

# STRATEGIC CONSERVATION FRAMEWORK 2016-2020



Crown Managers  
Partnership

[www.crownmanagers.org](http://www.crownmanagers.org)





*“There are 266 species of birds in the  
Crown of the Continent, which is one of  
the most diverse areas for breeding birds  
in North America”*

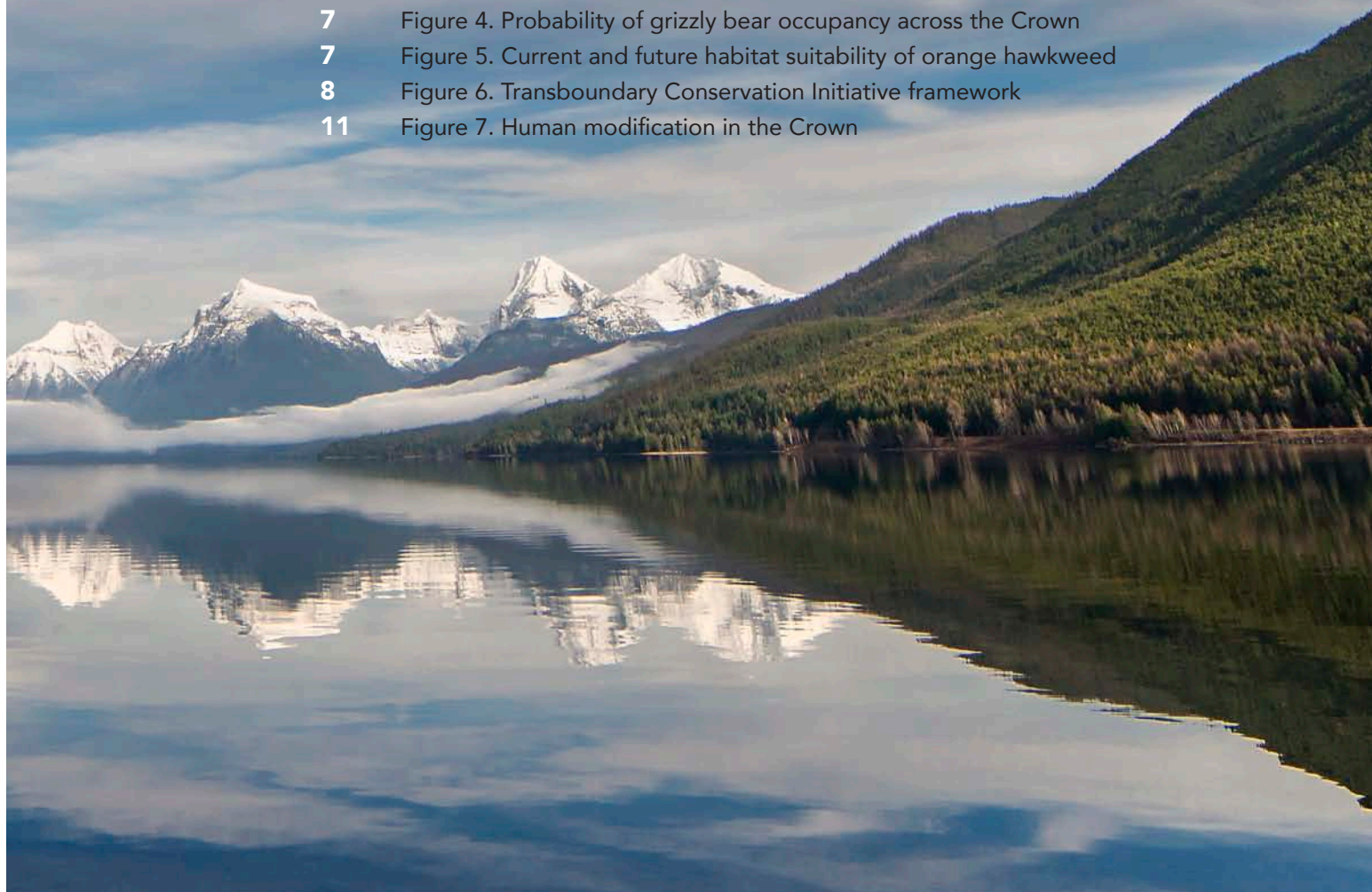
*-Dick Canning*

# Table of Contents

2	About the Crown of the Continent
4	About the Crown Managers Partnership (CMP)
5	Our Vision and Mission
6	Key Accomplishments
8	The Transboundary Conservation Initiative
8	Crown Managers Partnership Forum History
9	Current Conservation Priorities
12	Get involved
13	Appendix
13	Photo Credits

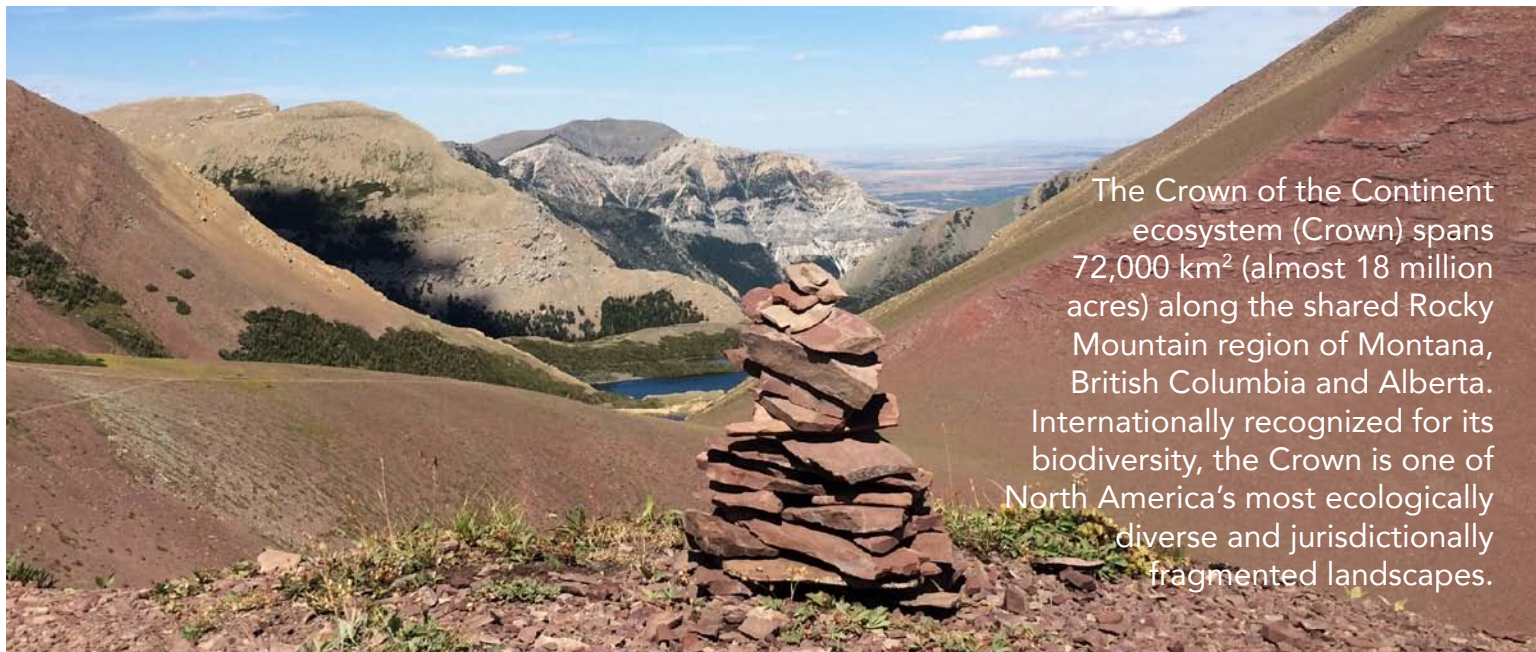
## FIGURES

3	Figure 1. Map of the Crown of the Continent
5	Figure 2. Jurisdictional Complexity in the Crown
7	Figure 3. Land Use and Land Cover in the Crown
7	Figure 4. Probability of grizzly bear occupancy across the Crown
7	Figure 5. Current and future habitat suitability of orange hawkweed
8	Figure 6. Transboundary Conservation Initiative framework
11	Figure 7. Human modification in the Crown





# 2016-2020 CMP Strategic Conservation Framework



The Crown of the Continent ecosystem (Crown) spans 72,000 km<sup>2</sup> (almost 18 million acres) along the shared Rocky Mountain region of Montana, British Columbia and Alberta. Internationally recognized for its biodiversity, the Crown is one of North America's most ecologically diverse and jurisdictionally fragmented landscapes.

## About the Crown of the Continent

The Crown of the Continent (the Crown) straddles the international boundary (Figure 1) between the United States and Canada and is one of North America's iconic landscapes. From this apex, waters flow to the Pacific through the Columbia River system in the Pacific Northwest, draining an area the size of France. Other waters drain north and west to Hudson's Bay, providing lifeblood to the Canadian Prairie Provinces. Here also arises America's great river – the Missouri-Mississippi, traversing 31 of the States of the Union on its way to the Gulf. In the Crown, the Great Plains meet the Rocky Mountains, and on the west side of the continental divide, Pacific ecological influences are also found. Much of the Crown is still mostly in a natural-undeveloped state – its spectacular landscapes are home to the entire suite of North America's endemic large carnivores and the greatest floristic and aquatic biodiversity in the Rocky Mountains. At its core is the world's first International

Peace Park – Waterton-Glacier, and in Montana, the third largest wilderness area in the lower 48 states, – the Bob Marshall Wilderness Complex.

The Crown is a region of jurisdictional as well as ecological convergence -- a land of boundaries and borders: Tribes and First Nations; two countries; two provinces and one state; federal, provincial, state and private lands.

As a symbol of the 'last, best west', the Crown is seeing increasing human activity pressures – from urban and rural residential expansion, increased and diversified recreational use, resource use and extraction demands and the physical infrastructure needed to support all of these. While growth pressures on the Crown operate at different intensities in different places, they are generally dramatic. The largest city on the borders of the Crown, Calgary, has doubled in size in the last 30 years.

Lands on both sides of the international

border have substantial environmental interdependencies. Successfully implementing various missions, mandates and policy priorities of these jurisdictions is strongly dependent on comparable or reciprocal measures by both countries-- whether that be climate change adaptation, development impacts or invasive species. The multiplicity of jurisdictional players in the Crown poses a risk of managing issues sub-optimally, or even at cross-purposes. On top of all this, the Crown is a region at great risk from climate change warming at two to three times the rate of the global average. By 2030, the glaciers are predicted to no longer exist in Glacier National Park. It is nevertheless recognized as a "resilient landscape" with respect to large landscape connectivity and iconic North American wildlife and the place where Canada and the United States can implement adaptation measures and actions to maintain and enhance resource resilience to assure the Crown's protection in the face of climate change.





**Figure 1.** Map of the Crown of the Continent



## About the Crown Managers Partnership (CMP)

Recognizing that no single agency has the mandate or resources to address regional environmental issues, the Crown Managers Partnership (CMP) formed in 2001 to explore partnering across international boundaries to address common ecological challenges. The CMP is a multi-jurisdictional partnership amongst federal, state, provincial, tribal and First Nation agency managers and universities in Montana, Alberta and British Columbia. It demonstrates that the cooperative institutional capacity exists to collectively address the environmental cumulative effects<sup>1</sup> of human activities and land use practices across this entire interconnected landscape.

We practice collaborative environmental stewardship in ways that secure ecosystem health and resilience across boundaries and borders.

On this large regional transboundary landscape, the CMP is inspired by the vision that underpinned the establishment of the Waterton-Glacier International

*Peace Park – the environment does not respect borders, shared resources require shared management and Americans and Canadians can work as one to conserve our shared heritage for posterity.*

The CMP works to enhance connections between managers, agencies<sup>2</sup>, researchers and the communities they work in. This includes fostering partnerships of members, universities and stakeholders as appropriate. This partnership theme is also reflected in and through the membership of the Steering Committee and the annual CMP Forum that brings people together from a diversity of places, backgrounds and management standpoints to join in the effort to understand and support the ecological integrity of the Crown.

Depending on the situation, the CMP might lead a project, lend support to a project that another party is leading or strike a formal partnership with other key players to pursue a particular conservation priority collectively. In all cases we seek management outcomes<sup>3</sup> that meet

the needs and aspirations of the CMP agencies, our project partner organizations and, most importantly, reflect the socio-economic-values of place and have strong community/public support.

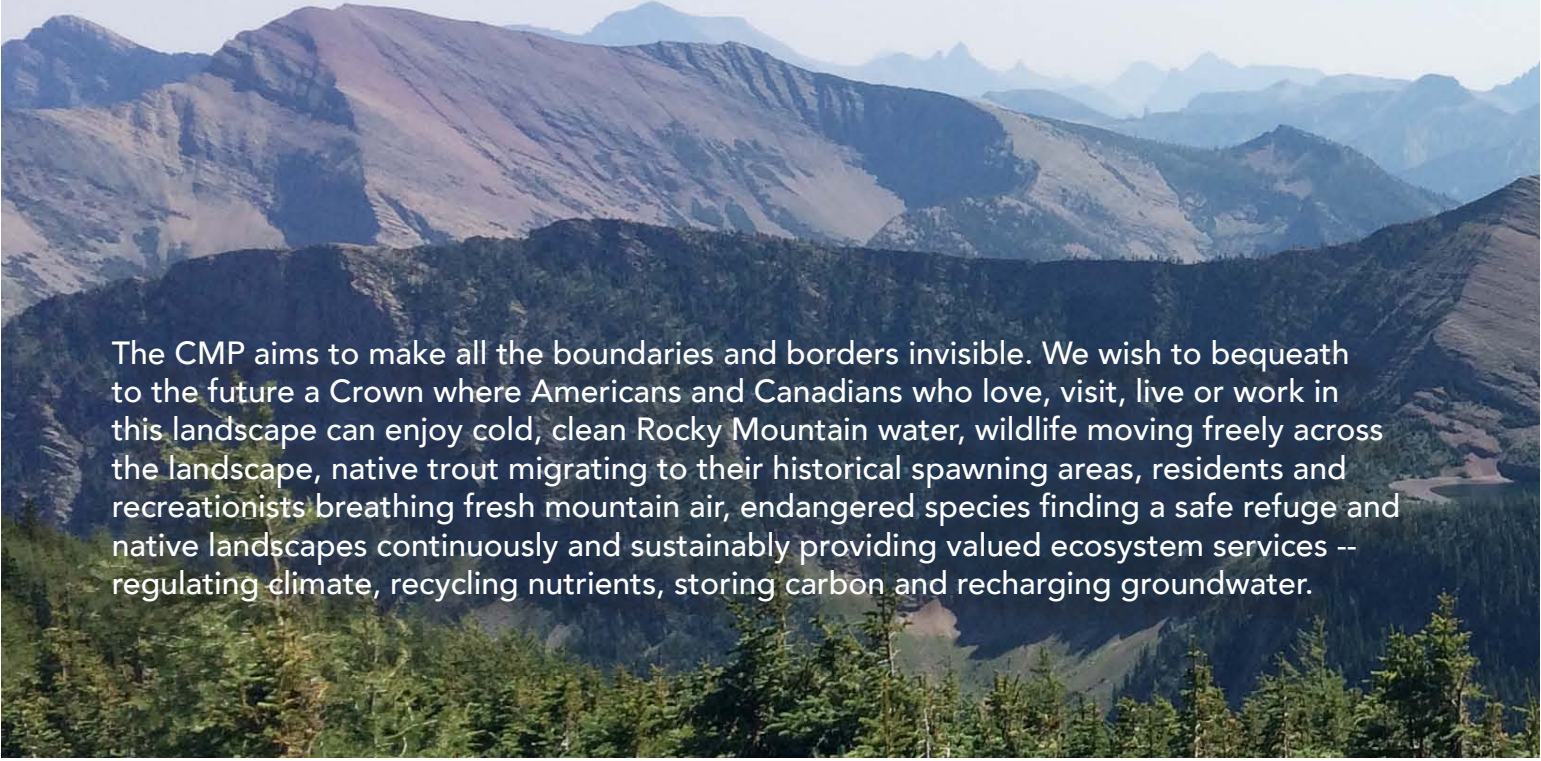
With initial funding from the Crown Roundtable (CRT), the CMP has entered into a 'Crown Adaptation Partnership' (CAP) with The Wilderness Society and the Crown Conservation Initiative (CCI) to develop and deliver a suite of climate change adaptation Conservation Priorities<sup>4</sup>. The majority of current CMP Conservation Priorities are now being addressed through the CAP collaboration and it is likely that this relationship will evolve further during the life of the current Strategic Conservation Framework. Two other large collaboratives are especially important to the CMP. We support and are supported by, the Great Northern Landscape Conservation Cooperative (GNLCC) and we network with other key players in the Crown through the CRT.

1 The combined effects of past, present and reasonably foreseeable land-use activities, over time, on the environment.

2 The term agencies is used throughout this document in a broad and inclusive manner and includes universities, Tribes, First Nations and federal, provincial, state and local governments.

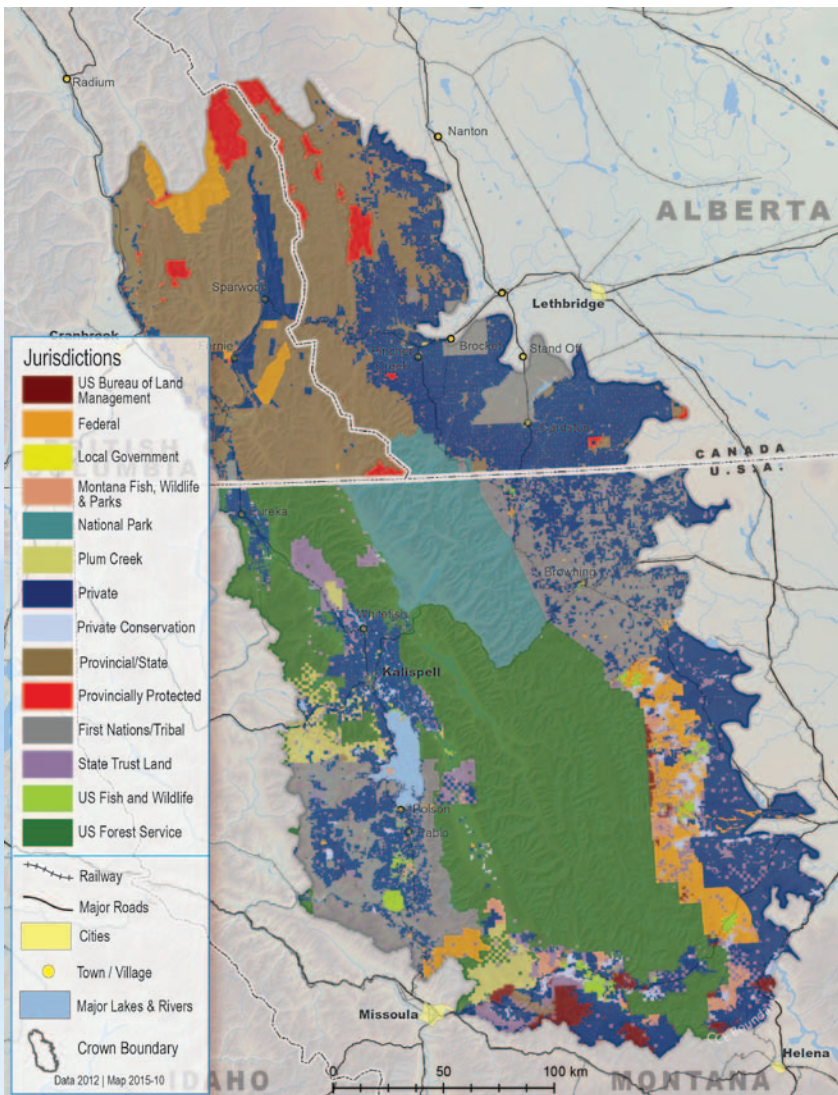
3 A measurable statement of a desirable future condition, for a conservation priority or stressor, which is attainable through management action and collaboration with partners.

4 The elements of ecosystem structure and function that are a current focus of the CMP, with consideration of ecological, social and economic feasibility.



The CMP aims to make all the boundaries and borders invisible. We wish to bequeath to the future a Crown where Americans and Canadians who love, visit, live or work in this landscape can enjoy cold, clean Rocky Mountain water, wildlife moving freely across the landscape, native trout migrating to their historical spawning areas, residents and recreationists breathing fresh mountain air, endangered species finding a safe refuge and native landscapes continuously and sustainably providing valued ecosystem services -- regulating climate, recycling nutrients, storing carbon and recharging groundwater.





**Figure 2.** Jurisdictional Complexity in the Crown

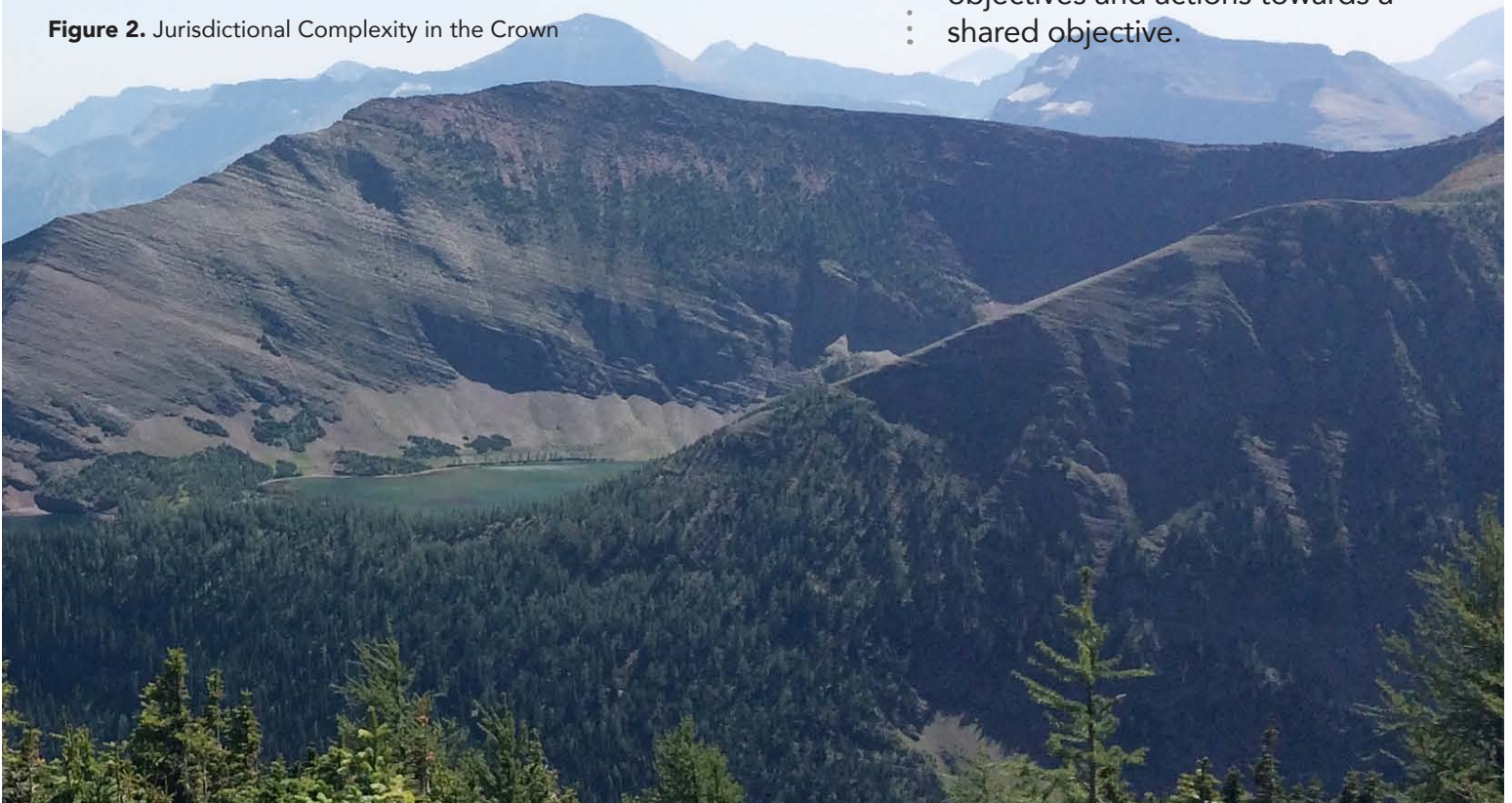
## OUR VISION

### MANAGING TOGETHER FOR ECOLOGICAL INTEGRITY AT A LARGE LANDSCAPE SCALE

*We will collectively define measures of ecological integrity and the adaptive capacity to meet them, across borders, amongst jurisdictions and with stakeholders by the end of the decade.*

## MISSION

The CMP supports the management of highly valued ecological systems across complex jurisdictional boundaries within the Crown. It does this by building awareness of ecological issues, sharing information and best practices and supporting and enhancing decision making in order to help align individual jurisdiction's management objectives and actions towards a shared objective.





# Key Accomplishments



## Overcoming Jurisdictional Boundaries, Addressing Barriers to Managing Across Boundaries

Working across jurisdictions in a large, international landscape, the CMP recognized the need and built a *common data template and transboundary datasets* that informs Conservation Priorities, Landscape Stressors<sup>5</sup>, Management Stressors and Management Outcomes.

## Maintaining a Transboundary Foundational Database

### Creating Transboundary Datasets

Consistent, transboundary geospatial datasets are a key resource for managing at a large landscape scale. The CMP has collected, compiled and synthesized data from across the Crown for the baseline year of 2000. The CMP is committed to updating these datasets over time to document and analyze both spatial and temporal land-use and land cover trends.



<sup>5</sup> Anthropogenic forces acting singly and in combination to create system-wide negative impacts on conservation priorities. Key stressors in the Crown are climate change, invasive species and land use change.

<sup>6</sup> Focused work undertaken in support of the overall TCI program, to develop information and management outcomes for conservation priorities and stressors.

## The Crown Adaptation Partnership - Linking Initiatives Toward Landscape Outcomes:

The CMP joins with the Crown Conservation Initiative, the Wilderness Society, the US Forest Service, the Great Northern LCC and the Crown Roundtable to collectively prioritize and implement Crown-wide climate adaptation projects for key Conservation Priorities across the landscape. We are working together to adopt collaborative solutions to transboundary issues such as climate change, invasive species and land use change.

## Preventing the Spread of Aquatic Invasive Species (AIS)

The CMP is developing a Crown AIS Protocol, aligning management across multiple scales to collectively achieve prevention, containment, education and perimeter defense.



## Increasing the Resiliency of Native, Cold-water Adapted Salmonids

Partnering with the US Geological Survey, the Crown Conservation Initiative, the Wilderness Society and the US Forest Service, the CMP convened experts and stakeholders to *prioritize a suite of climate adaptation pilot projects<sup>6</sup> in priority rivers across the Crown of the Continent for bull trout and westslope cutthroat trout.*

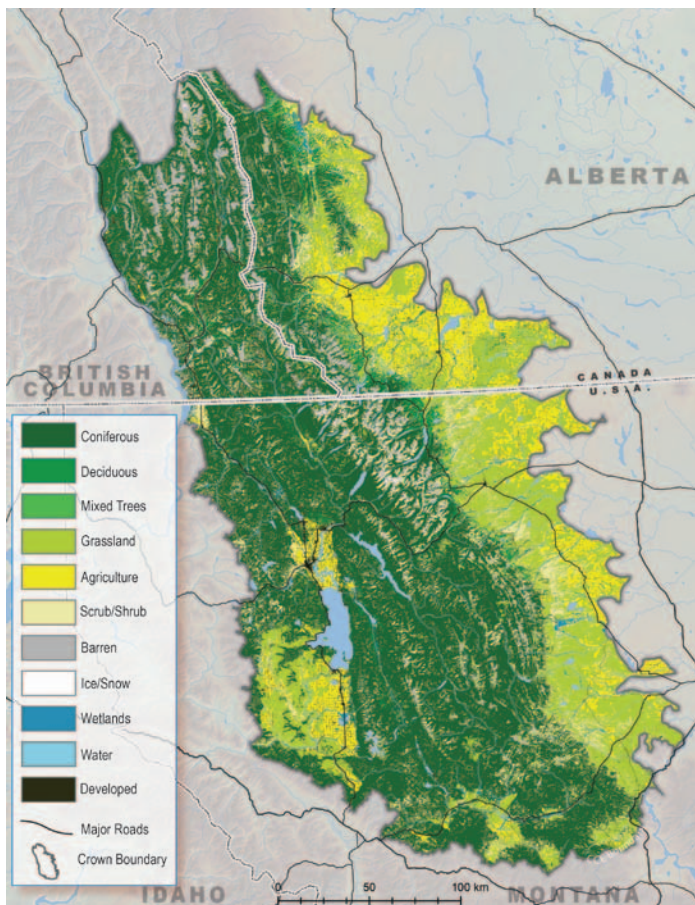
## Grizzly Bear Occupancy

Using our transboundary datasets and grizzly bear detection data provided by our partners in Alberta, British Columbia and Montana, we created a regional model of grizzly bear occupancy, complementing other fine-scale modeling activities occurring elsewhere in the Crown. Additionally, building on a successful Montana program, the CMP has also successfully promoted the use of community volunteers in hair snag grizzly bear monitoring in southwest Alberta.

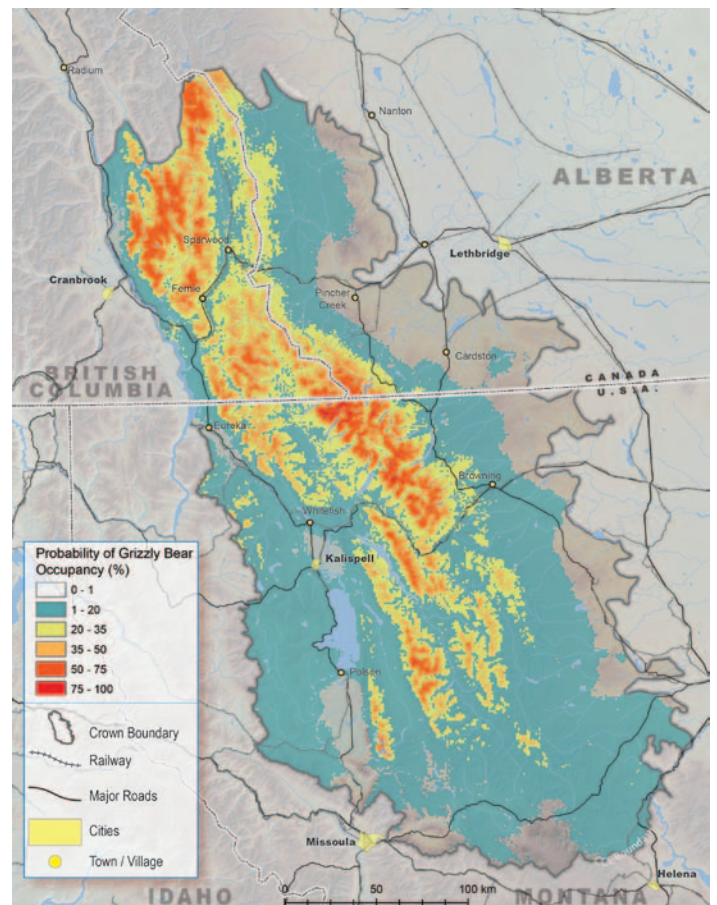
## Managing Noxious Weeds at the Scale of the Crown

Starting with the annual CMP Forum in 2005, and following up in 2015, the CMP is working with partners to coordinate and align data and management for some of the region's top terrestrial invasive plants. The CMP aims to support a region-wide strategy that synthesizes challenges and successes, early invaders, treatment strategies and jurisdictional mandates.



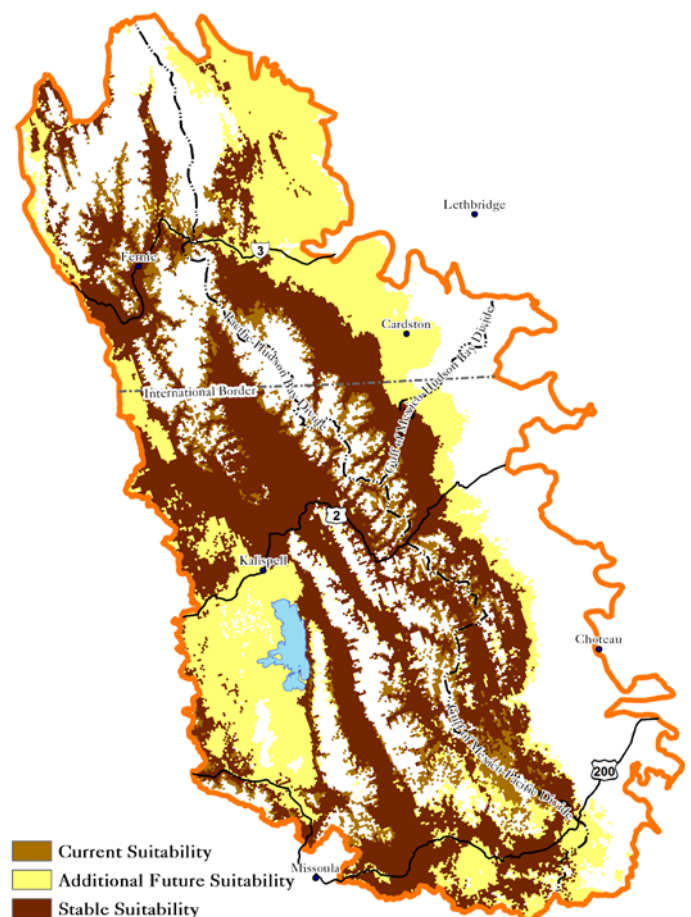


**Figure 3.** Land Use and Land Cover in the Crown



**Figure 4.** Probability of grizzly bear occupancy across the Crown

**Figure 5.** Current and future habitat suitability of orange hawkweed. Modeled using species presence data collected throughout the Crown; associating with climate conditions at species location. Future suitable habitat created by extrapolating the species/climate relationship using moderate emissions climate scenario. Suitability does not equal species presence; rather it indicates climatic conditions are potentially suitable. Map by BrayBeltrán.





# CMP's Conservation Agenda: The Transboundary Conservation Initiative

The Transboundary Conservation Initiative<sup>7</sup> (TCI) is focused on addressing ecological integrity for the whole environment (biotic/abiotic) and all the stressors that act on it. The TCI provides a framework for addressing key regional stressors and developing management outcomes for discrete Conservation Priorities. From these priorities, the CMP and partners pursue project-based work that, in turn informs collective actions by individual agencies, toward achieving collaborative management outcomes at a landscape scale. Voluntary actions being taken by government or non-government parties to meet a shared conservation priority are documented in a Transboundary Management Protocol<sup>8</sup>.

The current priorities of the CMP are developed using the Transboundary Conservation Initiative framework. Direction for which priorities are included in the TCI comes from several sources. The annual CMP Forum, organized by the Steering Committee and interested partners focuses on current and emerging conservation issues. Forum outcomes contribute to composition of the TCI components (Projects, Management Outcomes, Conservation Priorities and Stressors.) TCI priorities also result from collaboration between agencies and stakeholders through workshops or other catalysts. These priorities reflect some of the top ecological challenges facing the Crown region, which the

CMP Steering Committee can influence or contribute towards improving.

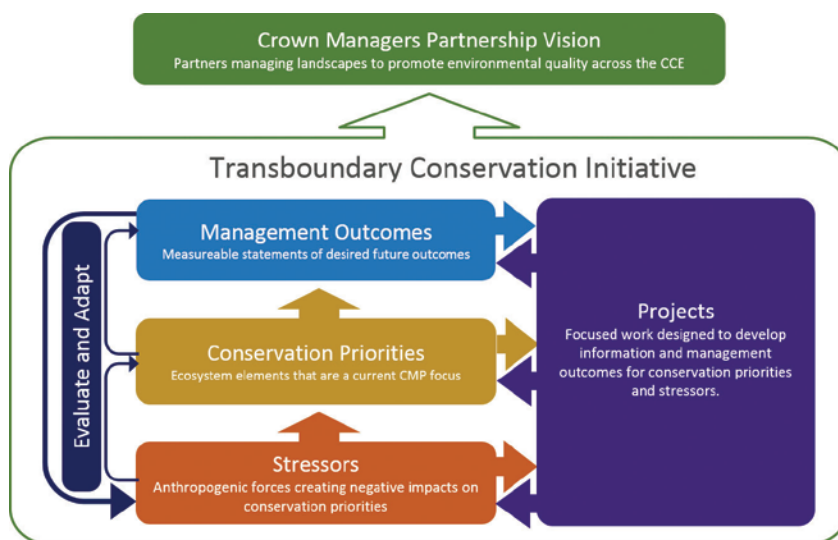
Responsibility for the development and delivery of the TCI is shared among the four functional areas (Steering Committee, agency staff, stakeholders, and Secretariat). Once TCI components are developed, the four functional areas have various roles in advancing the TCI. Depending on the situation, the Steering Committee, agency staff, or stakeholders may choose to take one of three roles with respect to the TCI priorities:

**LEAD** take a lead role to plan, organize and secure funds.

**SUPPORT** lend support to another leading party through sharing information with partners or stakeholders, providing data or analysis, organizing workshops. This includes formal partnerships.

**MONITOR** actively monitor the progress of other parties or organizations on issues of interest, with the objective of measuring progress and assessing the need or opportunity to become more actively involved.

Annual work plans will define TCI priorities and roles for the CMP Steering Committee, identified agencies and stakeholder partners.



**Figure 6.** Transboundary Conservation Initiative framework

<sup>7</sup> The Transboundary Conservation Initiative was formerly titled the Ecological Health Project.

<sup>8</sup> A short document outlining voluntary collaborative actions by government or non-government parties to meet a management outcome for a conservation priority.

## CROWN MANAGERS PARTNERSHIP FORUM HISTORY

- 2001  
**Transboundary Collaboration**  
*Cranbrook, BC*
- 2002  
**Cumulative Effects** *Whitefish, MT*
- 2003  
**Conservation Education**  
*Pincher Creek, AB*
- 2004  
**Wildfire** *Cranbrook, BC*
- 2005  
**Invasive Plant Management**  
*Kalispell, MT*
- 2006  
**Watershed Management & Partnerships** *Lethbridge, AB*
- 2007  
**Ecological Health in the Crown of the Continent** *Cranbrook, BC*
- 2008  
**Large Carnivores** *Somers, MT*
- 2009  
**Biodiversity** *Pincher Creek, AB*
- 2010  
**Climate Change** *Fernie, BC*
- 2011  
**Aquatic Invasive Species** *Polson, MT*
- 2012  
**Connections to the Land: First Nations and Tribes in the Crown of the Continent** *Lethbridge, AB*
- 2013  
**Large Landscapes: Working Across Boundaries** *Cranbrook, BC*
- 2014  
**Managing for Climate Change in the Crown of the Continent Ecosystem** *Missoula, MT*
- 2015  
**Climate, People and Terrestrial Invasive Species: Taking Collective Action in the Crown of the Continent** *Lethbridge, AB*
- 2016  
**We Need the Needles: Coordinating Action to Conserve 5-Needle Pine Forests in the Crown of the Continent** *Fernie, BC*



# Current Conservation Priorities

## LANDSCAPE STRESSORS:

- Invasive Species  
(Aquatic and Terrestrial Plants)
- Climate Change
- Land Use Change

## CONSERVATION PRIORITIES:

- Bull trout/Westslope cutthroat
- Grizzly bear
- Whitebark pine
- Meso-carnivores

### Aquatic Invasive Species (AIS)

The CMP is leading the effort in the Crown of the Continent to prevent the introduction of new invasive species, and to contain the spread of existing invasive species. Over the next five years, the AIS prevention effort will be based on the CMP AIS Transboundary Management Protocol which focuses on 1) watercraft inspection stations, 2) monitoring, 3) rapid response and 4) education.

The goal of the CMP is to continue to build upon the current coordinated AIS prevention effort between Montana and Alberta, and to incorporate British Columbia into the integrated Crown program. As the CMP's AIS program matures, the managers will move beyond the focus of two invasive mussels and one invasive aquatic weed to prioritize new threats as they arise. Future target species will be determined based on data obtained from AIS monitoring efforts and from identified threats external to the Crown ecosystem. The CMP will continue to



Wildlife crossings are an example of an out-come that the CMP would work with partners to reduce fragmentation in the Crown.

undertake innovative pilots that can be used as a model to 1) further the goals outlined in the CMP AIS Transboundary Management Protocol and 2) enhance regional AIS prevention efforts at the large landscape scale.

### Land Use Change

The Crown is a largely intact ecosystem that still maintains all of the large carnivore species and, with the exception of caribou, all of the large ungulate species. In many cases these species are at their southeastern limit in terms of their distribution in North America. As such, populations in the United States are closely connected to populations further north in Canada. The health of these populations is dependent on maintaining a landscape that allows wildlife species to move freely with minimal mortality from human related factors. However, there are locations where the permeability of the habitat to these species has been degraded and, in some cases, connectivity for wildlife movement has been impacted. The continued loss of connectivity will create insular populations that are at higher risk to mortality and further decline.

Human modification to the landscape is a key stressor impacting overall landscape connectivity in the Crown (Figure 7). The CMP has developed a preliminary assessment of human modification as a tool for understanding and mapping both the intensity and change in anthropogenic footprint over time. The CMP is currently using the analysis to inform identification of priority areas for management action aimed at decreasing or alleviating landscape fragmentation, and enhancing connectivity.

The Crown Managers Partnership has identified five areas that have the greatest risk to fragmentation and a reduction in landscape connectivity for the Crown. More specifically, they include:

1. Highway 3 corridor within the Alberta and British Columbia portions of the Crown;
2. Highway 2 corridor within the Montana portion of the Crown;
3. The trans-boundary Flathead watershed, including the Flathead River in British Columbia and the north fork of the Flathead in Montana;
4. The continental divide area between Alberta and British Columbia, both north and south of the Highway 3 corridor; and
5. The southwest Alberta headwaters.



All of these areas are at various stages in terms of understanding the problems and initiating appropriate management to mitigate the risk of further fragmentation. In most cases, there are many organizations, government and non-government, that are working to address these challenges. The role of the CMP will vary dependent on each circumstance.

## Native Salmonids

While the Crown is a stronghold for both bull trout and westslope cutthroat trout, both species face significant challenges in an era of shifting climate. Increasing stream temperatures are expected to reduce the availability of suitable habitat for bull trout, and increase levels of hybridization between westslope cutthroat trout and non-native trout species. In November 2014, the Crown Managers Partnership, The Wilderness Society, the Crown Conservation Initiative and the Northern Rockies Adaptation Partnership held a workshop in Montana entitled, 'Piloting Adaptation Strategies to Reduce Vulnerability and Increase Resilience for Native Salmonids in the Crown of the Continent Ecosystem'. Other partners for this event included the CRT, the U.S. Geological Survey, and the Great Northern LCC's Rocky Mountain Partnership Forum. This workshop was widely attended by scientists, non-governmental organizations and agency managers. Ground-breaking work by Clint Muhlfeld and colleagues to project climate change impacts on suitable habitat provided attendees with a scientific basis for workshop discussions, which continued with jurisdictional perspectives, case studies and the identification of potential strategies.

Following the workshop through extensive work with partners, a short list of initial pilot projects were identified. Their

purpose is to increase resilience, secure and restore critical habitat and protect native (non-hybridized) population. Efforts during the 2016 – 2020 period will focus on the implementation of these strategies:

- Conduct a conservation population assessment for native salmonids in the Crown;
- Replicate, restore and/or translocate native salmonid populations to cold water refugia in priority trans-boundary watersheds east of the Divide;
- Export successful bull trout translocations piloted in the North Fork of the Blackfoot to other landscapes; and Suppress invasive rainbow trout in the Transboundary Flathead and implement best management practices to other locales (if translocation is unsuccessful).

## Terrestrial Invasive Plants

The CMP recognizes that terrestrial invasive plants are one of the largest threats to ecological integrity in the Crown. In 2005, the annual CMP Forum focused on invasive plant management to share issues, information and best practices. One result of that forum was the creation of Guide to Invasive Plants of the Crown of the Continent, which has been widely shared and is in use by most agencies throughout the Crown. Building on the results of a climate change scenario planning workshop hosted by Glacier National Park in 2010, the 2014 CMP Forum focused on adaptation management for climate change. At that forum five key ecological issues were identified which are likely to be strongly affected by climate change and where efforts to improve the current situation could be critical to improving the future outcome in the Crown.



One of these issues was invasive plant management. The 2015 CMP Forum focused on terrestrial invasive plant management. Through a variety of data captures, survey, and analysis, the CMP and expert speakers provided participants a snapshot of the current status and likely future of invasive plants, along with current priorities and efforts of the management agencies throughout the Crown. (Figure 5). Building on that information, participants worked to identify common objectives, goals and supporting tools that would help coordinate the current efforts of the various agencies. Six priority action themes emerged at the 2015 CMP Forum: 1) survey and monitoring, 2) prioritization methods, 3) external communication and awareness, 4) internal communication, 5) common management approaches, and 6) vectors and corridors. The creation of a working group to coordinate these significant and complex themes was suggested. Work is underway to establish this working group.





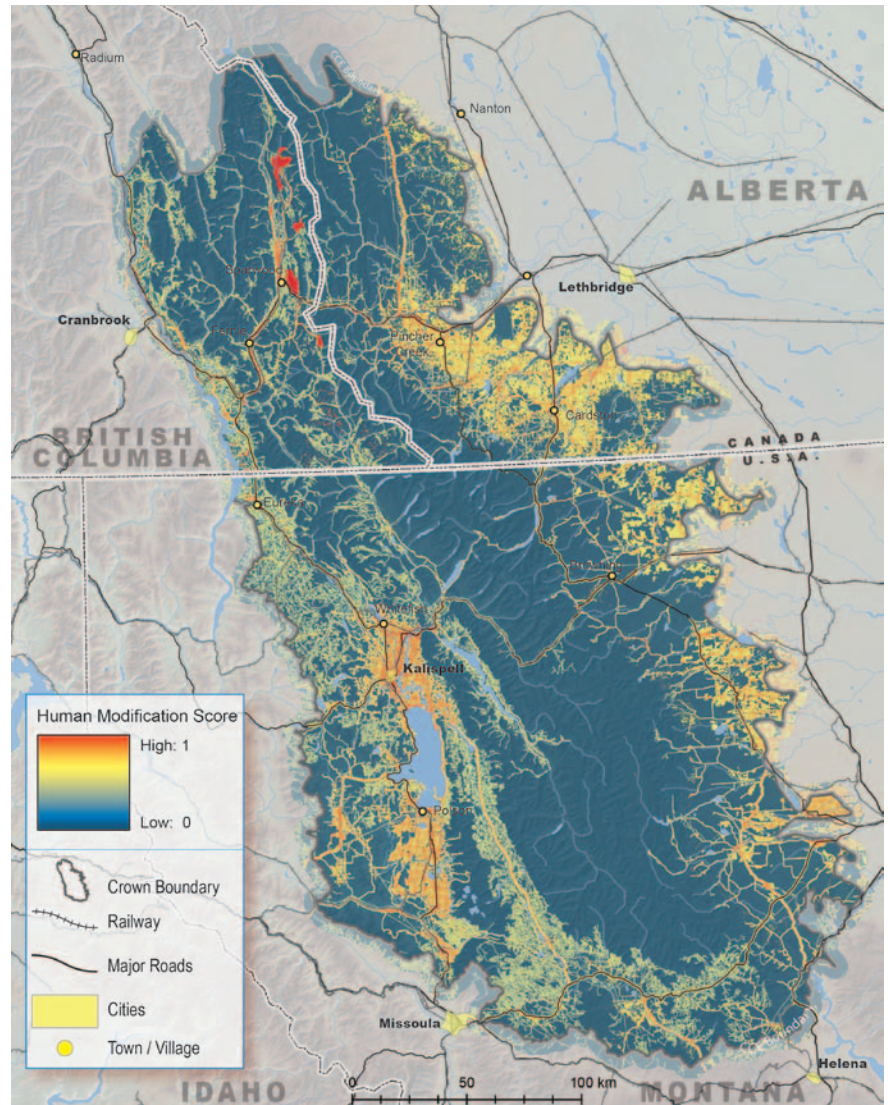
## Five Needle Pine Forests

Whitebark pine forests anchor high mountain ecosystems. It acts as a keystone species by providing important food sources for a wide variety of animals. It is also a foundation species that stabilizes ecosystem function by shading snowpack and reducing erosion, which helps to regulate downstream flows. Less is known about the ecology of limber pine forests, whose range overlaps with whitebark pine. It is well documented, however, that the Crown's whitebark pine and limber pine forests have declined significantly due to a combination of stressors, including an exotic pathogen, native pine beetle epidemics and the exclusion of fire from these forests. Climate changes further threatens these forests by exacerbating the present stressors and acting as a new stressor.

The CMP, working in full collaboration with non-governmental organization partners, will focus on the implementation of several shared priorities related to restoring whitebark and limber pine forests in the Crown:

- In close collaboration with whitebark and limber pine specialists, identify existing distribution and status of whitebark and limber pine forests, and identify the climate-smart restoration strategies that can most effectively recover these species in an era of rapid climate change;
- Advance solutions that overcome barriers to restoration, including issues related to limited supplies of five needle pine seedlings for planting, human development impacts in five needle pine forests, limited public awareness and support for the level of restoration required; and
- Increase the pace and scale of restoration by identifying high priority areas for restoration in the Crown, by leveraging individual agencies and Tribes/First Nations contributions, and by working with community and NGO partners to seek new sources of funding and capacity.

The Crown Managers Partnership will explore the possibility of organizing a formal Crown of the Continent Five Needle Pine Working Group comprised of all willing agency, Tribal/First Nation, community, NGO and industry partners committed to advancing these shared priorities.



**Figure 7.** Human modification in the Crown





## How to get involved:

**Visit the CMP website:**  
[www.crownmanagers.org](http://www.crownmanagers.org)

**Attend an annual CMP Forum**  
([www.crownmanagers.org](http://www.crownmanagers.org))

**Contact the CMP Secretariat:**  
[crownmanagers@gmail.com](mailto:crownmanagers@gmail.com)

**Contact** one of the CMP Steering Committee members, a current list of members is posted on the CMP website.

**Plan/organize** or lend support to the Conservation Priorities by sharing information or organizing workshops.





# Appendix



## Roles and Operational Structure

The operational structure of the CMP is divided into four functional areas with both distinct and overlapping roles. These functional areas are:

- **Steering Committee:** The Steering Committee is comprised primarily of interested agency staff from the Partnership agencies representing a variety of geographic areas and resource management sectors, however it can and does include members from adjacent universities and interested stakeholders.
- **Agency Staff** (First Nations/Tribes, federal agencies and provincial or state agencies, universities and local governments): Participation of agency staff of the partnership members' involvement is determined by each agency. However, as a principle, the Partnership focus is on senior/middle managers and those technical and professional staff who are managing programs with adjacent jurisdictions.
- **Stakeholders** (private landholders, leasees, industrial disposition holders, urban and rural municipalities, grassroots collaborative working groups, and non-profit organizations): Stakeholder involvement is determined by their interest and capacity for engagement. Stakeholders have similar roles as Agency Staff in providing expertise, contributing data, fostering support from their members and contributing in-kind and financial and staff resources.
- **Secretariat:** Dedicated support to the CMP is provided by a Coordinator who is responsible for the day-to-day management and coordination of the CMP activities, which includes:
  - general coordination and facilitation of the CMP;
  - financial reporting for the CMP;
  - coordination of internal and external communication;
  - coordination of fund development, including seeking opportunities to leverage agency dollars; and
  - maintaining the CMP website

## Decision Criteria

There are many projects and initiatives that will contribute to the Conservation Priorities. At the same time, not all activities will be feasible or have a likelihood of success. This is the lens through which projects will be assessed to determine if they are likely to contribute to our Conservation Priorities.

## Analytical Priorities

The CMP is working from a solid foundation of:

1. Developing geospatial transboundary datasets and models.
2. Engaging with key researchers and scientists to support identified Conservation Priorities.
3. Supporting research to fill information gaps, including through the use of student volunteers.

### PHOTO CREDITS

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Table of Contents: Tim Rains, NPS  
Page 2: Sasha Harriott  
Page 3: Sasha Harriott  
Page 4: Sasha Harriott  
Page 5: Sasha Harriott  
Page 6: Ian Dyson (landscape and painted turtles) and Sasha Harriott (balsam root)  
Page 9: Parks Canada  
Page 10: Ian Dyson  
Page 11: Sasha Harriott  
Page 12: Tim Rains, NPS  
Page 13: Ian Dyson



