 120 years	22.34
	Stand Age 121 - 140 years	3.10
	Total Area	64.66
<u>016957172</u>	Stand Age 21 - 40 years	0.06
	Stand Age 41 - 60 years	0.11
	Stand Age 101 - 120 years	5.65
	Stand Age 121 - 140 years	23.49
	Stand Age 141 - 250 years	45.67
	Total Area	74.98

Parcel ID	Age Class	Size (ha)
<u>024577111</u>	Stand Age 21 - 40 years	4.57
	Stand Age 41 - 60 years	2.60
	Stand Age 61 - 80 years	0.08
	Stand Age 81 - 100 years	46.99
	Stand Age 101 - 120 years	5.45
	Total Area	59.70
<u>030499461</u>	Stand Age 81 - 100 years	27.81
	Total Area	27.81
<u>030499488</u>	Stand Age 81 - 100 years	119.42
	Stand Age 101 - 120 years	59.60
	Stand Age 121 - 140 years	5.85
	Stand Age 141 - 250 years	3.58
	Total Area	188.44
<u>030507553</u>	Stand Age 41 - 60 years	6.87
	Stand Age 61 - 80 years	12.14
	Stand Age 81 - 100 years	16.21
	Stand Age 141 - 250 years	6.74
	Total Area	41.97
<u>030732573</u>	Stand Age 21 - 40 years	0.56
	Stand Age 41 - 60 years	6.06
	Stand Age 81 - 100 years	16.28
	Stand Age 101 - 120 years	13.65
	Total Area	36.54
<u>CROWN1</u>	Stand Age 61 - 80 years	5.69
	Stand Age 81 - 100 years	24.29
	Stand Age 101 - 120 years	0.00
	Total Area	29.99
<u>CROWN2</u>	Stand Age 21 - 40 years	0.13
	Stand Age 41 - 60 years	10.92
	Stand Age 81 - 100 years	20.57
	Stand Age 141 - 250 years	17.47
	Total Area	49.08
<u>PART: See PIN8481460</u>	Stand Age 21 - 40 years	2.46
	Stand Age 81 - 100 years	8.35
	Stand Age 101 - 120 years	19.97
	Stand Age 121 - 140 years	19.53
	Stand Age 141 - 250 years	14.97
	Total Area	65.28

<i>PARCEL A</i>	Stand Age 21 - 40 years	0.37
	Stand Age 41 - 60 years	5.10
	Stand Age 61 - 80 years	4.51
	Stand Age 81 - 100 years	22.99
	Stand Age 101 - 120 years	0.36
	Total Area	33.33
<i>PARCEL B</i>	Stand Age 41 - 60 years	4.31
	Stand Age 81 - 100 years	48.82
	Stand Age 101 - 120 years	0.53
	Total Area	53.67

Forest Stand Structure: Heigh Class

Parcel ID	Height Class	Size (ha)
<u>011359323</u>	0 - 10.4m	8.17
	10.5 - 19.4m	6.71
	19.5 - 28.4m	0.40
	28.5 - 37.4m	12.71
	Total Area	27.99
<u>1.1E+07</u>	0 - 10.4m	12.07
	10.5 - 19.4m	10.28
	19.5 - 28.4m	0.00
	28.5 - 37.4m	4.79
	Total Area	27.14
<u>011359447</u>	0 - 10.4m	2.76
	10.5 - 19.4m	30.25
	19.5 - 28.4m	2.73
	28.5 - 37.4m	29.11
	Total Area	64.86
<u>011359471</u>	10.5 - 19.4m	53.21
	19.5 - 28.4m	0.39
	28.5 - 37.4m	9.76
	37.5 - 46.4m	0.18
	Total Area	63.54
<u>012261084</u>	19.5 - 28.4m	2.02
	28.5 - 37.4m	3.47
	Total Area	5.49
<u>015313786</u>	19.5 - 28.4m	28.36
	28.5 - 37.4m	33.19
	37.5 - 46.4m	3.10
	Total Area	64.66
<u>016957172</u>	10.5 - 19.4m	0.17
	19.5 - 28.4m	27.58
	28.5 - 37.4m	47.23
	Total Area	74.98
<u>024577111</u>	0 - 10.4m	4.57
	10.5 - 19.4m	8.37
	19.5 - 28.4m	41.65
	28.5 - 37.4m	5.11
	Total Area	59.70
<u>030499461</u>	10.5 - 19.4m	4.54
	19.5 - 28.4m	23.27
	Total Area	27.81

Parcel ID	Height Class	Size (ha)
<u>030499488</u>	19.5 - 28.4m	123.64
	28.5 - 37.4m	64.80
	Total Area	188.44
<u>030507553</u>	10.5 - 19.4m	13.99
	19.5 - 28.4m	21.24
	28.5 - 37.4m	6.74
	Total Area	41.97
<u>030732573</u>	0 - 10.4m	0.56
	10.5 - 19.4m	6.06
	19.5 - 28.4m	24.80
	28.5 - 37.4m	5.12
	Total Area	36.54
<u>CROWN1</u>	10.5 - 19.4m	5.76
	19.5 - 28.4m	16.14
	28.5 - 37.4m	8.09
	Total Area	29.99
<u>CROWN2</u>	10.5 - 19.4m	6.72
	19.5 - 28.4m	21.46
	28.5 - 37.4m	20.90
	Total Area	49.08
<u>PART: See PIN8481460</u>	10.5 - 19.4m	2.46
	19.5 - 28.4m	48.52
	28.5 - 37.4m	14.30
	Total Area	65.28
<u>PARCELA</u>	0 - 10.4m	0.37
	10.5 - 19.4m	9.61
	19.5 - 28.4m	6.77
	28.5 - 37.4m	16.58
	Total Area	33.33
<u>PARCEL B</u>	10.5 - 19.4m	4.31
	19.5 - 28.4m	30.58
	28.5 - 37.4m	18.78
	Total Area	53.67

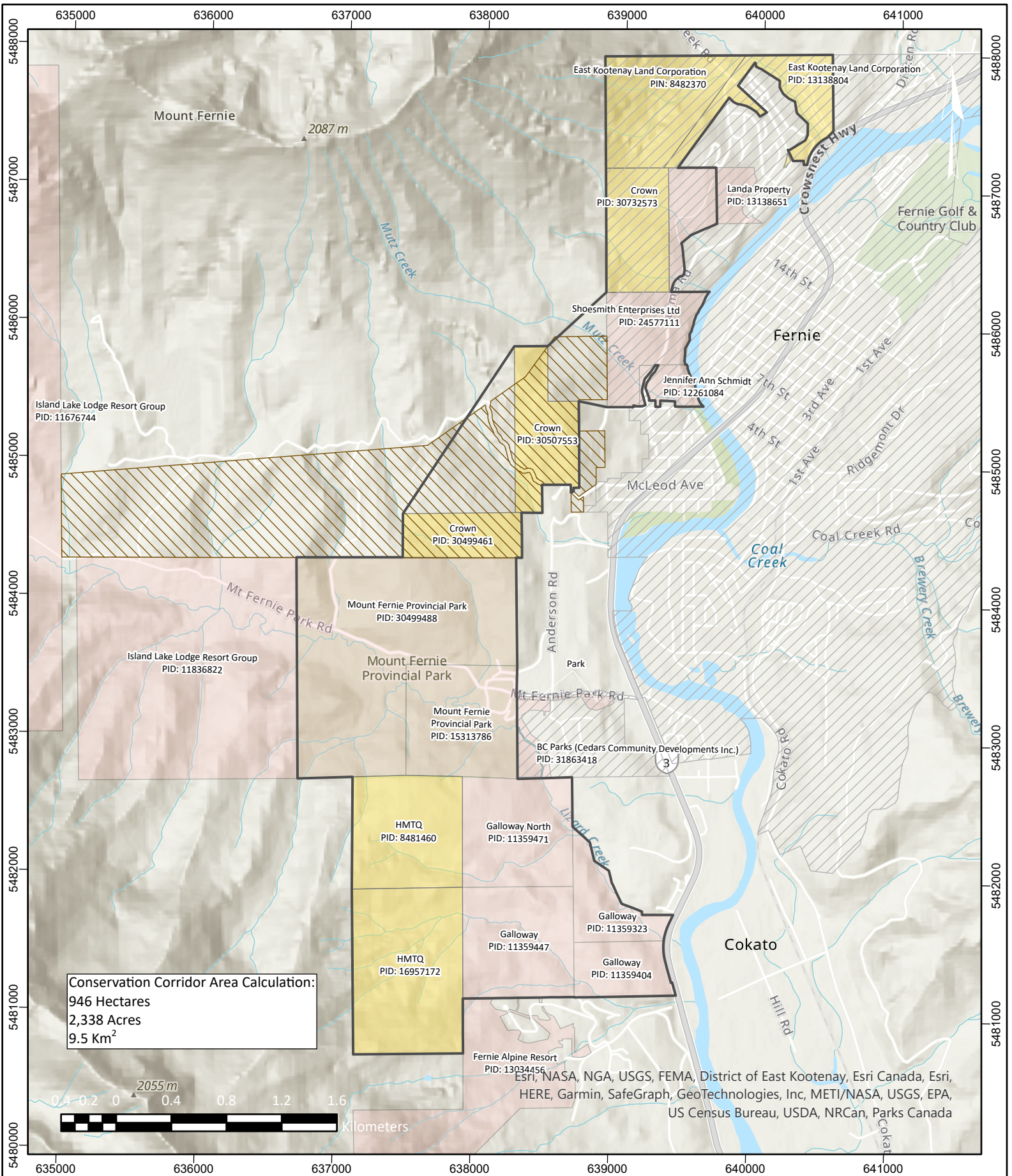
Forest Structure Stand: Species Composition

Parcel ID	Leading Species	Sum of AREA (ha)
<u>011359323</u>	Black Cottonwood	1.09
	Western Red Cedar	0.28
	Douglas-Fir (Interior)	3.46
	Spruce hybrid	23.16
	Total Area	27.99
<u>011359404</u>	Black Cottonwood	2.14
	Western Red Cedar	10.28
	Douglas-Fir (Interior)	0.01
	Spruce hybrid	14.72
	Total Area	27.14
<u>011359447</u>	Black Cottonwood	28.65
	Western Red Cedar	19.24
	Western Larch	0.42
	Spruce hybrid	16.54
	Total Area	64.86
<u>011359471</u>	Black Cottonwood	1.85
	Western Red Cedar	0.23
	Douglas-Fir (Interior)	0.66
	Western Larch	1.36
	Spruce hybrid	59.45
	Total Area	63.54
<u>012261084</u>	Black Cottonwood	5.39
	Trembling Aspen	0.02
	Western Larch	0.08
	Total Area	5.49
<u>015313786</u>	Black Cottonwood	6.86
	Trembling Aspen	1.79
	Western Red Cedar	3.09
	Western Larch	34.29
	Spruce hybrid	18.63
	Total Area	64.66
<u>016957172</u>	Black Cottonwood	0.01
	Western Red Cedar	28.80
	Western Larch	38.39
	Spruce hybrid	7.77
	Total Area	74.98

Parcel ID	Leading Species	Sum of AREA (ha)
<u>024577111</u>	Black Cottonwood	8.61
	Trembling Aspen	30.18
	Western Larch	20.90
	Engelmann Spruce	0.02
	Total Area	59.70
<u>030499461</u>	Trembling Aspen	13.64
	Western Larch	2.14
	Spruce hybrid	12.03
	Total Area	27.81
<u>030499488</u>	Black Cottonwood	8.50
	Trembling Aspen	59.56
	Western Red Cedar	4.00
	Douglas-Fir (Interior)	9.41
	Western Larch	43.30
	Lodgepole Pine	0.21
	Spruce hybrid	63.47
	Total Area	188.44
<u>030507553</u>	Trembling Aspen	17.68
	Western Larch	6.70
	Lodgepole Pine	1.02
	Engelmann Spruce	1.16
	Spruce hybrid	15.41
	Total Area	41.97
<u>030732573</u>	Trembling Aspen	3.37
	Western Larch	29.40
	Engelmann Spruce	3.76
	Total Area	36.54
<u>CROWN1</u>	Trembling Aspen	12.53
	Western Larch	17.46
	Total Area	29.99
<u>CROWN2</u>	Trembling Aspen	5.25
	Western Larch	21.56
	Lodgepole Pine	1.55
	Engelmann Spruce	1.37
	Spruce hybrid	19.35
	Total Area	49.08
<u>PART: See PIN8481460</u>	Western Red Cedar	25.23
	Western Larch	37.55
	Spruce hybrid	2.50
	Total Area	65.28

Parcel ID	Leading Species	Sum of AREA (ha)
<i>PARCEL A</i>	Trembling Aspen	28.77
	Western Larch	0.66
	Engelmann Spruce	3.54
	Spruce hybrid	0.36
	Total Area	33.33
<i>PARCEL B</i>	Black Cottonwood	12.95
	Trembling Aspen	3.67
	Western Larch	35.58
	Lodgepole Pine	0.30
	Engelmann Spruce	0.64
	Spruce hybrid	0.53
	Total Area	53.67

Appendix C



Elk Valley Regional Land Trust
 Conservation Corridor

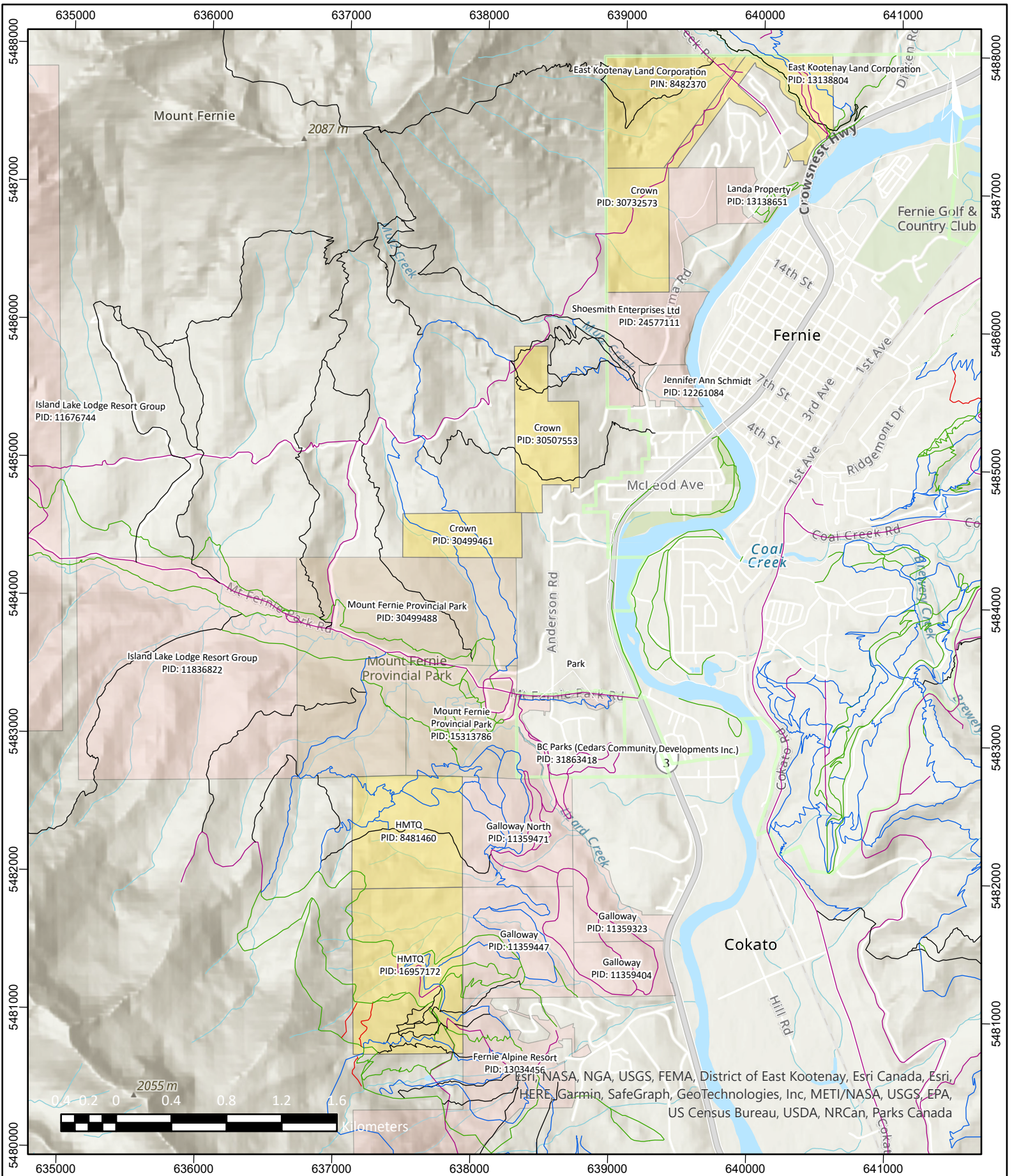
Conservation Corridor
 (Area of Interest)

Parcel - Park/Crown

Parcel - Private

Treaty Parcel

City of Fernie



Elk Valley Regional Land Trust
Land Parcels

Land Parcels

- Parcel Interest
- Parcel Ownership
- City of Fernie

Trail (Difficulty)

- White
- Green
- Blue
- Black Diamond
- Double Black Diamond
- Proline
- Access Trail/Double Track

Esri, NASA, NGA, USGS, FEMA, District of East Kootenay, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, US Census Bureau, USDA, NRCan, Parks Canada

