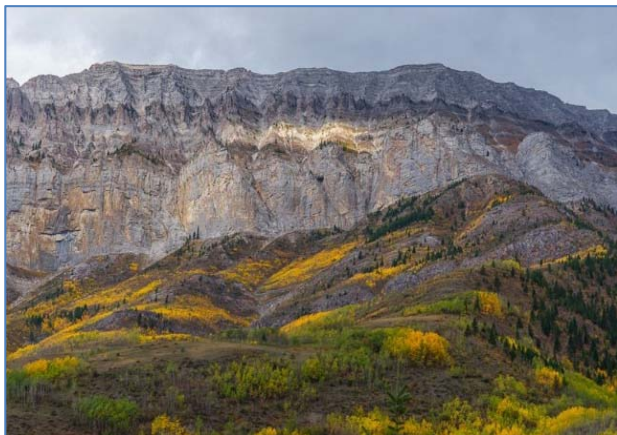




Elk Valley Conservation Action Forum Summary Report



Photos (top clockwise): KCP, Dave White, Lyle Grisdale, Internet

Prepared by:
Kootenay Conservation Program¹

June 25, 2019

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EXECUTIVE SUMMARY

On May 29, 2019, the Kootenay Conservation Program (KCP) hosted the Elk Valley Conservation Action Forum in Fernie, B.C. During this full-day workshop, 28 participants representing diverse perspectives as scientists, resource managers, conservationists, fish and wildlife associations, industry representatives, and representatives of First Nations worked together to identify priority actions that would contribute to maintaining healthy fish and wildlife populations and ecological functions in the Elk Valley over the next five years.

The Elk Valley Conservation Action Forum built upon integrating scientific knowledge, analyzing values and threats, and prioritizing actions to inform conservation action plans and inspire collaborations. The Forum began with scientists providing four-minute speed presentations of their research findings and sharing their “top three recommendations that would make the biggest difference” in keeping the Elk Valley ecologically healthy and functioning. These contributions were submitted to KCP in advance of the Forum so the information and recommendations could provide a starting place for: a) group discussion of key conservation values and threats; and b) small group review of the catalogue of scientists’ recommendations for actions based on six conservation themes:

1. Protect existing high quality habitat
2. Enhance and restore degraded ecosystems
3. Enhance landscape connectivity and corridors
4. Reduce human-wildlife conflict and recreational pressure
5. Address cumulative effects
6. Conserve populations of species of concern

Participants working in small groups based on these themes narrowed down the lists of recommendations to select the top actions they thought would make the most difference in the Elk Valley over the next five years. This process resulted in a list of the top 12 possible actions. Of these top actions, six “priority actions” were selected by participants and developed into action plans. Given that the Columbia Basin Trust will be funding landscape-level ecosystem enhancement projects in the Elk Valley in the coming year and that project ideas are due on July 31, 2019, many of these actions are focused on restoration objectives and potential projects.

The Elk Valley Forum resulted in six Priority Action Plans (not ranked):

1. Take a landscape-level approach to conservation in the Elk Valley
2. Protect high quality habitats – purchase ecologically intact CanWel lands
3. Access management habitat restoration (land and water) – trails and road
4. Bighorn sheep habitat restoration

5. Riparian/Wetland habitat restoration – landscape level
6. Reducing human-wildlife conflict – transportation and towns

The priority actions were collectively generated and incorporated policies, objectives and activities that align with participants' programmatic interests. All participants, as well as those people who were invited but could not attend the Elk Valley Forum, will be provided with the Forum's findings and will be encouraged to pursue actions as they are able.

Moving forward, the Elk Valley Conservation Action Forum approach supports KCP's partners in developing collaborative action plans that identify conservation targets and propose solutions to mitigating threats in their local neighbourhood. KCP will remain engaged in supporting the Elk Valley process and tracking the implementation of priority actions. The Forum's process and outcomes will also help KCP guide collaborative neighbourhood conservation action planning in other regions of the Kootenays where partners want to work together to protect local biodiversity.



FIGURE 1. ELK VALLEY CONSERVATION ACTION FORUM PARTICIPANTS.

I. OVERVIEW

The Elk Valley Conservation Action Forum took place on May 29, 2019, in Fernie, B.C. The purpose of the Forum was to bring together a broad range of perspectives, including scientific experts on ecological topics, to identify priority actions for enhancing and maintaining the ecological health and functioning of the Elk Valley region in south-eastern B.C.

KCP is a partnership program comprised of over 80 organizations that are involved in conservation and stewardship in the East and West Kootenays². KCP's mandate is *to facilitate and coordinate efforts on private land and to generate the resources and support to maintain this effort*. The Elk Valley Conservation Action Forum was based on a model developed by the Slocan Lake Stewardship Society in collaboration with the Kootenay Conservation Program (KCP) in February 2017³.

During this full-day workshop, 28 participants (Appendix A) representing diverse perspectives as scientists, resource managers, conservationists, fish and wildlife associations, and representatives of First Nations, worked together to identify priority actions that would contribute to maintaining healthy fish and wildlife populations and ecological functions in the Elk Valley over the next five years.

The goal of the Forum was not to create another plan since most agencies and organizations already have plans. Rather, the Forum was designed to help participants set priorities and develop collaborative solutions for this Valley. The starting point was science: sharing what we know about how the ecosystems, species and habitats of this area interconnect, and identifying the ecological values that make this landscape so exceptional.

The Forum agenda was structured to address these questions:

- What is the current knowledge regarding species of concern, critical habitats and processes in the Elk Valley? What more do we need to know?
- Based on scientific findings, what actions will make the most difference in protecting high quality habitats, enhancing and restoring degraded ecosystems, enhancing connectivity and corridors, reducing human-wildlife conflict and recreational pressure, addressing cumulative effects, and conserving populations of species of concern?
- How can there be a strategic and proactive approach to land acquisition for conservation in this Valley?

² www.kootenayconservation.ca

³ Mahr, M. 2017. Slocan Lake Watershed Priority Conservation Actions Summary Report: Step #2 for an Ecosystem-based Conservation Action Framework for Slocan Lake. Report to Slocan Lake Stewardship Society. 30pp.

- What landscape-level ecosystem restoration projects would be most beneficial in the Elk Valley?
- Where do you see opportunities in your organization's or agency's plans, policies, programs, budgets and communications for realizing these actions?
- What kind of alignment do we need to foster between scientists, non-profit organizations, First Nations, industry, and local and provincial government to effectively collaborate and make a significant, positive impact while also meeting organizational mandates?

The desired outcomes of the Forum were that:

- Science-based recommendations set the foundation for priority-setting of actions.
- Natural resource managers and representatives of local non-profit organizations and industry will have the information they need to identify how they can contribute to collaborative approaches and actions.
- The group clearly identifies at least four conservation actions and the partnerships/ teams required to achieve positive results including a focus on securement and ecosystem enhancement.
- Partners of Kootenay Conservation Program and other organizations have clear direction for how they can support the proposed conservation actions in the Elk Valley.

The Elk Valley Forum included scientific presentations with accompanying recommendations that set the foundation for small group strategy sessions. Within the small groups, participants discussed conservation opportunities and challenges, and identified priority actions that would benefit fish and wildlife; protect and restore high quality habitats; increase landscape resilience through access management; and reduce wildlife mortality on major highways and railways. The results reported in the following sections highlight actions that participants considered feasible within the next five years (Figure 2).

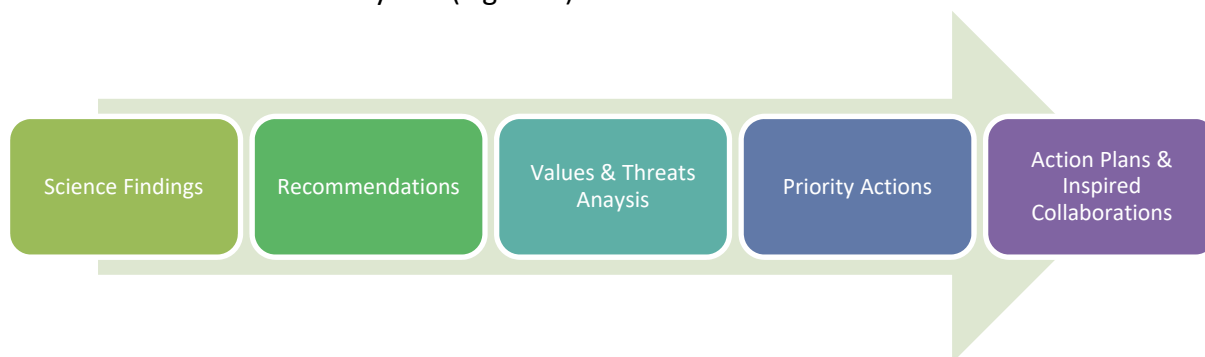


FIGURE 2. THE ELK VALLEY CONSERVATION ACTION FORUM PROCESS.

II. TAKING A CONSERVATION NEIGHBOURHOOD APPROACH

Since 2017, the Kootenay Conservation Program has engaged its partners in landscapes through the East and West Kootenays to develop an approach to framing conservation and stewardship objectives in terms of ecological benefits to local landscapes. KCP's Conservation Action Planning Initiative has worked with partners to identify 14 "Conservation Neighbourhoods" in the region (Figure 3). These areas are informed by watershed and ecosystem boundaries yet also capture what KCP partners deem "local" by encompassing areas that have a common conservation culture.

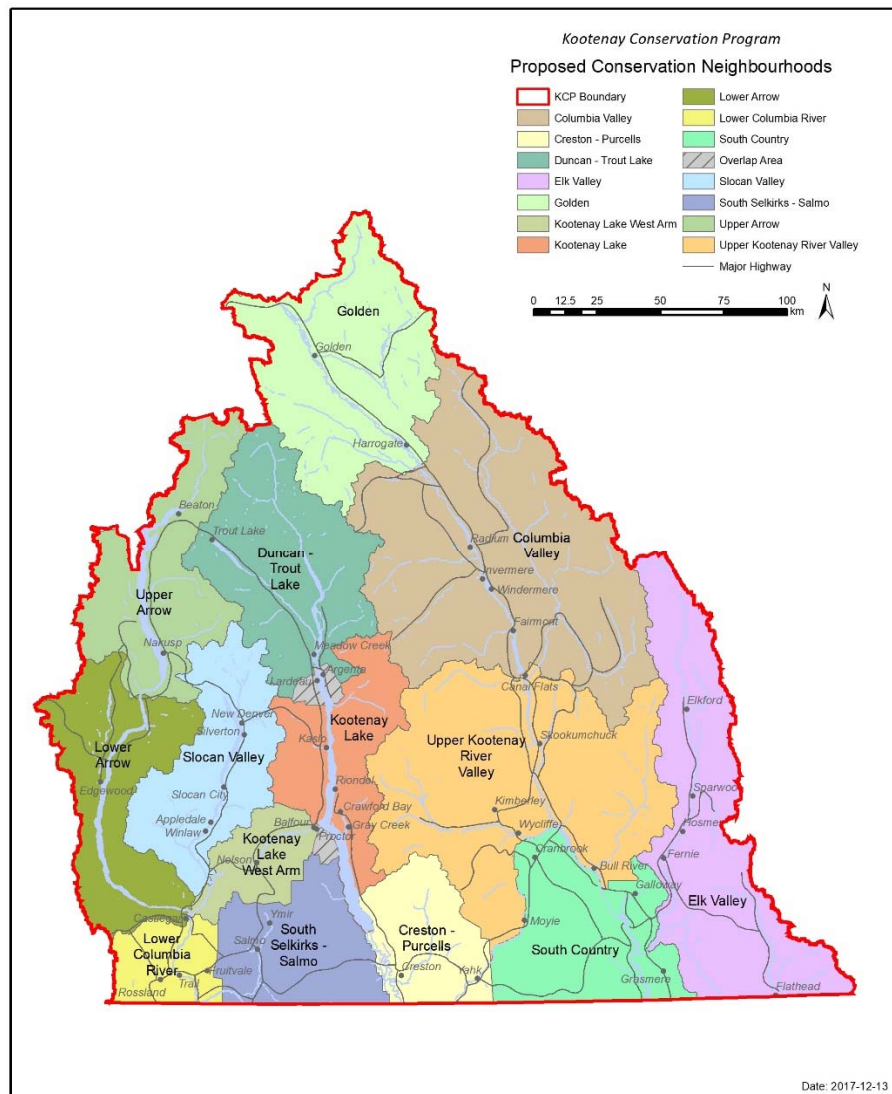


FIGURE 3. MAP OF THE 14 CONSERVATION NEIGHBOURHOODS IN THE KOOTENAYS.

**ELK VALLEY
CONSERVATION
NEIGHBOURHOOD**

The map displays the Elk Valley Conservation Neighbourhood in British Columbia, Canada. The valley itself is highlighted in blue, while surrounding areas are in grey. A legend in the top right corner identifies the blue area as the 'Elk Valley'. The map includes a north arrow and labels for neighboring provinces and states: British Columbia, Alberta, Washington, Idaho, and Montana. Numerous towns and cities are marked, including Golden, Kamloops, Kelowna, and Vancouver. The map also shows the Elk River and other water bodies within the valley.

III. CONSERVATION VALUES AND THREATS

Prior to the Forum, KCP prepared an initial list of conservation values and ecological threats for the Elk Valley. This list was sent to the participating scientists for their review and early input, and then summarized by KCP for further consideration at the Forum. The group discussion resulted in lists of values and threats (Tables 1 and 2).

Conservation values were defined as species, habitat types, wildlife habitat features, special landscape elements, and ecological processes that are targets for protective action. The values represent the biological diversity and unique habitats of the Elk Valley ecosystem which sustain its ecological integrity and healthy functioning (Table 1). Although listed independently, conservation values are interconnected and may nest under each other hierarchically. For example, habitat features may be embedded in particular habitat types or may be the result of certain ecological processes.

Threats were defined as negative impacts which may significantly stress or impair conservation values and directly impact species viability, habitat quality, or ecological functioning. These impacts are activities or processes that are causing or may cause the destruction, degradation and/or impairment of one or more of the identified conservation values (Table 2). Many, and likely all, of the conservation values will face combined stresses. Cumulative effects from these threats have been recognized in the Elk Valley through the current Cumulative Effects Management Framework⁴ that aims to assess the historic, current, and potential future conditions of selected valued components and to support natural resource management decisions within the region.

⁴ <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/cumulative-effects-framework/regional-assessments/kootenay-boundary/elk-valley-cemf>

TABLE 1. CONSERVATION VALUES FOR THE ELK VALLEY ECOSYSTEM

Species of interest and conservation concern	<ul style="list-style-type: none"> American Badger Wolverine American Marten Grizzly Bear Wolf Bighorn Sheep Mountain Goat Moose Mule Deer Rocky Mountain Elk American Beaver 	<ul style="list-style-type: none"> Little Brown Myotis Hoary Bat Silver-haired Bat Lewis's Woodpecker American Bittern Sandhill Crane Great Blue Heron Goshawks Peregrine Falcon Spotted Sandpipers Swallows (all) 	<ul style="list-style-type: none"> Clark's Nutcracker Western Screech-Owl Western Toad Rocky Mountain Tailed Frog Columbia Spotted Frog Western Painted Turtle Native bees Gillette's Checkerspot Bull Trout Westslope Cutthroat Trout 	<ul style="list-style-type: none"> Sculpin Dace Freshwater mussels Limber Pine Whitebark Pine Rare plants Traditionally important plants (balsamroot, highbush cranberry, wapato, mountain potato)
Important habitat types	<ul style="list-style-type: none"> Wetland Riparian area Mature cottonwood forest Low elevation grassland/ open forest Alpine meadows and tundra 	<ul style="list-style-type: none"> Mid and upper elevation grassland Low and mid elevation old growth forest (incl. dry Douglas-fir and moist cedar, spruce) 	<ul style="list-style-type: none"> Alluvial fans / creek mouths Floodplains Lake foreshore Ponds and Lakes Rivers and streams 	<ul style="list-style-type: none"> Groundwater-surface water interface (warm water spring; mineral springs; cold water source)
Special habitat features	<ul style="list-style-type: none"> Fish spawning bed Mainstem spawning habitat Fish feeding / rearing area Large, old trees, either in patches or as isolated remnants 	<ul style="list-style-type: none"> Nesting and/or roosting site Burrows or denning area Migratory stopover site Bat hibernaculum (old mines, rock caves, surrounding forest) Abandoned buildings 	<ul style="list-style-type: none"> Steep-sided slopes / Clay banks Mineral lick Wildlife tree Climax grassland Huckleberry patches 	<ul style="list-style-type: none"> Calcareous rock / soils Ice field / glacier Wildlife corridors Rocky outcrops Rock cave
Ecological processes	<ul style="list-style-type: none"> Hydrologic functions (filtering, recharge, flooding, storage) Nutrient dynamics 	<ul style="list-style-type: none"> Wildlife movement and migration Predator-prey dynamics Natural fire regime 	<ul style="list-style-type: none"> Breeding and nesting Fish spawning and rearing Fish over-wintering 	<ul style="list-style-type: none"> Geomorphological processes (erosion, sedimentation, large woody debris, gravel)

TABLE 2. ECOLOGICAL THREATS FOR THE ELK VALLEY ECOSYSTEM

<p>Direct loss or impairment of habitats and species</p>	<ul style="list-style-type: none"> • major commercial or residential development/urban sprawl • conifer and shrub encroachment on native grassland • extensive logging and road building • barriers to wildlife corridors • transportation corridors and hydro lines • wildlife collisions on transportation corridors (highways/railways) • human-wildlife conflict (e.g. attractants) • fire and fire suppression • coal mining and coal mine expansion • mining and gravel extraction • stream bank erosion and sedimentation • loss of large woody debris and gravel and rocks and sediment due to climate change and human activity • agricultural expansion and/or intensification • over-grazing or poor range management • unsustainable harvesting of native species and poaching (e.g. aquatic vegetation, fish and wildlife, native plants) • harvesting and falling of wildlife trees • natural system modification (water diversion, dams and water management, groynes, docks, floodplain impingement) • declining water quality • persecution and extermination of wildlife • mine closures (providing bat hibernacula) • use of <i>Bacillus thuringiensis</i> subspecies <i>israelensis</i> (BTI) for mosquito control • herbicide/pesticide run-off
<p>Invasive species (Existing and Potential)</p>	<ul style="list-style-type: none"> • zebra & quagga mussels • invasive plants (e.g. common tansy, orange hawkweed, rush skeletonweed, scentless chamomile, blueweed) • domestic pig/ wild boar • chytrid fungus • chronic wasting disease (CWD) • whirling disease • non-native fish (e.g. rainbow trout, eastern brook trout) • fungus causing white-nose syndrome • white pine blister rust • domestic sheep and goat diseases infecting native Bighorn Sheep • creation of linear corridors increasing spread
<p>Recreational pressure</p>	<ul style="list-style-type: none"> • increased trail and off-trail usage (e.g. multi-use and non-motorized use) • increased new and unauthorized trail building • increased access to backcountry and high alpine areas (all seasons) • increased human activity in the wetlands • increased presence of planes, drones, helicopters
<p>Uncertainty of climate change impacts</p>	<ul style="list-style-type: none"> • vegetational changes / habitat shifting • changing species distributions • catastrophic fire • hydrological changes causing floods or extreme drought

	<ul style="list-style-type: none"> • mudslides / landslides • increasing stream temperature • loss of snowpack / loss of cold water creeks • forest pest spread (e.g. mountain pine beetle, spruce beetle, Douglas-fir beetle, etc.) • wildlife disease spread • water impoundments and other water storage may affect hydrology
Cumulative effects	<ul style="list-style-type: none"> • impacts from a combination of multiple threats (see Elk Valley CEMF)

IV. DEVELOPING CONSERVATION PRIORITIES

SCIENCE PRESENTATIONS

The Forum began with scientists providing four-minute speed presentations of their research findings and sharing their “top three recommendations that would make the biggest difference” in keeping the Elk Valley ecologically healthy and functioning (Appendix B). Some researchers who could not attend the Forum also provided recommended actions which were integrated into the list.

Science presentations included:

1. **Bighorn Sheep** – Kim Poole, Wildlife Biologist, Aurora Wildlife Research
2. **Rocky Mountain Elk** – Kim Poole, Wildlife Biologist, Aurora Wildlife Research
3. **Grizzly Bears** – Clayton Lamb, PhD Candidate, University of Alberta
4. **Fish and Fish Habitat** – Gerry Oliver, Retired Fisheries Biologist, VAST (presented by Juliet Craig, KCP)
5. **Wildlife Crossings and Highway Mitigation** – Randal Macnair, Elk Valley Conservation Coordinator, Wildsight
6. **Rare and Traditionally Used Native Plants** – Michael Keefer, Ecologist, Keefer Ecological Services
7. **Old Growth Forests and Rare Plant Habitats** – Deb MacKillop, Research Ecologist, MFLNRORD
8. **Riparian, Wetland and Floodplain** – Katrina Caley, Project Biologist, Ktunaxa Nation Council
9. **Gravel Bed Floodplains** – Dr. Richard Hauer, Director, Center for Integrated Research on the Environment, University of Montana
10. **Kootenay Connect: Landscape Linkage Areas** – Dr. Michael Proctor, Research Biologist, TransBorder Grizzly Project and Marcy Mahr, Ecologist, EcoMosaic Consulting (presented by Juliet Craig, KCP)

THEMES GUIDING SMALL GROUP DISCUSSIONS

Key recommendations presented by scientists were submitted to KCP staff in advance of the Forum so the information and recommendations could provide a starting place for: a) group discussion of key conservation values and threats; and b) small group review of the catalogue of scientists' recommendations for actions based on six conservation themes:

1. Take a landscape-level approach to conservation
2. Protect existing high-quality habitat
3. Enhance and restore degraded ecosystems
4. Reduce human-wildlife conflict and recreational pressure
5. Address cumulative effects
6. Conserve populations of species of concern.

Although Themes 2 and 3 could have been combined, they were separated to allow for special focus on Ecosystem Enhancement since the Columbia Basin Trust will be funding landscape-level ecosystem enhancement projects in the Elk Valley in the coming year⁵ and project ideas are due on July 31, 2019.

During the Forum, action plans were developed around four of the above themes. The theme of "address cumulative effects" was not discussed separately since the recommendations from the Cumulative Effects Management Framework (CEMF) are not yet available. Also, breakout groups around "conserve populations of species of concern" was not directly discussed since the habitat that affect many species were considered a more collaborative topic.

Each individual selected their *top three actions* using adhesive dots on flip charts (provided for this purpose) that they thought would make the most difference in the Elk Valley over the next five years and that they would be interested in working on. This process resulted in the top 12 actions discussed in the next section.

CONSERVATION PRIORITIES

The top conservation actions chosen by the participants (based on those receiving at least 2 votes) and *listed in no particular order* are as follows:

1. Take a **landscape level approach** to identifying local wildlife corridors and connectivity areas both east/west and north/south that include diverse habitats and elevational gradients in order to capture the extent of important habitat, biodiversity, and

⁵ <https://ourtrust.org/grants-and-programs-directory/ecosystem-enhancement-program/>

ecological processes; Collect and compare existing corridor maps from various organizations and experts at various scales; Map key wildlife habitat, corridor and refuge areas and work to develop stewardship actions with Crown, municipal and private landowners; Protect existing connected habitats for wildlife migration and movement by supporting land conservation and stewardship efforts on public and private lands; Identify strategic land purchases or conservation easements in identified linkage areas such as Big Ranch, Morrissey and Hosmer areas.

2. **Map, prioritize, and secure high-quality habitats** (e.g. old growth forest, wetland and riparian, grassland, badger habitat); Identify threats (e.g. fencing, grazing, logging); Purchase ecologically intact CanWel lands focusing on biodiversity hot spots (e.g. Corbin-Alexander); Identify priority management regimes for each corridor – what needs to be done and who needs to do it.
3. **Land use planning co-led by province and Ktunaxa** (collaborative stewardship initiatives) also involving regional districts and municipalities to minimize development in identified priority linkage areas (not necessarily zero development, but appropriate and minimized); Evaluate how OCP Corridors link up to landscape-level scale.
4. **Access management (including legislation, reclamation, deactivation, mixed use planning, etc.).** Recognition of all recreational impacts - motorized (summer & winter), non-motorized trail construction and mountain bike riding (mechanized); Implement road deactivation prioritization process on Crown and private lands in the region; Engage in planning that is considerate of multiple uses, seasons and applies a conservation perspective to “designed use”; Reduce road density to 0.6 km/km² in the valley from current >1 km/km²; Reduce access and recreational disturbance of bighorn sheep in high elevations; Consider efforts to minimize motorized access in heavily roaded areas around important huckleberry patches and high-quality habitat used by grizzly bears.
5. **Protect high quality habitat by purchasing ecologically intact CanWel lands.** Identify biodiversity hot spots and strategically purchase parcels.
6. **Protect high and low elevation and red-listed grassland ecosystems.** Avoid development, monitor grazing pressure (low elevation); Protect ungulate winter range as well as summer elk habitat: Avoid development that could impact core bighorn sheep winter ranges.
7. **Protect old growth and mature forest.** Re-evaluate the current suite of old growth management areas (OGMA) and Mature Management Areas (MMA, spatial and non-spatial); Select areas for old forest recruitment, where required, that will achieve old forest values in the shortest timeframe possible; Increase areas of old forest retention to better align with natural disturbance patterns and to account for climate change;

- Identify the highest priority/value old forests and prioritize for added protection. (1)
8. **Protect, restore and enhance riparian wetland and floodplain habitats**, including conservation opportunities for Crown, municipal and private lands; Follow existing laws and regulations for public lands; Protect and enhance cottonwood floodplain forests, including assessing and remediating over-grazing and working with private landowners to avoid destruction (note that cottonwood floodplain forests are red- and blue-listed); Do not develop on gravel bed floodplains; Identify wetlands in reference condition (least impacted) to provide a baseline for restoration using a scientifically validated technique; Build long-term data sets for small wetlands. Continue to apply Best Management Practices; Develop strategies for addressing riparian disturbances on private lands; Especially concentrate on maintaining and/or enhancing water sources for wetlands and ponds; Protect and enhance cottonwood floodplain forests, including assessing and remediating over-grazing issues and working with private landowners to avoid destruction (note that cottonwood floodplain forests are red- and blue-listed).
 9. **Improve productive high elevation huckleberry habitat** through changes to silvicultural practices that encourage longer term huckleberry productivity following logging in key highly productive areas for huckleberries; Address commercial huckleberry picking/use.
 10. **Restore ungulate winter range.** Monitor and improve range condition in moderately and highly impacted winter ranges; Improve transitional and summer elk habitats.
 11. **Restore and enhance quality spawning habitat** for bull trout and westslope cutthroat trout and other priority fish species in the Elk River and tributaries; Restore/maintain fish passage at appropriate locations; Conduct large scale restoration projects; Restore deep pools for over-wintering habitat; Identify potential stream and fish restoration projects to restore and/or improve the capacity of existing fish habitat – for example, restoring tributary streams used for spawning that have been impacted by road building, historical forest practices and channelization.
 12. **Support practices and programs that promote coexisting with wildlife** to reduce chances for mortality and to allow wildlife secure passage around human-settled areas. Reduce road and railroad mortality such as installing wildlife crossing structures and/or fencing in high use and high impact areas; Fence off highway, railway, and city areas and use crossing structures to get animals across these areas; Reduce vehicle/train-elk collisions; Reduce attractants (roadkill carcass pits, introduced spawning Kokanee, and fruit trees); Encourage enforcement of all bear attractant management within municipalities; Consider creative approaches to supporting fruit removal from trees.

V. ELK VALLEY FORUM ACTION PLANS

Of these 12 Priority Actions, participants selected six to begin moving forward on given current opportunities within their organization's or agency's plans, policies, programs, budgets and communication tools. The first two action plans were developed as a large group and the remaining four were developed in small group breakout sessions.

ACTION #1: TAKE A LANDSCAPE-LEVEL APPROACH

Representatives from: Entire group

Take a landscape level approach to identifying local wildlife corridors and connectivity. Map key wildlife habitat, corridor and refuge areas. Protect existing connected habitats. Planning co-led by Ktunaxa and province (collaborative stewardship initiative). Land use planning includes regional districts and municipalities to minimize development in identified priority linkage areas.

Activities

- Map key habitats and corridors (see Figure 5 for a preliminary map of local knowledge).
- Identify linkage areas. Consider wildlife mortality on Highway 3. Crossing structures are required for safe passage. East Flathead and West Elk corridors are intact. Corbin-Alexander is a landscape corridor.
- Three general 'zones': Intact Crown land, industrial impacts, urban interface.

Resources Required

- Mapping to identify high quality habitats
- Canfor High-Value Habitat mapping information
- CDC database for species at risk.
- Key areas for bighorn sheep, grizzly bears, Rocky Mountain elk and other species.
- Rare habitats (based on new BEC zones)

Potential funding sources: ?

Potential partners/collaborators: Ktunaxa, MFLNRORD, local government, Kootenay Connect.
No lead identified.

Timeframe: 5 years.

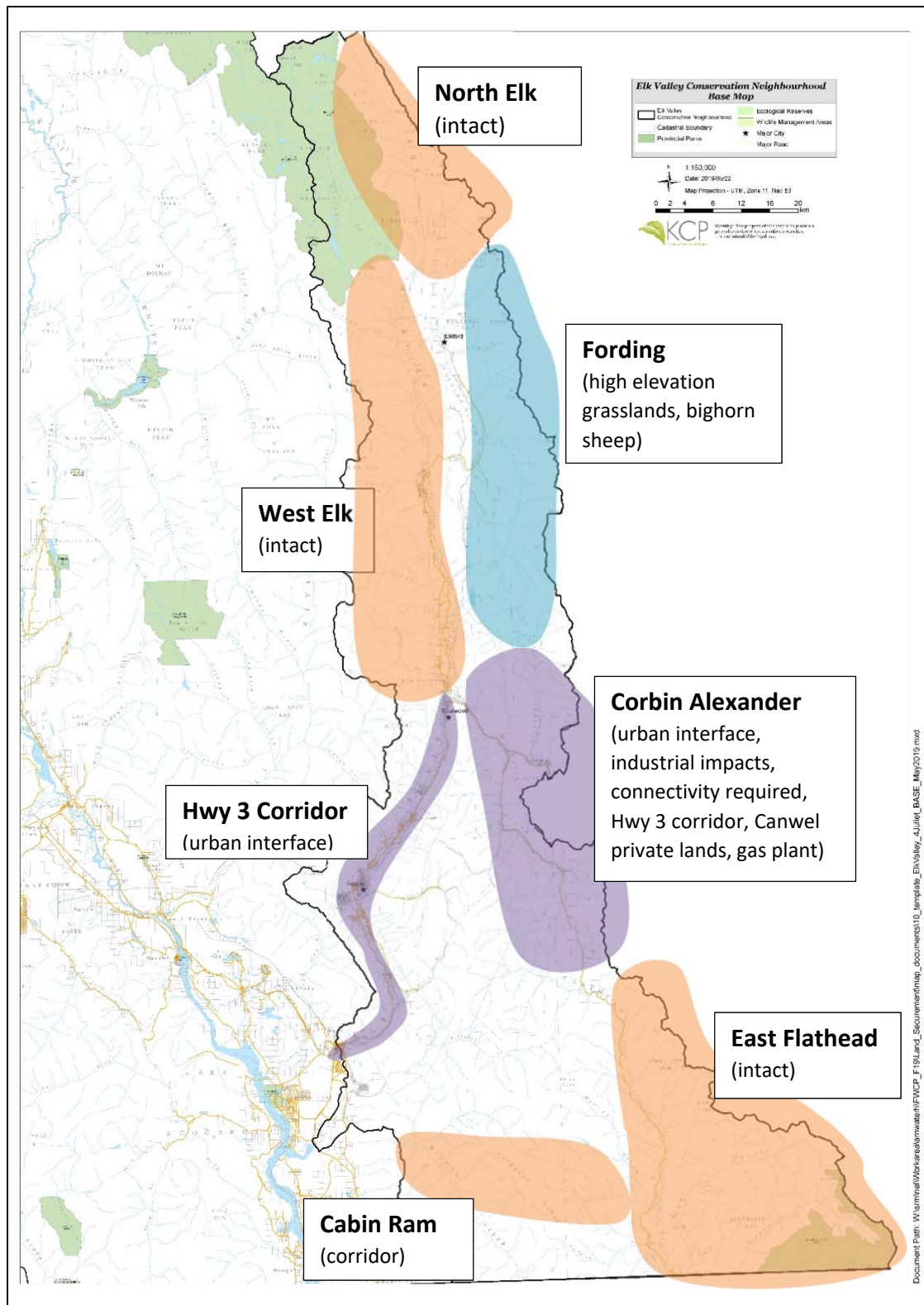


FIGURE 5: LANDSCAPE-LEVEL CONSERVATION AND LINKAGE 'ZONES' IDENTIFIED BY PARTICIPANTS.

ACTION #2: PURCHASE HIGH QUALITY HABITATS - PURCHASE ECOLOGICALLY INTACT CANWEL LANDS

Representatives from: Entire group

Protect and secure high quality habitats (see Figure 6 for current conservation lands). Large parcels of high value lands that are under immediate threat of logging are the CanWel lands. The protection of these lands was a high priority for participants.

Activities

- Identify biodiversity hotspots within CanWel lands (e.g. Corbin-Alexander).
- Determine if these properties can be purchased.

Resources Required

- Industry offsets. Federal EcoGifts program through Canada Revenue

Potential funding sources: Teck. Columbia Basin Trust.

Potential partners/collaborators: Wildsight (lead), Teck, Sparwood Fish and Wildlife Association, Elkford Rod and Gun Club, scientists (e.g. Clayton Lamb), Nature Conservancy of Canada

Timeframe: 5 years.

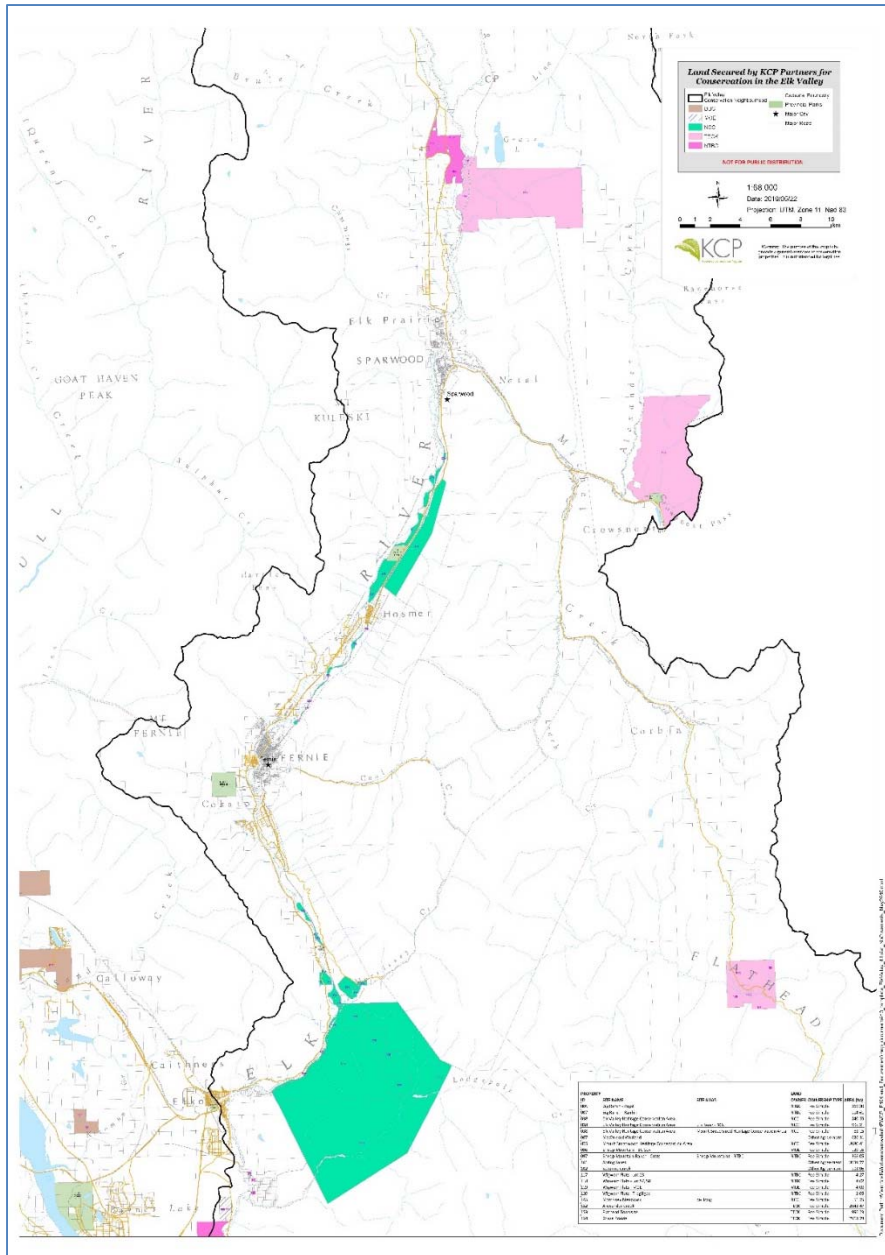


FIGURE 6: CONSERVATION PROPERTIES (NO COVENANTS) AND TECK CONSERVATION LANDS IN ELK VALLEY.

ACTION #3: ACCESS MANAGEMENT HABITAT RESTORATION (LAND AND WATER) – TRAILS AND ROAD

Representatives from: MFLNRORD, Wildsight (Branch), NWP Coal, East Kootenay Wildlife Association.

Access management (including legislation, reclamation, deactivation, mixed use planning, etc.). Reduce road density to 0.6 km/km² in landscape units or 60% secure habitat for Grizzly Bear. Consider high quality bighorn sheep habitat, huckleberry patches, and other conservation values.

Activities

- Trail strategy (part of Access strategy). Consider trail building impacts (i.e. width and ease of access).
- Be proactive – connect with Allana regarding legislative tools. Explore ‘crosswalk’ opportunities between legislation (Acts).
- Map priority ecological areas, First Nations values, wetlands.
- Review existing plans/restrictions.
- Contact/involve recreation sites, trails, Cumulative Effects Management Plan Framework.

Resources Required

- Funding for road/trail rehabilitation.
- Time to write applications.

Potential funding sources: Teck? Columbia Basin Trust.

Potential partners/collaborators: Wildsight (lead), partners include MFLNRORD, Sparwood Fish and Wildlife Association, Elkford Rod and Gun Club, Canfor, Teck, NWP Coal.

Timeline: Apply to Columbia Basin Trust Ecosystem Enhancement Program by July 31.

ACTION #4: BIGHORN SHEEP HABITAT RESTORATION

Representatives from: MFLNRORD, Aurora Wildlife Research, Sparwood Fish and Wildlife Association, Elkford Rod and Gun Club, Nature Trust of BC, Teck, BC Backcountry Hunters and Anglers Association, Elk Valley Bighorn Outfitters.

Protect, restore and enhance bighorn sheep habitat.

Activities

- Elk Valley West (Priority #1) – Habitat condition is unknown so need habitat assessment. 5 sites already identified (e.g. Sulfur Creek, Brule, Forsythe Creek (already in motion – reintroduction of fire).
- Elk Valley East (Priority #2) – Manage invasive plants, grassland enhancement, reintroduction of fire. Winter ranges on Turnbull, Imperial Ridge, part of Ewin Ridge, and Henretta assessed as moderately to highly impacted in the early 2010s (Clint Smith, working for Teck).
- Wigwam (Priority #3) – invasive plants, ingrowth, competition issues.
- See Figure 7 for general areas.

Resources Required

- MFLNRORD FWCP - Larry Ingham has lots of data.
- MFLNRORD - Allana Oestreich.
- CDC Element Occurrence Mapping.
- Aurora Wildlife Research data (Kim Poole).
- Teck has data on vegetation monitoring at many sites in Elk Valley East.
- Population objectives are being released soon as part of the Kootenay Region bighorn sheep management plan (already in development); habitat objectives will be drafted.
- FWCP Burn Assessment Protocol (invasives).

Barriers:

- Information gaps on winter range habitat (minimum area required to support sheep).
- Wildlife Management branch capacity.
- No collar data in Elk Valley West, so movements and habitat selection unknown.

Potential funding sources: HCTF Restricted Funding.

Potential partners/collaborators:

- Elk Valley West: MFLNRORD (Irene Teske, Allana Oestreich) MFLNRORD partnership (Collaring project), local fish and wildlife associations.
- Elk Valley East: MFLNRORD (Irene Teske, Allana Oestreich), Geoff Byford Tanglefoot Forestry Consultants (Stand Management Prescriptions), Teck (closer to shelf-ready projects although assessments outdated).
- Wigwam: MFLNRORD (Irene Teske, Allan Oestreich), BC Hydro, MFLNRORD – FWCP (Larry Ingham).

Timelines:

- Elk Valley West Priority #1: Habitat Assessments
 - Dylan Forsyth (Elkford Rod and Gun Club) to initiate partnership with MFLNRORD, Wild Sheep Society of BC, Aurora (6 months)
 - Kim Poole – Bighorn Sheep management plan - MFLNRORD (6 months)
- Elk Valley East Priority #2
 - Update assessment and prescription development for winter ranges known or suspected to be impacted
 - CEMPF related timeline

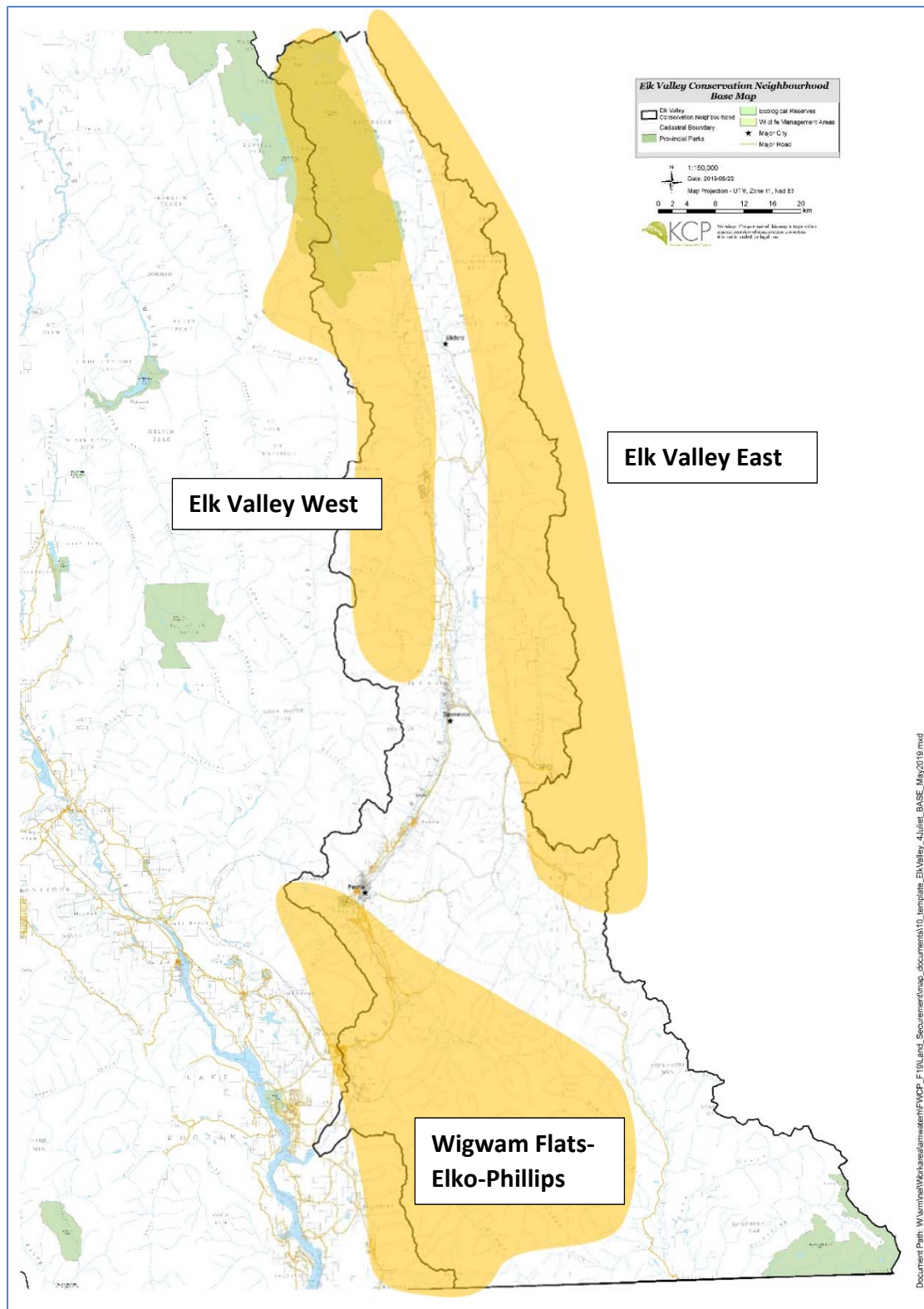


FIGURE 7: PRIORITY AREAS FOR BIGHORN SHEEP HABITAT RESTORATION.

ACTION #5: RIPARIAN/WETLAND RESTORATION – LANDSCAPE LEVEL

Representatives from: Elk River Alliance, Ktunaxa Nation Council, Sparwood Fish and Wildlife Association, Nature Trust of BC, Nature Conservancy of Canada.

Map, prioritize, protect, secure and enhance high quality habitats including riparian, wetland and floodplain habitat including conservation opportunities for Crown, municipal and private lands.

Activities

- Baseline mapping – ground confirm.
- Prioritize sites – disturbed/degraded, cultural.
- Align stakeholders – First Nations, community, private and public lands.
- Proposal for Columbia Basin Trust?
- Detail: ready mix site is a good candidate.

Resources Required

- Existing maps/data (species at risk).
- Technical/field expertise.
- Ktunaxa elders/knowledge holders.
- Local knowledge.
- BC Wildlife Federation.

Barriers: Short time, multi-stakeholder, funding, legal regulations

Potential funding sources: Columbia Basin Trust

Potential partners/collaborators: Elk River Alliance (lead). Look to approach joint lead with Ktunaxa.

Timeline: Draft proposal by June 30. Apply to Columbia Basin Trust Ecosystem Enhancement Program by July 31.

ACTION #6: WILDLIFE CROSSINGS – TRANSPORTATION AND TOWNS

Representatives from: Wildsight Elk Valley, Teck, University of Alberta, NWP Coal, KCP Communications.

Install and maintain highway and railway crossings to reduce wildlife vehicle collisions. Full mitigation will reduce collisions upwards of 98%, increasing human and wildlife safety and benefiting wildlife populations.

Activities

- Form Elk Valley Wildlife and Safe Transportation Working Group/Committee – develop a tactical plan for implementing fencing and crossing structures in the Elk Valley as well as other potential mitigation strategies.
- Develop outreach plan with the key goals of securing public support and securing resources (land and funding), could hire a consultant.

Resources Required

- Data and information (already have much of what is required).
- Land (have some land secured).
- Stakeholder participation (already have some but may broaden it out somewhat).

Barriers: bureaucratic challenges, community engagement

Potential funding sources: Grants, Ministry of Transportation and Infrastructure, private donors, Columbia Basin Trust, ICBC

Potential partners/collaborators: Wildsight (lead), Teck, Nature Conservancy of Canada (NCC), provincial government, local government, non-profit societies and community groups (e.g. mountain bike clubs), Elkford Rod and Gun Club, Fernie Rod and Gun Club, Sparwood Fish and Wildlife Association, Ktunaxa Nation Council, general public, academics (Lamb, UBCO- Adam Ford, Tony Clevenger, Tracy Lee-Miistakis)

Timeline:

- May 28 Workshop Summary – June ?
- Form Working Group – July 15
- Working Group to meet – September
- Hwy 3 Mitigation report finalized – July 30

VI. POTENTIAL FUNDING SOURCES

Three potential funding sources were highlighted at the Forum and there are other funding sources available for these action plans.

COLUMBIA BASIN TRUST ECOSYSTEM ENHANCEMENT PROGRAM⁶

The goal of this program is to help maintain and improve ecological health and native biodiversity in a variety of ecosystems, such as wetlands, fish habitat, forests and grasslands. The program will run for five years with a budget of \$10 million. The Trust will identify projects focused on enhancement, restoration and conservation by seeking input from community groups, First Nations representatives and government experts, and reviewing existing regional plans and research. The Trust will work with organizations to initiate and/or support projects in the Elk Valley in the next phase. Project ideas for the Elk Valley are due on July 31, 2019.

LOCAL CONSERVATION FUNDS⁷

Kootenay Conservation Program worked closely with the Regional District of East Kootenay (RDEK) in 2008 to establish the Columbia Valley Local Conservation Fund. Taxpayers in the Columbia Valley voted by referendum to pay a parcel tax of \$20/parcel/year into this local government service to support conservation in their Valley. The first of its kind in Canada, this fund has generated \$1.7 million for conservation projects in the past ten years including land securement and stewardship projects. KCP worked with the Regional District of Central Kootenay (RDCK) to establish the Kootenay Lake Local Conservation Fund in three electoral areas of the Kootenay Lake area in 2014. KCP recently completed market research polling to determine where to focus efforts for expanding the conservation fund. An Elk Valley Local Conservation Fund could potentially support the actions in this plan if it were established.

HABITAT CONSERVATION TRUST FOUNDATION (HCTF) – BIGHORN SHEEP FUND⁸

HCTF has \$298,000 available for the conservation or enhancement of biological diversity, Bighorn Sheep or Sheep habitat, with a preference for projects in the Elkford, Sparwood and Fernie areas of the Elk Valley of B.C.

OTHER

Other potential funding sources for actions in this plan include the Fish and Wildlife Compensation Program – Columbia Basin and industry partners such as Teck.

⁶ <https://ourtrust.org/grants-and-programs-directory/ecosystem-enhancement-program/>

⁷ <https://kootenayconservation.ca/cv/cf/>

⁸ <https://hctf.ca/apply-for-funding/enhancement-grants/eligibility-restricted-funding/>

VII. MOVING FORWARD

All Forum participants, as well as those people who were invited but could not attend, will be provided the Forum's findings and will be encouraged to pursue actions as they are able. The priority actions were collectively generated and incorporated policies, objectives and activities that align with participants' programmatic interests. Participants indicated that they would like to meet again within one year to check-in on actions. KCP will organize a check-in meeting in winter of 2020.

Missing groups that were noted at this Forum include: Local and regional government and politicians (RDEK, MLA, MP), forest companies (CanWel, Canfor), ranchers, CPR, MOTI, tourism, agriculture, other industry, Fernie Rod and Gun Club, BC Timber Sales, Forest District staff, MEMPR, BC Cattleman's Association, Kootenay Livestock Association, FRPA representation.

Neighbourhood Conservation Action Forum provided the Kootenay Conservation Program with a new way to approach conservation by working in the local context of a "conservation neighbourhood" to assist KCP partners in identifying common priorities and objectives for on-the-ground conservation and stewardship activities. This approach supports KCP's partners in developing collaborative action plans that identify conservation targets and propose solutions to mitigating threats in their local neighbourhood.

All participants at the Forum indicated on their evaluation form that they would recommend this process to other regions in the Kootenays. According to participant evaluations, 98% of participants rated the Forum "helpful" to "super helpful." Evaluations included the following benefits:

- *Elk Valley groups and industry have been collaborative for years and Forums like this just strengthen the relationships*
- *The number of folks interested and concerned about the state of biodiversity in the Valley.*
- *Open, engaged dialogue; Broad engagement and shared interests.*
- *Coming up with collaborative actionable plans.*
- *Networking and information sharing; Knowledge on all topics was available in the room.*
- *Links to potential funding.*
- *The breakout groups are an amazing opportunity to share knowledge and experiences and to get potential projects sketched out.*
- *Learning about the project ideas and seeing the willingness of collaborators.*

KCP will remain engaged in supporting the Elk Valley process and tracking the implementation of priority actions.

APPENDIX A: ELK VALLEY FORUM PARTICIPANTS

Name	Organization
Allana Oestreich	MFLNRORD
Beth Millions	Elk River Alliance
Bill Hanlon	British Columbia Backcountry Hunters and Anglers Association
Cassidy VanRensen	MFLNRORD
Chris Bosman	The Nature Trust of BC
Clayton Lamb	University of Alberta
Darren Reghenas	Sparwood and District Fish and Wildlife Association
Deb Mackillop	MFLNRORD
Dylan Forsyth	Elkford Rod and Gun Club
Joe Strong	The Nature Trust of BC
John Bergenske	Wildsight
Juliet Craig	Kootenay Conservation Program
Kai Peetoom	MFLNRORD
Katrina Caley	Ktunaxa Nation Council
Kevin Podrasky	Sparwood and District Fish and Wildlife Association
Kim Poole	Aurora Wildlife Research
Krista Watts	Columbia Basin Trust
Leah Andresen	Keefer Ecological Services for NWP Coal
Michael Keefer	Keefer Ecological Services for NWP Coal
Nic Milligan	Teck
Nicole Trigg	Kootenay Conservation Program
Paul von Wittgenstein	Elk River Alliance
Randal Macnair	Wildsight (Elk Valley)
Richard Klafki	Nature Conservancy of Canada
Rick Hoar	East Kootenay Wildlife Association
Sam Medcalf	Elk Valley Bighorn Outfitters

Note that representatives from the following organizations were also invited to attend:

BC Parks, Canfor, CanWel, City of Fernie, Crown Mountain Project, East Kootenay Invasive Species Council, Fernie Rod and Gun Club, Heart of the Rockies, Kootenai Nature Investigations, Packhorse Creek Outfitters, Regional District of East Kootenay, Tobacco Plains First Nation, University of Montana, and Yellowstone to Yukon Conservation Initiative.

APPENDIX B: CATALOGUE OF “TOP RECOMMENDATIONS THAT WILL MAKE A DIFFERENCE”

The number in brackets indicates the number of participants who rated this action in their “top 3”.

THEME #1: TAKE A LANDSCAPE-LEVEL APPROACH TO CONSERVATION

- Take a **landscape level approach** to identifying local wildlife corridors and connectivity areas both east/west and north/south that include diverse habitats and elevational gradients in order to capture the extent of important habitat, biodiversity, and ecological processes. Collect and compare existing corridor maps from various organizations and experts at various scales. Map key wildlife habitat, corridor and refuge areas and work to develop stewardship actions with Crown, municipal and private landowners. Protect existing connected habitats for wildlife migration and movement by supporting land conservation and stewardship efforts on public and private lands. Identify strategic land purchases or conservation easements in identified linkage areas such as Big Ranch, Morrissey and Hosmer areas. (14)
- **Map, prioritize, and secure high-quality habitats** (e.g. old growth forest, wetland and riparian, grassland, badger habitat). Identify threats (e.g. fencing, grazing, logging). Purchase CanWel lands focusing on biodiversity hot spots. Identify priority management regimes for each corridor – what needs to be done and who needs to do it. (7)
- **Land use planning co-led by province and Ktunaxa** (collaborative stewardship initiatives) also involving regional districts and municipalities to minimize development in identified priority linkage areas (not necessarily zero development, but appropriate and minimized). Evaluate how Official Community Plan (OCP) Corridors link up to landscape-level scale. (2)
- **Develop stewardship arrangements** on private lands, within corridors and high conservation value forests or ecosystems.
- **Address climate change. Identify and manage potential climate change cool refugia** – both terrestrial and aquatic – for climate change resilience.

THEME #2: PROTECT EXISTING HIGH-QUALITY HABITAT

- **Protect high and low elevation and red-listed grassland ecosystems.** Avoid development, monitor grazing pressure (low elevation). (3)
- **Protect ungulate winter range as well as summer elk habitat.** Avoid development that could impact core sheep winter ranges. (4)
- **Protect old growth and mature forest.** Re-evaluate the current suite of old growth management areas (OGMA) and Mature Management Areas (MMA, spatial and non-spatial). Select areas for old forest recruitment, where required, that will achieve old forest values in the shortest timeframe possible. Increase areas of old forest retention to better align with natural disturbance patterns and to account for climate change. Identify the highest priority/value old forests and prioritize for added protection. (2)
- **Protect riparian wetland, and floodplain habitats,** including conservation opportunities for Crown, municipal and private lands. Follow existing laws and regulations for public lands. Protect and enhance cottonwood floodplain forests, including assessing and remediating over-grazing issues and working with private landowners to avoid destruction (note that cottonwood floodplain forests are red- and blue-listed). Do not develop on gravel bed floodplains. Identify wetlands in reference condition (least impacted) to provide a baseline for restoration using a scientifically validated technique. Build long-term data sets for small wetlands. (5)
- **Improve productive high elevation huckleberry habitat** through changes to silvicultural practices that encourage longer term huckleberry productivity following logging in key highly productive areas for huckleberries. Address commercial huckleberry picking/use. (2)
- **Adjust forestry practices** to accommodate extreme climate and flooding events to reduce likelihood of landslides and waterborne erosion – i.e. avoid activities on or above unstable slopes, reduce watershed road density, transition species and stand structures to align with projected climates, and limit equivalent clearcut area. (1)
- **Promote private land stewardship.** Increase awareness by local governments about high quality habitats (e.g. private land, OCPs, zoning, subdivisions) and provide education/outreach to private landowners. Provide education/outreach to landowners about important habitats (e.g. floodplains, wetlands, grasslands).

THEME #3: ENHANCE AND RESTORE DEGRADED ECOSYSTEMS

- **Restore dry open forest and grassland:** Fire treatment (in areas that do not have invasive plants, as burning spreads invasive plants where present), forest thinning, good range practices.
- **Restore ungulate winter range:** Monitor and improve range condition in moderately and highly impacted winter ranges. Improve transitional and summer elk habitats. (3)
- **Promote fire enhancement and address wildfire fuel loads** to reduce the likelihood of landscape-scale fires. Utilize ecosystem evaluation and risk assessment. Treat low elevation and mid-elevation areas on south aspects areas to reduce fire risk and promote ecosystem resiliency. At lower elevations maintain fire resistant trees species of dry forest types such as ponderosa pine, Douglas fir and western larch and reduce fuels around them so they are more likely to survive intense fire.
- **Restore and enhance riparian wetland, and floodplain habitats,** including conservation opportunities for Crown, municipal and private lands. Follow existing laws and regulations for public lands. Continue to apply Best Management Practices. Develop strategies for addressing riparian disturbances on private lands. Especially concentrate on maintaining and/or enhancing water sources for wetlands and ponds. Protect and enhance cottonwood floodplain forests, including assessing and remediating over-grazing issues and working with private landowners to avoid destruction (note that cottonwood floodplain forests are red- and blue-listed). (2)
- **Restore and enhance quality spawning habitat** for bull trout and westslope cutthroat trout and other priority fish species in the Elk River and tributaries. Restore/maintain fish passage at appropriate locations. Conduct large scale restoration projects. Restore deep pools for over-wintering habitat. Identify potential stream and fish restoration projects to restore and/or improve the capacity of existing fish habitat – for example, restoring tributary streams used for spawning that have been impacted by road building, historical forest practices and channelization. (3)
- **Improve productive high elevation huckleberry habitat** through changes to silvicultural practices that encourage longer term huckleberry productivity following logging in key highly productive areas for huckleberries. Address commercial huckleberry picking/use. (2)
- **Restore Whitebark pine ecosystem:** Identify candidate rust resistant parent trees and work to collect cones; submit material to screening programs; and protect these trees from mountain pine beetle and development.
- **Build resilience to climate change for all ecosystem types.**

- **Conduct ecosystem restoration within areas with low invasive plants;** maintain the degree of invasive plant invasion low. Manage high priority invasive species as per the East Kootenay Invasive Species Council priority lists. Treat existing invasive plant infestations and prevent spread. Continue education and outreach to prevent introduction and spread of invasive species in the Elk Valley using behaviour change messaging.

THEME #4: REDUCE HUMAN-WILDLIFE CONFLICT AND RECREATIONAL PRESSURE

- **Access management (including legislation, reclamation, deactivation, mixed use planning, etc.)** - recognition of all recreational impacts - motorized (summer & winter), non-motorized trail construction and mountain bike riding (mechanized). Implement road deactivation prioritization process on Crown and private lands in the region. Engage in planning that is considerate of multiple uses, seasons and applies a conservation perspective to “designed use”. Reduce road density to 0.6 km/km² in the valley. We are currently >1 km/km². Reduce access and recreational disturbance of sheep in high elevations. Consider efforts to minimize motorized access in heavily roaded areas around important huckleberry patches and high-quality habitat used by grizzly bears. (10)
- **Support practices and programs that promote coexisting with wildlife** to reduce chances for mortality and to allow wildlife secure passage around human-settled areas. Reduce road & railroad mortality such as installing wildlife crossing structures and/or fencing in high use and high impact areas. Fence off highway, railway, and city areas and use crossing structures to get animals across these areas. Reduce vehicle/train-elk collisions. Reduce attractants (roadkill carcass pits, introduced spawning Kokanee, and fruit trees). Encourage enforcement of all bear attractant management within municipalities. Consider creative approaches to supporting fruit removal from trees. (4)
- Engage FLNRORD and Conservation Officers on alternate **non-lethal approaches** to problem bear management.
- **Promote public safety using hands-on bear safety, electric fencing, and bear spray workshops;** 50% cost share electric fencing program; workshops to teach bear safety and bear spray use.
- **Establish best management practices for tenure holders** that overlap with elk habitat. Implement management strategies to reduce elk-agriculture conflicts.

THEME #5: ADDRESS CUMULATIVE EFFECTS

- **Address cumulative effects** - development (residential and industrial / retail), recreation, industrial activities (logging, mining, etc), highways, railway, quad/mountain bike/snowmobile, etc. all impacting on a relatively small area especially the Valley bottom. *Note that recommendations from the Cumulative Effects Management Framework⁹ will not be available until after the Elk Valley Conservation Action Forum.*

THEME #6: CONSERVE POPULATIONS OF SPECIES OF CONCERN

Note that broad-level themes for species were integrated into previous themes.

- **Establish meaningful population objectives**, determine limiting factors to achieving those objectives, and develop measurable management objectives to support achieving goals.
- **Map key wildlife habitat, corridor and refuge areas** and work to develop stewardship actions with Crown, municipal and private landowners. [see Connectivity theme]
- **Westslope cutthroat trout**: identify and manage potential threats of introgression; safeguard habitat.
- **Bears¹⁰**: Engage COS to apply non-lethal mgt to appropriate potential problem bears (non-aggressive/non-destructive females). Hands-on bear safety, electric fencing, and bear spray workshops; wildlife attractant securement; 50% cost share electric fencing program; workshops to teach bear safety and bear spray use; Help make people be and feel safe in grizzly bear country; Human safety is first priority. [see Human-Wildlife conflict theme]
- **Bats¹¹**: Determine occurrence and distribution of species (i.e. North American Bat Monitoring Project).
- **Badgers¹²**: Understand the complex dynamics on prey distribution in order to effectively enhance areas for badger prey. Such as, why do Columbian ground squirrels increase/disperse on certain grassland restoration sites, recent cutblocks, mining reclaimed areas and/or wildfire areas while not others? Continue to promote/educate people that badgers are beneficial on the landscape to private landowners, tenure holders, licensees, and general public.

⁹ <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/cumulative-effects-framework/regional-assessments/kootenay-boundary/elk-valley-cemf>

¹⁰ Input provided by Michael Proctor and Clayton Lamb

¹¹ Input provided by Leigh Anne Isaac

¹² Input provided by Richard Klafki

- **Bighorn sheep¹³:** Avoid development that could impact core sheep winter ranges; Monitor and improve range condition in moderately and highly impacted winter ranges; Reduce access and recreational disturbance of sheep in high elevations; Assess habitat capability for sheep in Elk Valley West subpopulation; Reduce highway mortality (in the EV this mainly applies to Elko sheep); Prevent transmission of domestic sheep and goat disease transmission risk to bighorn sheep; work cooperatively on ecosystem restoration (especially on impacted high-elevation winter ranges) and wildlife health projects; Conduct ecosystem restoration within areas with low invasive plants; Maintain the degree of invasive plant invasion low; Reduce access and recreational disturbance (motorized and non-motorized (includes mechanized and human-powered)) that has the potential to cause disturbance and displacement.
- **Rocky Mountain Elk¹⁴:** Improve transitional and summer elk habitats through habitat enhancement; Implement management strategies to reduce elk-agriculture conflicts; Identify high-collision areas and reduce highway and railway mortality; Establish best management practices for tenure holders that overlap with elk habitat; Treat existing invasive plant infestations and prevent spread; Identify, protect and enhance elk movement corridors through landscape level planning.
- **White bark pine¹⁵:** Identify candidate rust resistant parent trees and work to collect cones, submit material to screening programs, and protect these trees from mountain pine beetle and development; Increase the availability of 5-Needle pine seedlings for planting. Expand outreach with conservation groups to increase the level of awareness and increase the recovery gains - to effectively recover these species groups of all types across a large area need to assist to have recovery across the range; Develop a collaborative approach.
- **Fish¹⁶:** Promote fish passage at appropriate locations; Conduct large scale stream habitat enhancements. Restore deep pools for over-wintering habitat. Promote long-term research and monitoring of indicator fish species such as bull trout, kokanee, rainbow trout, westslope cutthroat. Consider Wildlife Habitat Areas for key spawning habitats.
- **Birds:** Long-term monitoring will be key to understanding how bird populations are changing. Identify north-south migration routes.

¹³ Input provided by Kim Poole

¹⁴ Input provided by Kim Poole

¹⁵ Input provided by Randy Moody

¹⁶ Input provided by Gerry Oliver

- **Wolverines¹⁷**: Protect reproductive sites that include north facing slopes, alpine/subalpine (at or near treeline, roadless valleys, marmot habitat (talus boulder slopes)
- **Western Screech-owl¹⁸**: Protect valley bottom habitats, large DBH cottonwood or aspen (> 40 cm); Up to 1700m; Riparian Habitat; Structural Stage 6 and 7 or forests >100 years old; Areas >5 ha with the above characteristics.
- **Flammulated Owls¹⁹**: Protect low elevation IDF or PP; Southerly facing slopes; Douglas fir regeneration; Old veteran ponderosa pine and Douglas fir.

¹⁷ Input provided by Doris Hausleitner

¹⁸ Input provided by Doris Hausleitner

¹⁹ Input provided by Doris Hausleitner