

Private Land Conservation Opportunities in Alberta's Bow Valley



Technical Report #9
July 2010

By: Karsten Heuer and Tracy Lee

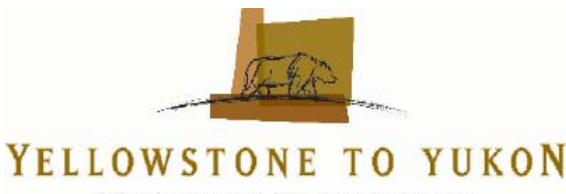
Yellowstone to Yukon Conservation Initiative
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Introduction

Alberta's upper Bow River valley is a critical component of a much larger network of core wildlife reserves and corridors spanning the eastern slopes and main ranges of the Canadian Rocky Mountains. These, in turn, form a significant anchor of the Yellowstone to Yukon (Y2Y) region. The Bow Valley is a rare east-west trending valley in a landscape dominated by north-south ridgelines that provides high-quality, low-elevation wildlife habitat and winter range in a region where over half of the land base is comprised of rock and ice. It is both a thoroughfare and a home for an extensive array of mammals, including grizzly bears, lynx, cougars, wolves, elk, bighorn sheep, bobcats and wolverines, as well as a variety of birds, amphibians and aquatic species.

For many of these animals, however, the region is also among the most developed places in their North American range. The Town of Canmore (which has more than doubled in population in the last ten years to 17,000 residents); the hamlets of Deadman's Flats, Lac Des Arcs, Exshaw and Harvie Heights; an active rock mining industry; the Trans-Canada Highway; the Canadian Pacific Railway; and a myriad of recreational trails and facilities used by hundreds of thousands of tourists, Bow Valley residents, and enthusiasts from the nearby city of Calgary (population 1 million); all combine to create a maze of obstructions and squeeze points in a landscape that is already topographically complex. Indeed, all the recent wildlife research in the study area shows a landscape so constricted by natural and man-made barriers that, in many cases, once-viable movement routes for bears, wolves and other animals have been severely constricted or cut off (e.g., Whittington and Forshner, 2009; Gibeau et al., 2002; Percy, 2003; Paquet, 1996).

The saving grace for this troubled valley is that much of it is protected. To the west of Canmore lies Banff National Park and to the east, west and south lie portions of the Nordic Centre, Bow Valley, and Spray Valley Provincial Parks. But the effectiveness of these protected areas is undermined by the inability of wild animals to move through an increasingly complex system of squeeze points on the unprotected private and provincial lands between them. Some of these unprotected lands are so developed that they are beyond restoration; however, others hold incredible conservation opportunities. The purpose of this project is to identify and prioritize private land conservation opportunities so that tools such as easements, covenants, land swaps, and acquisitions can be strategically pursued by land trusts and private land conservancies where landowners may be amenable.

Background

The conservation of key parcels of private land in the Bow Valley is of interest to a number of organizations, including the Bow Valley Land Conservancy (BVLC), the Nature Conservancy of Canada (NCC), the Alberta Conservation Association (ACA), the Yellowstone to Yukon Conservation Initiative, the Town of Canmore, and the Alberta Government. What has been lacking so far, however, is an approach that identifies and prioritizes private parcels of land based on their biological and conservation values.

The NCC took steps towards addressing this need in 2009 when it completed its Bow Natural Area Conservation Plan, which sets conservation targets,

priorities and actions for the entire Bow Natural Region (NCC, 2009). However, the scale of this plan, which covers an area that extends east to Calgary and as far south as Longview (Figure 1), is so large that specific parcels of land are difficult to identify and target for conservation. This report supplements the NCC's previous work with greater detail for the upper Bow Valley and, in doing so, furthers two of the NCC's goals, which are to 1) support the conservation of grizzly bears along the eastern slopes portion of the Bow Natural Area; and 2) enhance the ecological integrity and conservation values of federally and provincially protected areas within Kananaskis Country and the mountain national parks (NCC, 2009).

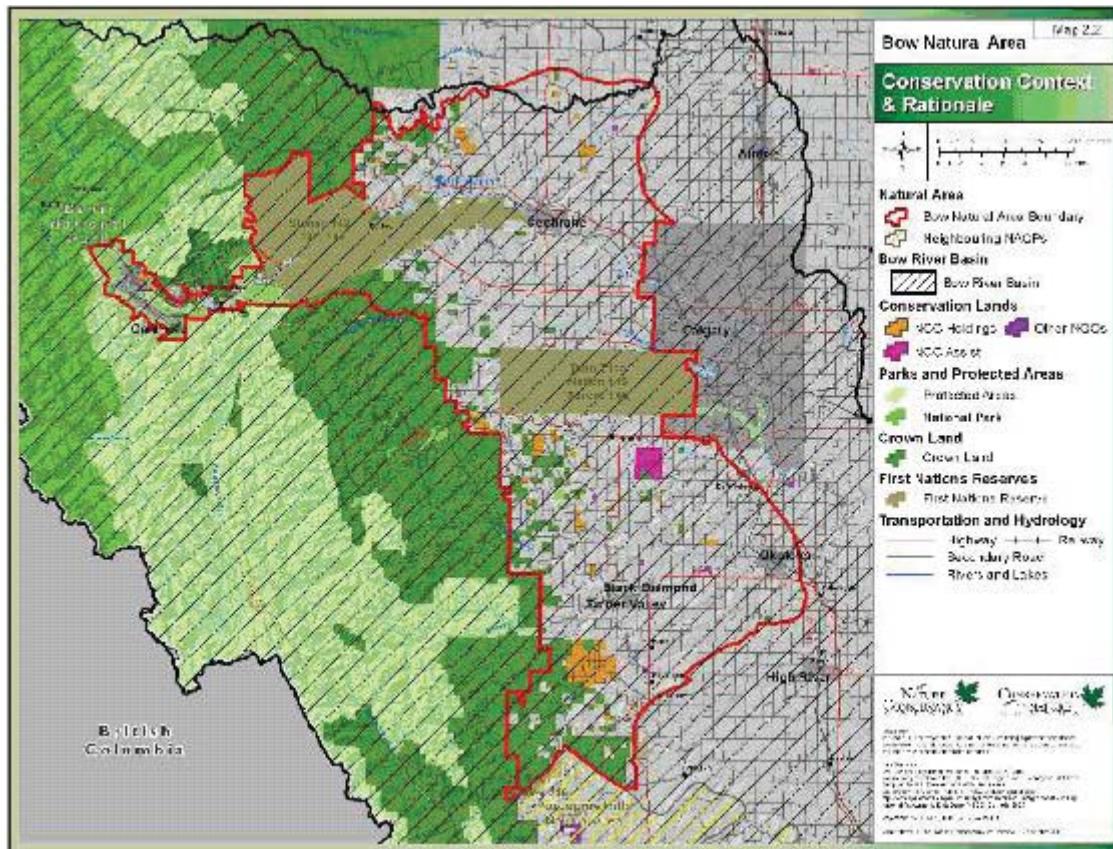


Figure 1: Conservation Priorities for the Bow Natural Area (as determined by the Nature Conservancy of Canada, 2009).

Goals

The goals of this project are to:

1. Identify private lands in the Bow Valley that are important for large carnivore connectivity and wetland/riparian conservation.
2. Strengthen this analysis through a workshop to gather feedback from local biologists, land managers and politicians.
3. Rank and prioritize lands using a matrix that lists the strengths/advantages versus weaknesses/disadvantages of each identified parcel.

Study Area

The study area, located around the Town of Canmore and the Hamlet of Exshaw, is bounded by Banff National Park to the west, the Stoney Indian Reserve to the east, the Don Getty and Bow Valley Wildland Provincial Parks to the north, and Bow Valley Wildland Provincial Parks and Spray Valley Provincial Park to the south (Figure 2). Because the focus of this project was on the valley-bottom lands where human development and wildlife compete for limited, low-angle terrain, all lands higher than 1840 metres above sea level (5000') and steeper than 30° were excluded from the analysis (see BCEAG, 1999; and Whittington and Forshner, 2009 for slope justification).

Methods and Results

Lands of conservation interest were identified by building two layers of biological information and overlaying them with land ownership. The two layers of biological information were:

1. Connectivity (which captures the movement and habitat needs of the vast majority of large mammals and, by virtue of the umbrella approach, most smaller species as well); and
2. Riparian/wetland habitats (which captures the needs of more specialized species, including amphibians, nesting waterfowl and fish).

Connectivity

Our starting model was the existing map of wildlife corridors and habitat patches developed by the Bow Corridor Ecosystem Advisory Group (BCEAG) in 1999 (Figure 3). We then asked the question: how well does this model capture actual wildlife use and movement? In search of the answer, we divided the study area into five subunits (Figure 4) and overlaid three sets of wildlife data: 1369 GPS locations from three radio-collared grizzly bears (Figure 5); 3306 GPS locations from five radio-collared cougars (Figure 6); and 1081 kilometres of snow tracking sequences of cougar, wolf, lynx and bobcat collected over the past 10 years (Figure 7).

FIGURE 2: STUDY AREA

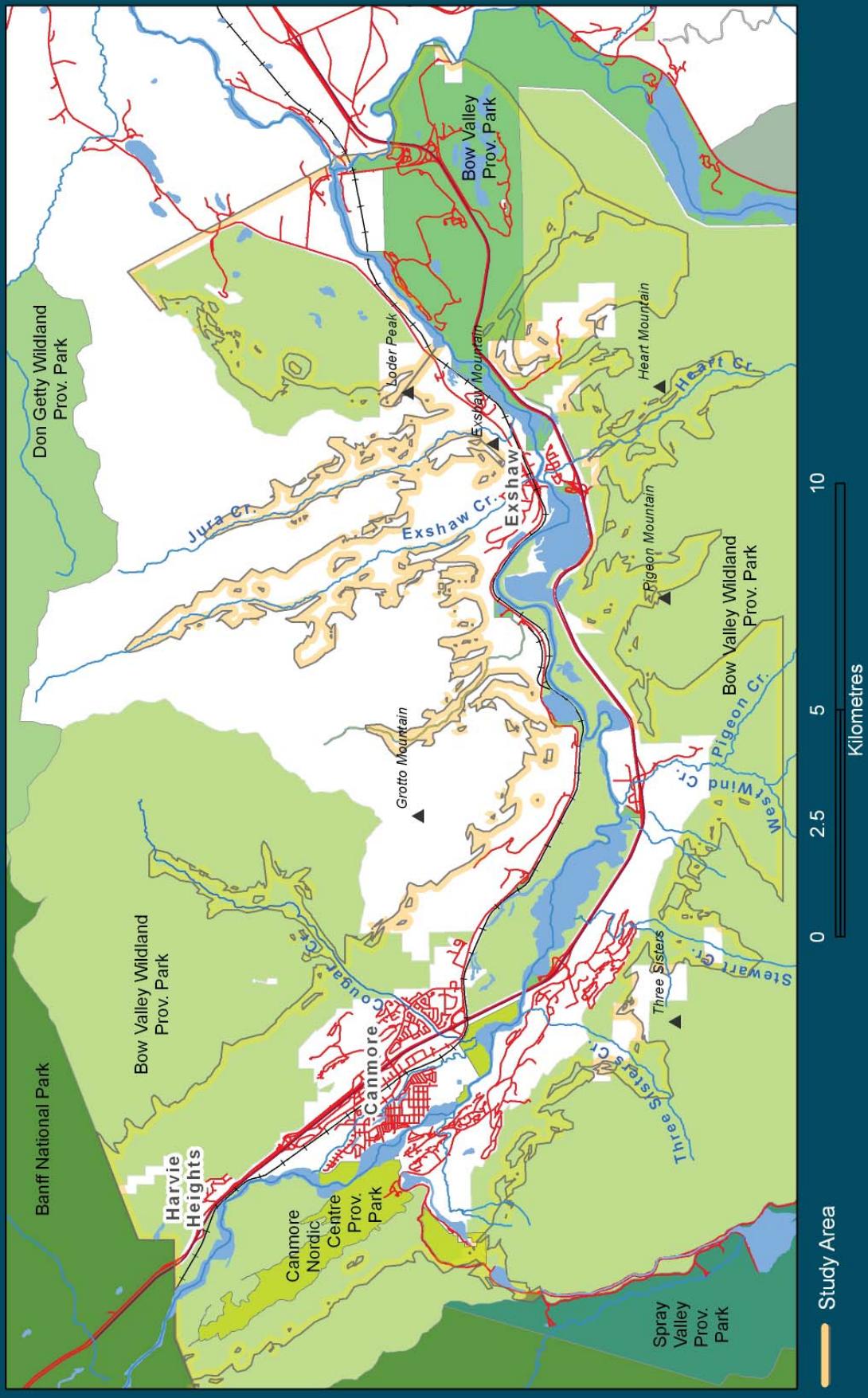


FIGURE 3: EXISTING WILDLIFE CORRIDORS AND HABITAT PATCHES (BCEAG)

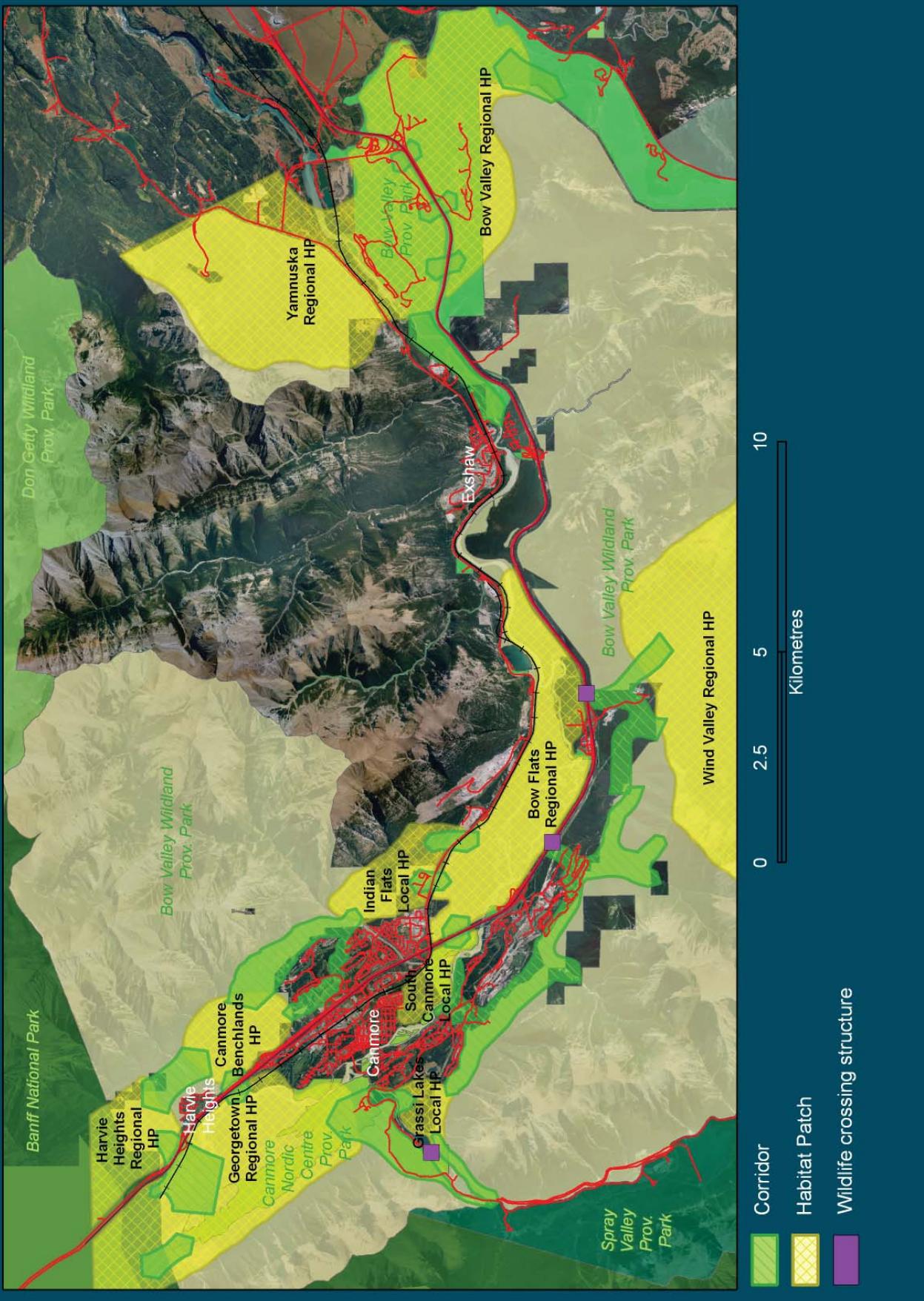


FIGURE 4: FIVE STUDY SUBUNITS: CANMORE WEST; CANMORE; CANMORE EAST; EXSHAW; AND BOW VALLEY PARK

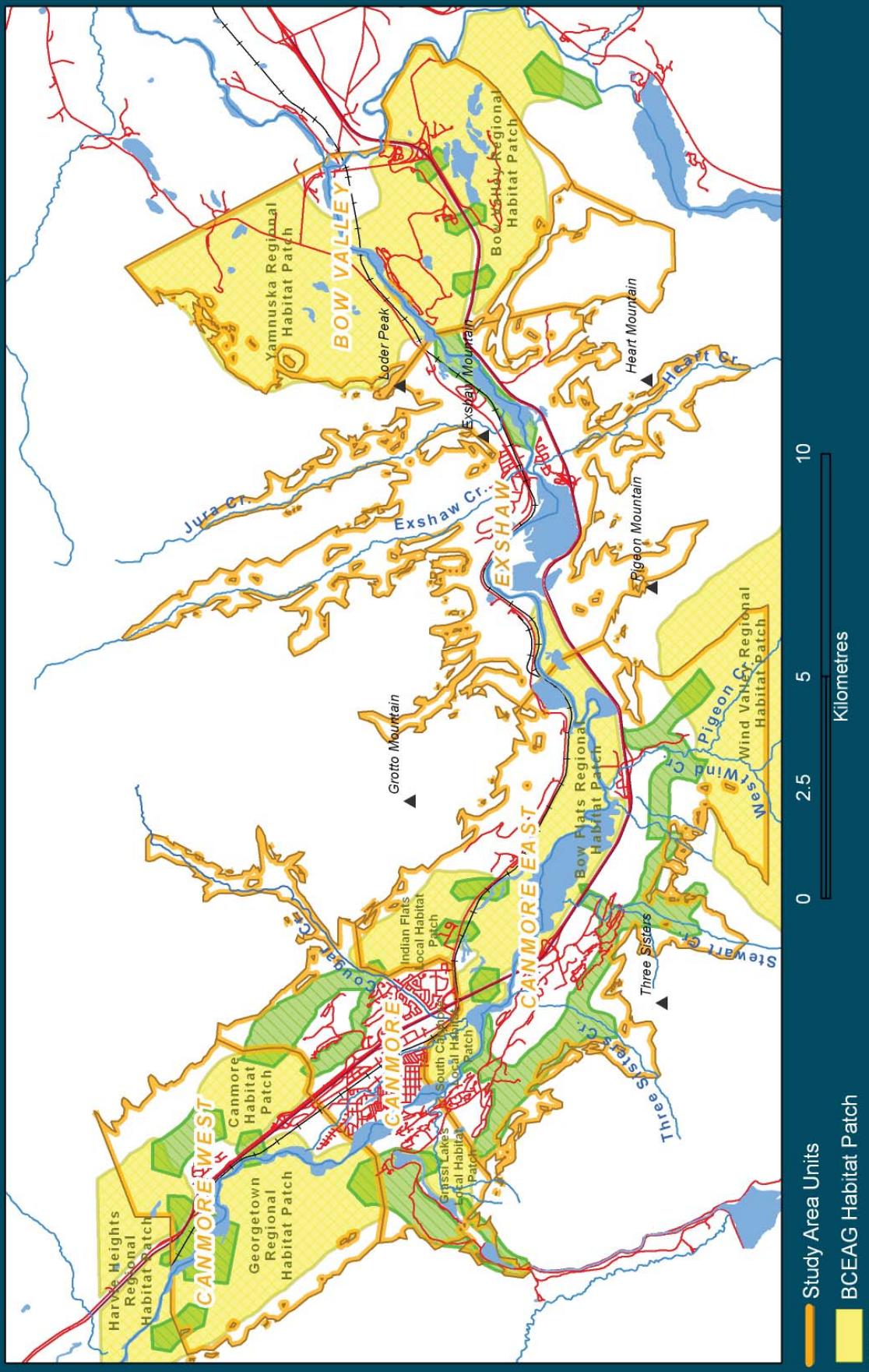


FIGURE 5: GPS POINTS COLLECTED FROM 3 RADIO-COLLARED GRIZZLY BEARS BETWEEN 1988-2004



FIGURE 6: GPS POINTS COLLECTED FROM 5 RADIO-COLLARED COUGARS BETWEEN 2000 AND 2003

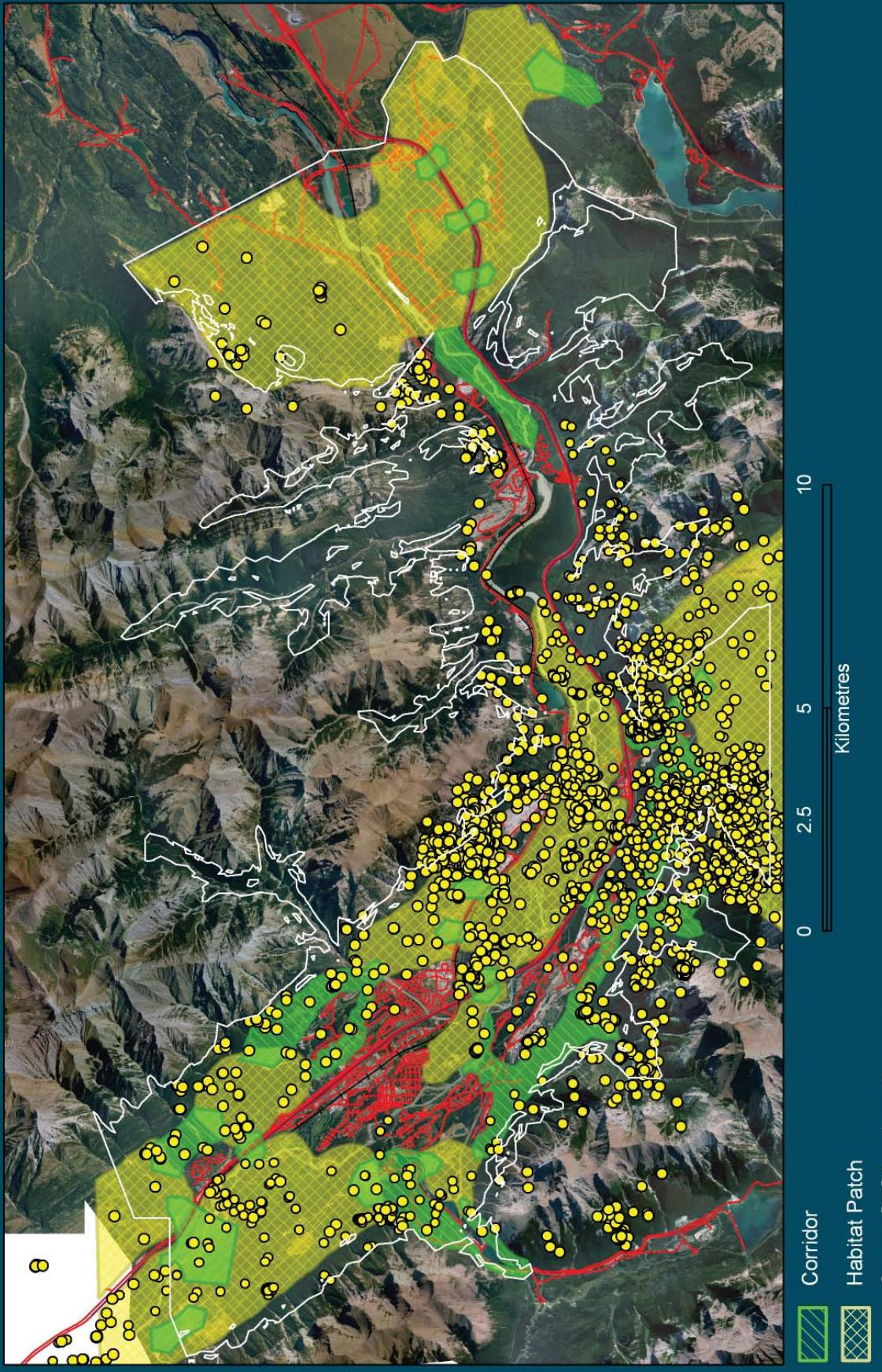
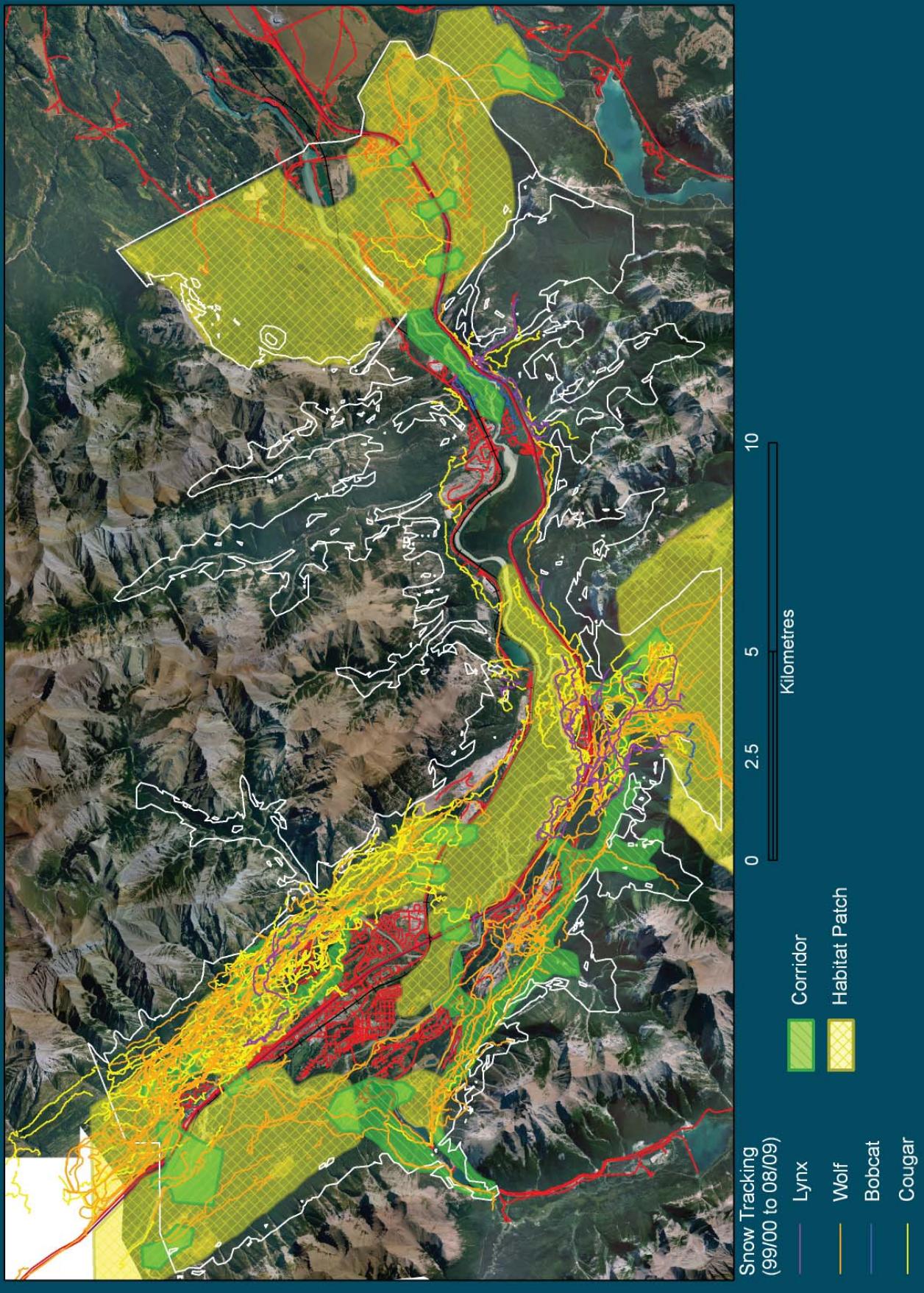


FIGURE 7: SNOW TRACKING SEQUENCES FOR COUGAR, LYNX, WOLF AND BOBCAT, 1999-2009



Although substantial in volume, the above data has limitations: it wasn't collected equally or randomly across the landscape (e.g. backtracking effort was greater on south-facing slopes above the Town of Canmore in the Canmore West and Canmore subunits (Figure 7)). This lack of randomness and uniformity introduced statistical challenges that led us to adopt a very straightforward assessment of the data: for each study unit we simply calculated the percentage of wildlife data that fell within the current BCEAG corridor and habitat patch alignments (Table 1). This approach worked well for our mandate, which was to identify conservation opportunities on private lands in the Bow Valley, given that wildlife are already displaced and stressed by existing levels of development (see Whittington and Forshner, 2009; Gibeau et al., 2002; Herrero, 2005; and Weaver et al., 1996), that current designated corridors and habitat patches are suboptimal (see BCEAG ,1999 for ideal dimensions), and that opportunities to conserve biologically important private lands should be seized.

We considered values less than 75% (shaded yellow in Table 1) to be of concern, of which the majority

occurred in the Canmore East and Exshaw study units. These poor fits can be attributed to the following four factors:

- The absence of designated corridors and habitat patches on the north side of the Bow Valley east of Canmore (lower slopes of Grotto, Exshaw and Loder mountains) where cougar GPS locations (Figure 6) and cougar, wolf, lynx and bobcat backtracking sessions (Figure 7) occur in high densities.
- Inadequate wildlife corridor alignment on the private lands below Wind Ridge Mountain (i.e., the “corridor disconnect” on Three Sisters lands east of Stewart Creek) where high amounts of wildlife activity exist (Figures 5, 6 and 7).*
- The absence of corridors on the north side of the Bow Valley below Mount MacGillivray and around Lac des Arcs, where known cougar, wolf and lynx movements exist (Figures 6 and 7).
- The absence of a designated corridor in the Exshaw Creek Valley, which is used by bears to link low elevation and high elevation habitats (Figure 5).

Table 1: Percent fit of wildlife data into BCEAG wildlife corridors and habitat patches.

Species	Data Type	Canmore West	Canmore	Canmore East	Exshaw	Bow Valley Park	All Study Units Combined
Grizzly	GPS (points)	96% (N=128)	80% (N=437)	50% (N=739)	23% (N=44)	100% (N=21)	63% (N=1369)
Cougar	GPS (points)	100% (N=323)	89% (N=94)	71% (N=2585)	47% (N=279)	100% (N=25)	72% (N=3306)
Cougar	Backtrack (km)	80% (N=110)	72% (N=106)	72% (N=215)	46% (N=38)	97% (N=4)	76% (N=473)
Wolf	Backtrack (km)	98% (N=158)	81% (N=76)	62% (N=217)	55% (N=10)	97% (n=31)	79% (N=493)
Lynx	Backtrack (km)	100% (N=5)	100% (N=6)	70% (N=49)	50% (N=12)	No data	71% (N=71)
Bobcat	Backtrack (km)	No data	No data	100% (N=2)	44% (N=8)	No data	56% (N=44)

*Lands immediately west of the Stewart Creek cross-valley corridor have been developed since all but the cougar GPS data were collected; hence the overlap of grizzly GPS points and wolf backtracking data on an urban subdivision visible on the air photo.

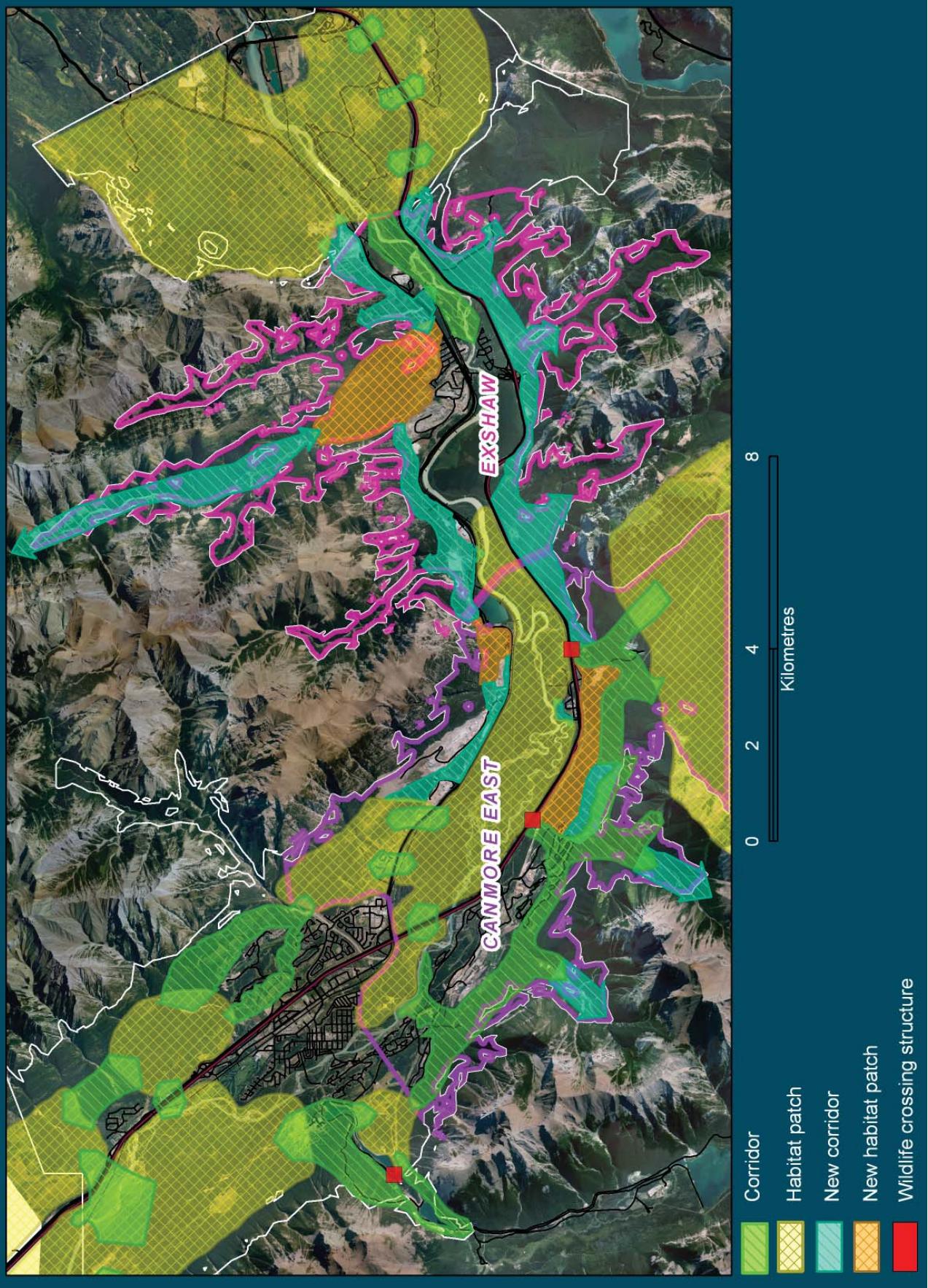
In the hopes of building a better connectivity layer we addressed these shortfalls by adding 5 corridors, extending or widening 3 corridors, and adding three small habitat patches to the existing BCEAG corridor and habitat patch alignments for these two subunits (Figure 8). We then re-ran our analysis to see if these additions better accommodated the data (Table 2). Note that, because of the biological value and political sensitivity of undeveloped private lands east of Stewart Creek (currently part of the Three Sisters lands in receivership), we further subdivided our analysis of the Canmore East subunit into two scenarios: one with a wildlife corridor alignment as proposed by Alberta Sustainable Resource Development (ASRD) in 2002 (Three Sisters Mountain Village, 2003, Appendix 1), and one which designates the entire area east of Stewart Creek and south of the Trans Canada Highway as a habitat patch (Figure 8).

Table 2: Percent fit of wildlife data into existing (Figure 3) and new (Figure 8) BCEAG corridors and habitat patches for Canmore East and Exshaw subunits.

Species	Data Type	Canmore East			Exshaw	
		Existing	New		Existing	New
			w/ ASRD Stewart Ck. Corridor	w/ Stewart Ck. Habitat Patch		
Grizzly	GPS	50%	55%	75%	23%	93%
Cougar	GPS	71%	78%	82%	47%	90%
	Backtrack	72%	80%	88%	46%	88%
Wolf	Backtrack	62%	65%	77%	55%	94%
Lynx	Backtrack	70%	75%	91%	50%	93%
Bobcat	Backtrack	100%	100%	100%	44%	67%

* Yellow shading denotes category of concern due to poor fit (<75%).

FIGURE 8: EXISTING AND NEW WILDLIFE CORRIDORS AND HABITAT PATCHES FOR CANMORE EAST AND EXSHAW SUBUNITS



We were encouraged by the improvement in the above numbers and, as a final check, ran the analysis for the entire study area (Table 3). Based on the results, we adopted all corridor and habitat patch alignments depicted in Figure 8 as our Connectivity Layer.

Table 3: Percentage fit of wildlife data into existing BCEAG corridor and habitat patch alignments (Figure 3) versus new ones (Figure 8) for entire study area.

Species	Data Type	All Subunits Combined	
		Existing BCEAG	New ^Ω
Grizzly	GPS (points)	63% (N=1369)	85%
Cougar	GPS (points)	72% (N=3306)	79%
	Backtrack (km)	76% (N=473)	87%
Wolf	Backtrack (km)	79% (N=493)	86%
Lynx	Backtrack (km)	71% (N=71)	93%
eBobcat	Backtrack (km)	56% (N=44)	75%

^Ω Includes habitat patch east of Stewart Creek instead of 2008 ASRD corridor alignment.

* Yellow shading denotes category of concern due to poor fit (<75%).

Riparian/Wetland Habitats

Once the Connectivity Layer was completed we turned our attention to riparian and wetland habitats in the hopes of capturing overlooked habitats for more specialized species (e.g., waterfowl, amphibians and fish). To do this we mapped streams, rivers and lakes across the study area as well as wet and moist areas (Alberta Vegetation Index: hydric, hygric and subhydric categories) (Figure 9). We then applied buffers of 100m to all lakes and wetlands and 60m to all streams and rivers (Lee and Smyth, 2003; ASRD, 2008; Jon Jorgensen pers. comm.) and, after overlaying available amphibian locations (Alberta Parks and Protected Areas) and getting near-perfect overlap, adopted this buffered area as our Riparian/Wetland Layer (Figure 10).

Lands of Conservation Interest

The two biological layers (Connectivity and Riparian/Wetland) were then combined to create our area of conservation interest (Figure 11).

Land Ownership

Land ownership information was obtained from the Town of Canmore, the Municipal District of Bighorn, AltaLIS and Alberta Parks and Protected Areas. Although our focus was on privately deeded lands, we included provincial, leased, and municipally-owned lands as part of our analysis in the hopes of encouraging and facilitating a coordinated approach to conservation in the valley.

FIGURE 9: STREAMS, RIVERS, LAKES AND MOIST AND WET AREAS IN THE BOW VALLEY STUDY AREA

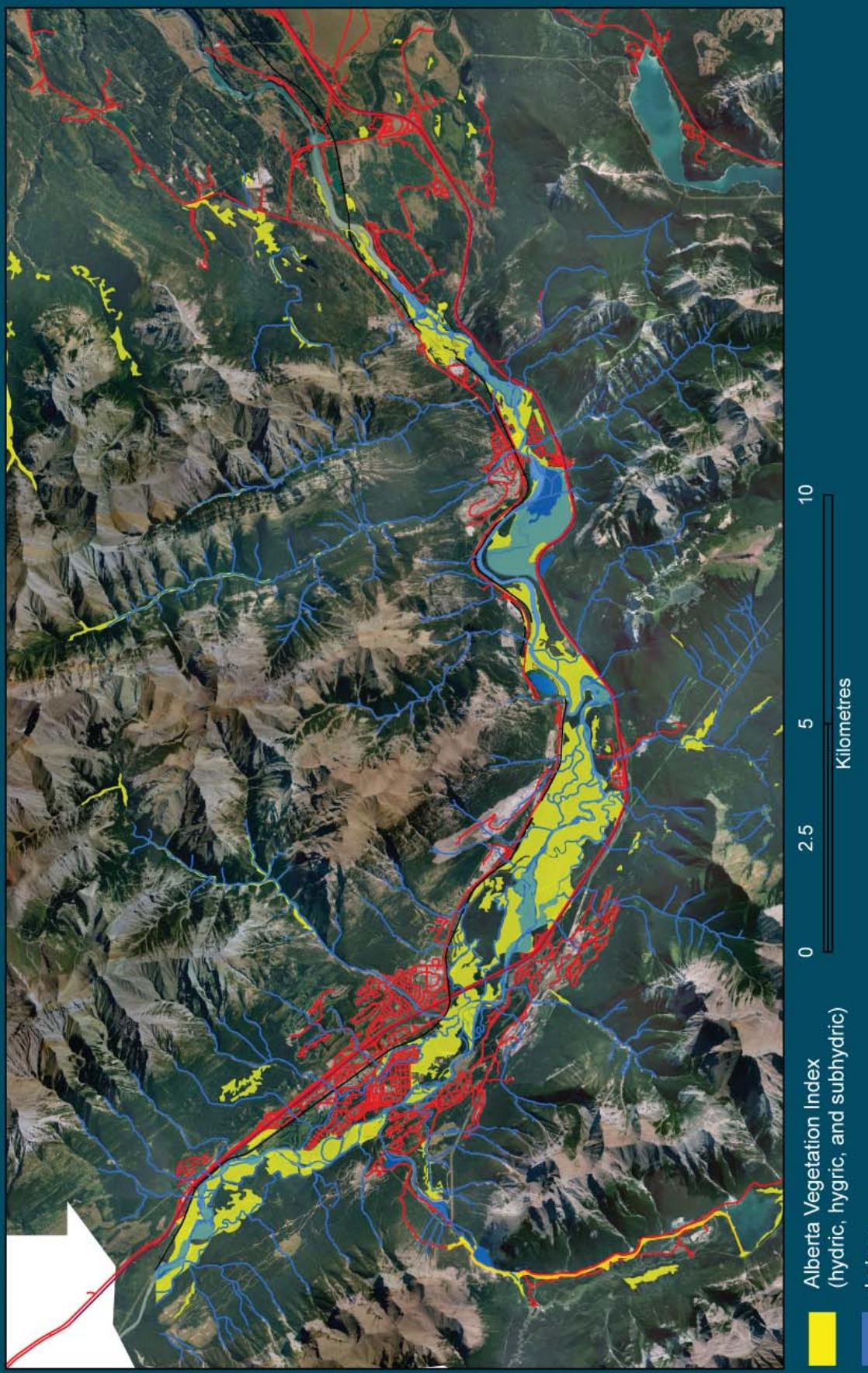


FIGURE 10: RIPARIAN/WETLAND LAYER

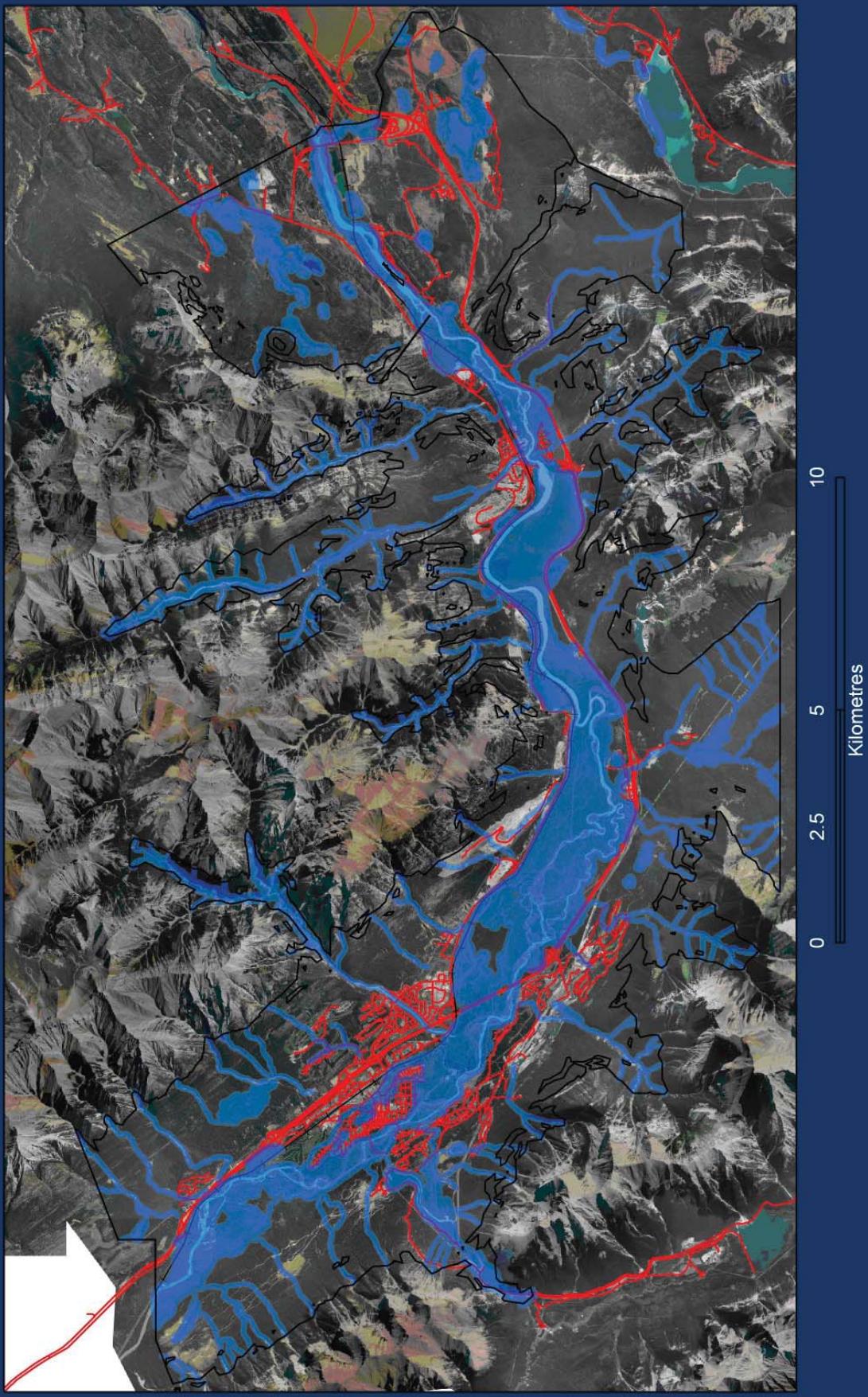
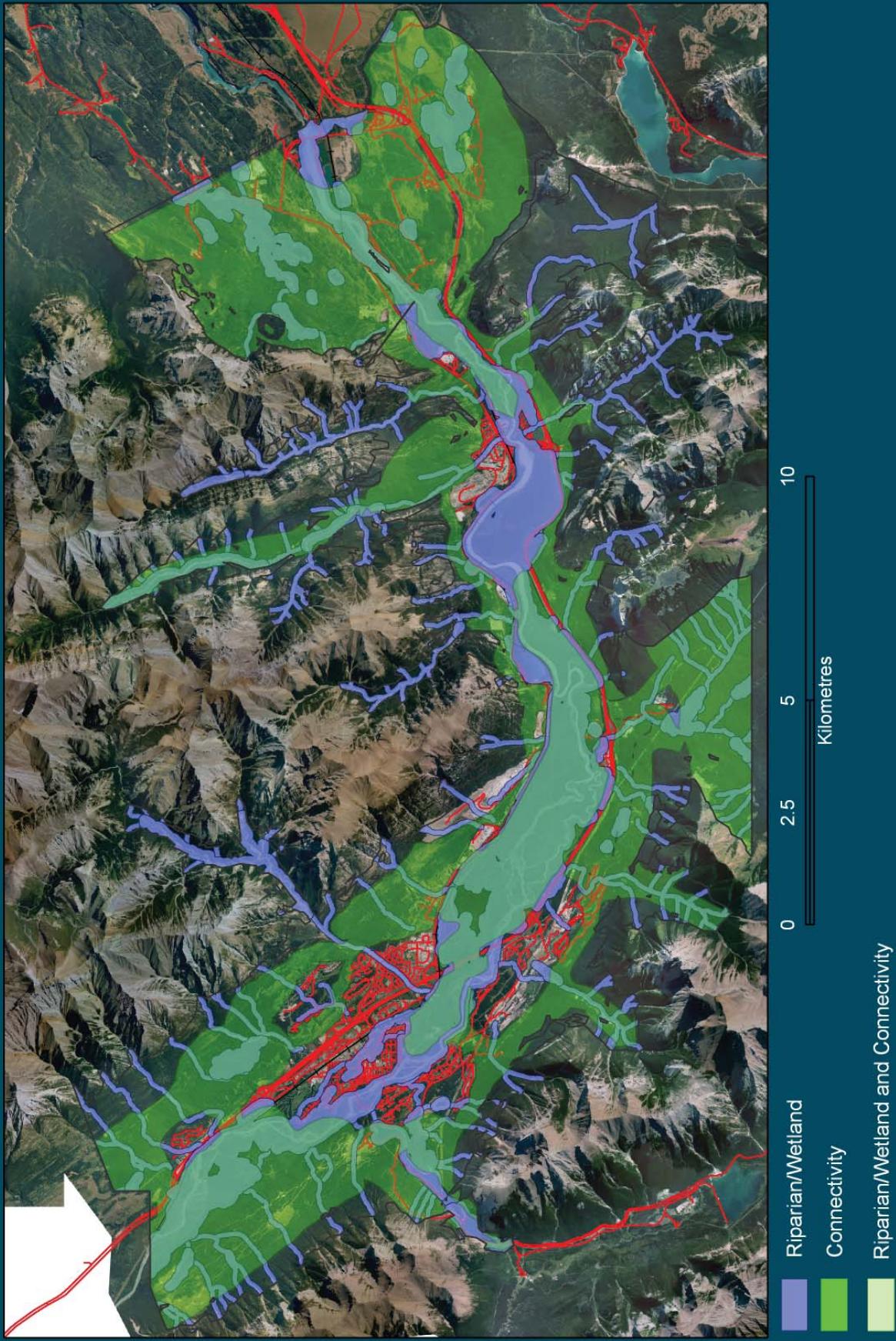


FIGURE 11: AREA OF CONSERVATION INTEREST



Conservation Targets

We then overlaid Lands of Conservation Interest (Figure 11) with land ownership to create a map of conservation targets for the valley (Figure 12). These targets denote the legal boundaries of every parcel of land where the biological and ownership layers intersected. In most cases the area of actual conservation interest is considerably smaller (i.e., an entire section of land appears as a conservation target even if only a corner of it overlaps with a corridor, habitat patch or buffered riparian or wetland area – e.g., compare Figures 13 and 14).

The map of Conservation Targets (Figure 12) and how it was derived was then subjected to peer review during an all-day workshop of local biologists, land managers, land conservancies, and conservationists held in late March, 2010. Invitees who were unable to attend were consulted in the weeks that followed. Altogether over 25 people were consulted, including representatives from Alberta Parks and Protected Areas, the Town of Canmore, the MD of Bighorn, Lafarge Canada, Baymag, Yellowstone to Yukon Conservation Initiative, the Bow Valley Naturalists, the Bow Valley Land Conservancy, the Bow Committee on Responsible Development (BowCORD) and independent biologists. Errors in land ownership were identified and corrected during this process, critical winter range for Bighorn sheep was incorporated into the new habitat patches, existing and pending conservation easements were identified, and a local expert on rare plants was consulted. Figure 12 incorporates all of this input.

Prioritizing Conservation Targets

Part of the peer review process was to prioritize conservation targets. This was done by drawing on the collective knowledge and wisdom gathered during the workshop to assess each parcel of land based on the following attributes:

- Conservation Value – e.g., winter range for ungulates, presence of rare plants, squeeze point in critical corridor, etc.
- Conservation Urgency – e.g., whether or not the parcel is physically developable, current municipal zoning (if applicable), etc.
- Integrity and Management of Adjacent Lands – e.g., whether the parcel is part of a designated corridor or not, whether it abuts a habitat patch or protected area, etc.
- Recreation Value – e.g., presence of trails, access to other recreation areas, etc.
- Receptiveness of Owner – e.g., whether or not the owner is known to be open to conservation tools (e.g., land swaps, development credits and trades, easements, tax credits, ecogifts, etc.) being applied to his or her lands. This was informally assessed, and is a matter for discussion with individual owners. Neither the identity or attitudes of owners of particular pieces of private land are disclosed in this report.

Discussion points were organized into a priority matrix (Table 4) and cross-referenced to final maps of priority lands for conservation in the Bow Valley (Figures 13 and 14).

FIGURE 12: CONSERVATION TARGETS IN THE BOW VALLEY

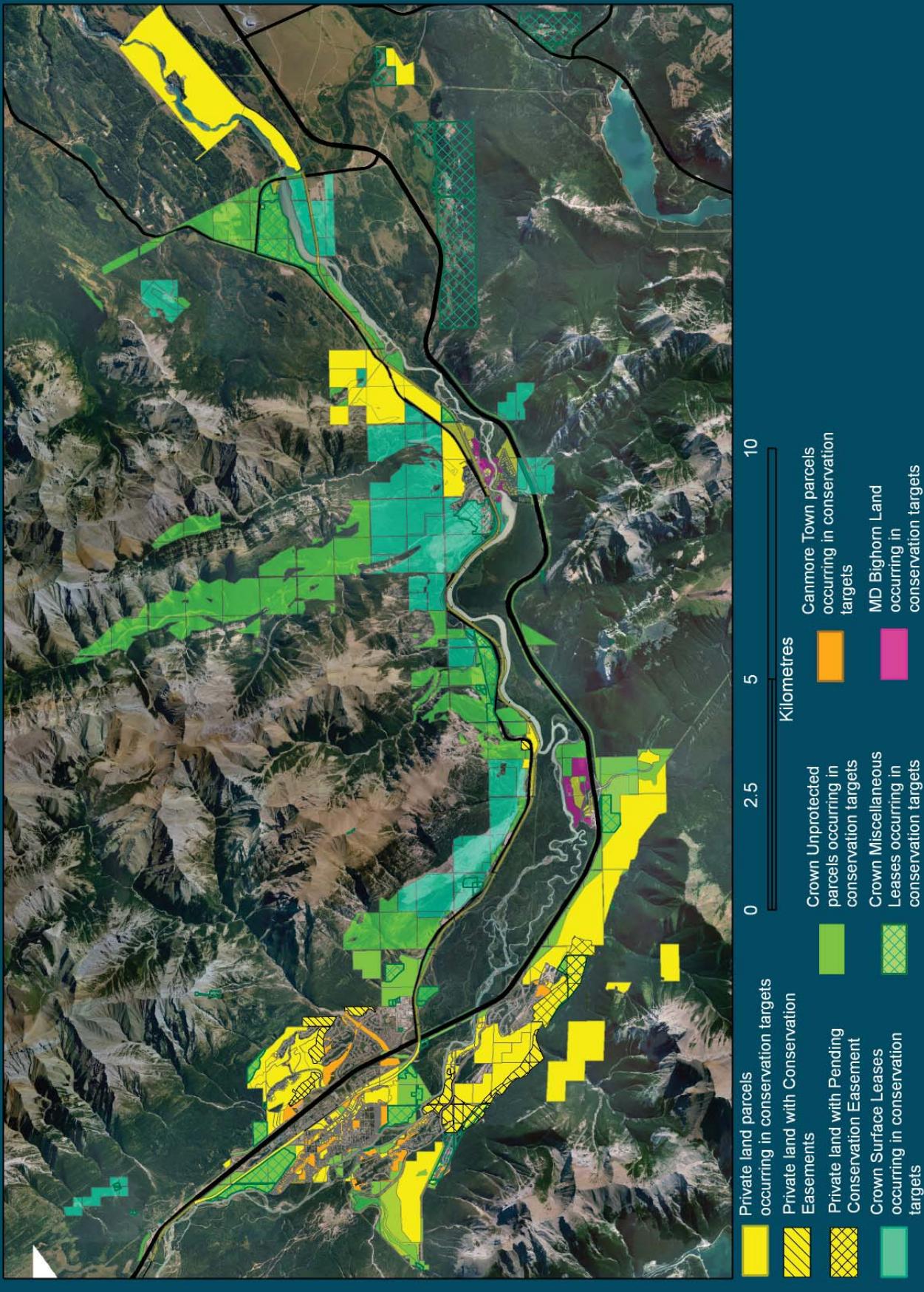


FIGURE 13: PRIORITY LANDS FOR CONSERVATION IN THE BOW VALLEY

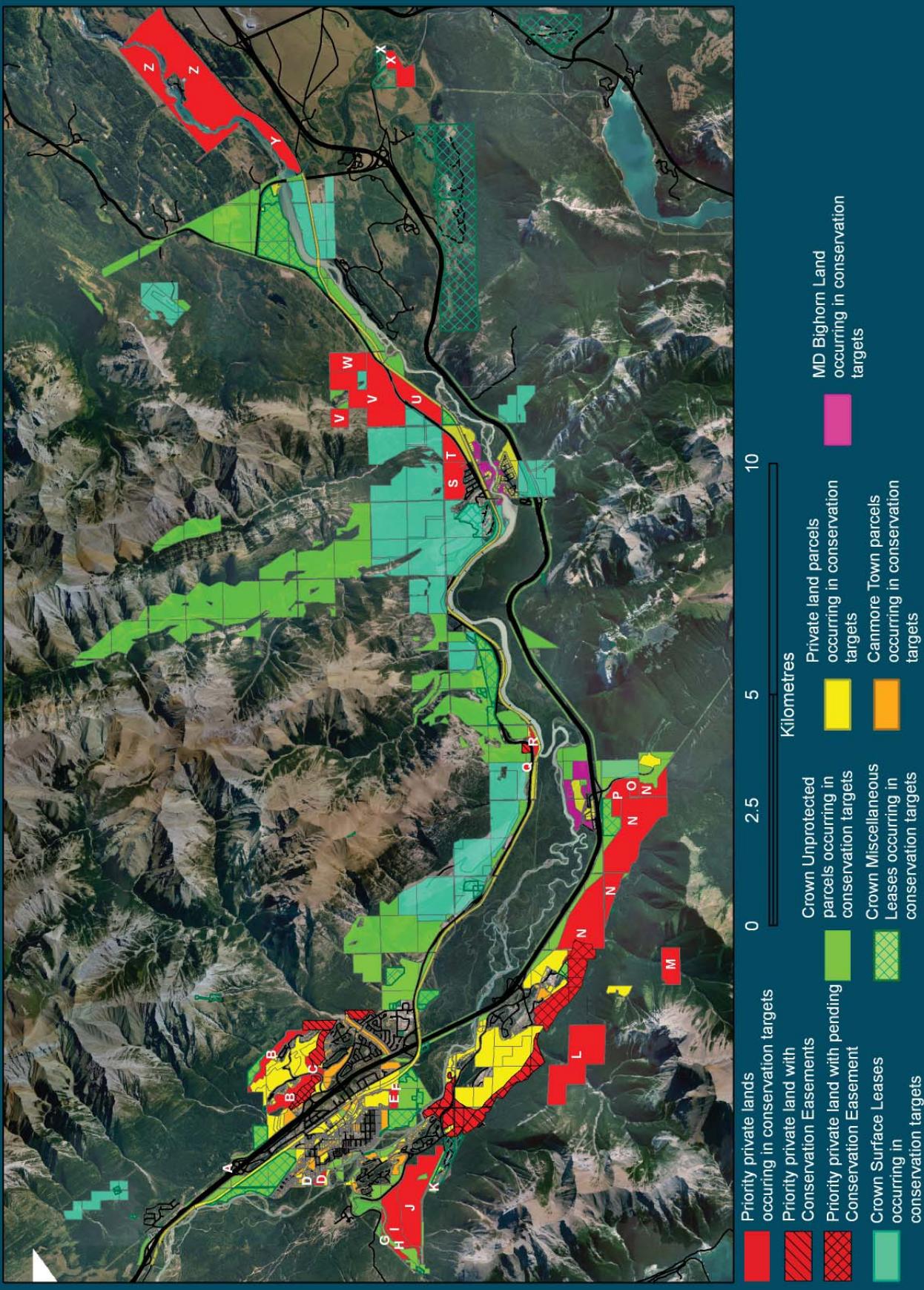


FIGURE 14: PRIORITY LANDS FOR CONSERVATION IN THE BOW VALLEY WITH CONNECTIVITY AND RIPARIAN/WETLAND OVERLAYS



Table 4: Private Land Conservation Targets and Priorities for the Bow Valley

Map Code	Parcel Description	Size acres	Conservation Value	Conservation Urgency	Integrity & Management of Adjacent Lands	Recreation Value	Possible Tools (only if owner is willing)	Overall Priority
A	Old Ranger Station	4.4	Medium –Good cougar and ungulate habitat on three sides. Concern about spill-over effect from human use in adjacent high density development.	Low – Currently zoned Wildland Conservation District by TOC.	Very High – Surrounded on three sides by BVWPP; 4 th side is highway frontage.	Low – very small parcel.	Acquisition or Easement	Medium
B	Silvertip Golf Course	120	High – Lower portion part of secondary (ungulate) wildlife corridor; upper portion part of primary wildlife corridor. Impacted has very little control by adjacent golf course.	High – Zoned Direct Control by TOC. Possibility development if golf course proves unprofitable. TOC captures rest of upper corridor.	High – Conservation easements in place on 2 adjoining properties for secondary corridor; BVWPP captures rest of upper corridor.	Medium – green space and golf course.	Easement	High
C	Silvertip Gully	17	Very High – Part of designated secondary (ungulate) wildlife corridor.	Low – Zoned Direct Control by TOC but deemed undevelopable due to slope.	Very High conservation easements in place on 2 adjoining properties for secondary corridor.	High – green space with walking trails	Easement	Very High
D	Larch Island	14	High – Part of Georgetown Regional Habitat Patch; closed annually by wildlife officers due to bears; good fall, winter and spring range for elk.	Low – Zoned Wildland Conservation by TOC.	Very High – All other islands in Bow River protected as part of CNCPP.	– Existing walking and interpretive trails used extensively by local residents.	Acquisition	High

Map Code	Parcel Description	Size acres	Conservation Value	Conservation Urgency	Integrity & Management of Adjacent Lands	Recreation Value	Possible Tools (only if owner is willing)	Overall Priority
E	Policeman's Creek A	20.4	High – Part of the South Canmore Habitat Patch – important winter range and calving habitat for local herd of elk.	High – Zoned Wildland Conservation by TOC.	Medium – Surrounded on 2 sides by provincial for walking.	Very High – used by local residents (zoned Wildland by TOC); to the north by condominiums, to the east by small parcel (F) that is a candidate for an easement.	Acquisition	High
F	Policeman's Creek B	2.15	High – Part of the South Canmore Habitat Patch – important winter range and calving habitat for local herd of elk.	Low – Zoned Wildland Conservation by TOC.	Medium – Surrounded on 2 sides by provincial unprotected lands (zoned Wildland by TOC); to the west by 20-acre parcel (E).	Low – a few unofficial trails. Land on other side of creek is owner-occupied.	Easement	Medium
G	Athletes Village	18.3	High – Located adjacent to wildlife corridor and very near to Rundle Forebay wildlife crossing structure.	Medium – Currently zoned Direct Control by TOC.	Very High – wedged between wildlife corridor (which is within CNCPP) and Grassi Lakes Habitat Patch.	Medium – trailhead for Grassi Lakes trail.	Easement	Medium
H	Right-of-way on either side of canal	18	High – part of wildlife corridor between CNCPP and Grassi Lakes Habitat Patch; flanks Rundle Forebay wildlife crossing structure on both sides.	Low – Currently zoned Wildland Conservation by TOC. Gated access roads for canal and pipeline maintenance; no development intent.	Very High – surrounded by lands currently zoned Wildland Conservation by TOC.	High – walking trails.	Easement	Medium

Map Code	Parcel Description	Size acres	Conservation Value	Conservation Urgency	Integrity & Management of Adjacent Lands	Recreation Value	Possible Tools (only if owner is willing)	Overall Priority
I	Dog Pond	92.5	Very High - Part of Grassi Lakes Habitat Patch; used by amphibians, grizzly bears and everything in between.	High – Currently zoned Wildland Conservation by TOC.	Very High – BVWPP to the south and lands zoned Wildland Conservation to the east and west.	Very High – used extensively by walkers and bikers.	Acquisition or Easement	Very High
J	Quarry Lake	237	Very High - Part of Grassi Lakes Habitat Patch; used by amphibians, grizzly bears and everything in between.	Low – Currently zoned Natural Parkland by TOC, mandate of RMHF (which is 50% controlled by TOC) is for recreation and open natural space.	Very High – BVWPP to the south and lands zoned Wildland Conservation to the east and west.	Very High – used extensively by walkers, bikers and swimmers.	Easement	Low
K	West end Peaks of Grassi	4.5	Very High – located at pinch-point at west end of Three Sisters primary wildlife corridor.	Medium – Currently zoned Urban Reserve by TOC; however, legal agreement says maximum number of developable units in Peaks of Grassi already achieved.	High – BVWPP and primary corridor to the south, Grassi Lakes Habitat Patch to the west, high density urban development to north and east.	Low – very small parcel – vacant lot.	Acquisition	High
L	Three Sisters Creek	296	High – Important movement corridor between low and high elevation habitats for a number of species; within riparian buffer.	Low – Currently zoned Wildland Conservation by TOC. Due to lack of access and cost of servicing, unlikely to be developed.	Very High – surrounded on all sides by BVWPP.	Medium – bisected by hike/bike trail leading into upper Three Sisters Creek.	Acquisition or Easement	Medium

Map Code	Parcel Description	Size acres	Conservation Value	Conservation Urgency	Integrity & Management of Adjacent Lands	Recreation Value	Possible Tools (only if owner is willing)	Overall Priority
M	Upper Stewart Creek	78	High – Important movement corridor between low and high elevation habitats for a number of species; within riparian buffer.	Low – Currently zoned Wildland Conservation by TOC and, due to lack of access and cost of servicing, unlikely to be developed.	Very High – surrounded on all sides by BVWPP.	Medium – bisected by hike/bike trail leading into upper Stewart Creek.	Acquisition or Easement	Medium
N	East of Stewart Creek	860	Very High – Last sizeable swath of low-elevation habitat remaining in the valley; used extensively by all ungulates and carnivores; critically positioned at mouth of Wind Valley; includes wetland habitat occupied by amphibians.	Very High – Currently in receivership. Possibilities for partial acquisition but market value contingent on longstanding issue of wildlife corridor alignments being resolved.	High – flanked by BVWPP to the south, and established corridor network to the east and west.	Medium – numerous hike/bike trails bisect the land along the main valley and accessing Stewart and Three Sisters Creeks.	Acquisition, land swap with provincial government, or transfer of development credits	Very High
O	Wind Valley A	20	Very High – Part of corridor at mouth of the Wind Valley.	Moderate – access problems by unprotected crown lands destined for park status one side, otherwise contingent on what happens with adjacent Taylor (P) and Three Sisters (N) lands.	Low – currently no trails in the area.	Easement	High	

Map Code	Parcel Description	Size acres	Conservation Value	Conservation Urgency	Integrity & Management of Adjacent Lands	Recreation Value	Possible Tools (only if owner is willing)	Overall Priority
P	Wind Valley B	63.4	High – part of corridor at mouth of Wind Valley, good riparian habitat and rare old-growth Douglas Fir trees. Parcel compromised by active Rundle rock quarry.	Unknown – Active Rundle rock quarry (Thunderstone) with new rock cutting facility recently installed in Exshaw. Intent to further develop active Rundle rock unknown.	Medium – flanked by unprotected Crown lands destined for Park status on two sides. Other sides contingent on future of Three Sisters (N) and Lambert (O) lands.	High – includes trail to Spray Falls.development credit trade	Easement or	Medium
Q	Bighorn Meadows B	6.8	Very High – critical winter range for bighorn sheep and deer, very good cougar habitat; functions as corridor for other species travelling around Gap Lake.	Low	Medium – rock quarries currently exist to either side with no overall plan to maintain wildlife movement. Neighbour to the west has ACA conservation easement in place.	Low – no trails in the area.	Easement	Medium
R	Gap Lake	17	Very High – critical winter range for bighorn sheep and deer, very good cougar habitat.	High – owner has agreement with Alberta Ministry of Transportation.	Medium – BVWPP to south, existing conservation easement to north; compromised by 1A Highway, CPR and nearby quarries.	Medium – no trails on property.	Acquisition or Easement	High
S	Exshaw West	87.5	Very High – high quality cougar and half (below sheep habitat and powerline) critical corridor in very constricted part of Bow Valley (Exshaw and Lac Des Arcs).	Low – southern part of Bow Valley lots for future expansion of Exshaw; northern half currently undevelopable due to slope and access.	Low – Abuts community of Exshaw and rock quarry on two sides; unprotected Crown land to north and east.	High – well used area on periphery of Exshaw for hiking and dog walking.	Easement on northern half of property	Medium

Map Code	Parcel Description	Size acres	Conservation Value	Conservation Urgency	Integrity & Management of Adjacent Lands	Recreation Value	Possible Tools (only if owner is willing)	Overall Priority
T	Exshaw East	49	Very High – high quality cougar and half (below powerline) sheep habitat and critical corridor in very constricted part of Bow Valley (Exshaw and Lac Des Arcs).	Low – southern included in MDP as residential lots for future Exshaw expansion; northern half undevelopable due to slope and access.	Low – Abuts community of Exshaw and rock quarry on two sides; unprotected Crown land to north and east.	High – well used area on periphery of Exshaw for hiking and dog walking.	Easement on northern half of property	Medium
U	Graymont Plant	100	High – area used by bobcats and lynx; landscape connection at mouth of Jura Creek; wetlands and pond.	Low – currently occupied by Graymont plant. Company not interested in having neighbours due to dust/noise conflicts.	Medium – Southern edge abuts onto BVWPP.	Low – no trails on property; quite a bit of dust and noise.	Easement with option for acquisition	Low
V	Graymont Lands	363	High – large area used by bobcats, lynx, cougar, sheep and elk; movement route to and from Yammuska Regional Habitat Patch.	Low – no active mining and none planned for near future. Graymont un-interested in development due to poss dust/ noise complaints.	Medium – Northern edge abuts BVWPP, western edge abuts rock mining leases, eastern edge by active landfill.	Medium – used by rock climbers to access Kid Goat and other cliffs in the area.	Easement with option for acquisition	Low
W	Landfill	80	Low (currently a landfill) but potential to be high once reclamation complete.	Low – expected lifespan of landfill ~30 years.	High – BVWPP surround parcel on two sides, parcel V on west side.	Medium – popular area for hiking and accessing rock climbs.	Easement	Low

Map Code	Parcel Description	Size acres	Conservation Value	Conservation Urgency	Integrity & Management of Adjacent Lands	Recreation Value	Possible Tools (only if owner is willing)	Overall Priority
X	Rafter Six Guest Ranch	21	Very High – premium montane habitat away from highways and railway on banks of Kananaskis River.	High - History of development proposals. Concern with spread of guests into surrounding habitat.	Very High – surrounded by Bow Valley Provincial Park on three sides.	Very High – popular with hikers, bikers, river runners and horse riders.	Easement	High
Y*	Seebee West	103	Very High – high concentrations of rare plants, especially orchids and good cliff nesting habitat for raptors and other birds.	High – Land unneeded for operation of powerplants.	Medium – bordered on three sides by low-density development of Stoney First Nation Reserve.	Medium – area well-used by fishermen and the occasional naturalist.	Easement or acquisition	Medium
Z*	Seebee East	770	Very High - high concentrations of rare plants (orchids) and cliff nesting habitat for raptors... Huge impacts of proposed 5,000-person town on surrounding landscape (e.g., Yammuska Regional Habitat Patch, Bow Valley Provincial Park).	Very High - ASP approved for 5,000-person town and cliff to be built on site.	Medium – bordered on three sides by low-density development of Stoney First Nation Reserve.	Low – access restricted to members of Stoney Nakoda First Nation.	Easement	Medium

BVWPP = Bow Valley Wildland Provincial Park
CNCC = Canmore Nordic Centre Provincial Park

TOC = Town of Canmore

BVPP = Bow Valley Provincial Park

MDP = Municipal Development Plan

ASP = Area Structure Plan

* Parcels Y and Z fall outside (just east) of the study area but were identified by a sufficient number of people during the consultative phase of this project to warrant inclusion.

Conclusion and Recommendations

This study was undertaken at the request of the Yellowstone to Yukon Conservation Initiative with funding from the Bow Valley Land Conservancy to identify conservation target priorities in Alberta's Bow Valley between Banff National Park and the Stoney Nakoda Indian Reserve. Using the methodology described above, we identified 26 parcels, encompassing some 3,400 acres, which require conservation management if this portion of the Bow Valley is to continue to support regional wildlife populations and to serve as a corridor linking protected habitats in Kananaskis Country with those in Banff National Park. Ten of the identified parcels rank as high or very high in conservation priority. These parcels constitute an urgent agenda for private land conservation in the Bow Valley. We recommend that the Yellowstone to Yukon Conservation Initiative and the private land conservancies with which it works develop a strategy and seek the resources to secure them.

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Appendix A

Yellowstone to Yukon Conservation Initiative

The Yellowstone to Yukon Conservation Initiative (Y2Y) is a Transboundary effort to maintain and restore the unique natural heritage of the mountain landscape extending from the southern extent of the Greater Yellowstone Ecosystem to the Arctic Circle in the Yukon. Based out of its headquarters in Canmore, Alberta, with an office in Bozeman, Montana, and staff in Banff, Alberta, and Armstrong, British Columbia, Y2Y promotes collaborative efforts to maintain viable and interconnected populations of native carnivores, fish and birds throughout the region. Hundreds of organizations representing over a million citizens have endorsed the Y2Y vision. Y2Y envisions a day when residents, visitors, communities, land use managers and aboriginal groups throughout the region understand and appreciate their location within the world's last, fully functioning mountain ecosystem and undertake or support actions that foster its conservation.

To learn more about the Yellowstone to Yukon Conservation Initiative, please visit www.y2y.net.

