Background

Climate change has been called the Defining Challenge of Our Times. It also remains a contested political flashpoint.

The landscapes of the Crown of the Continent Ecosystem (CCE) are experiencing a downward trend in snowpack, warmer winters, more rain on snow events along with major flood and drought events. Recent warming exceeds the global average. Climate change is expected to amplify variability in the hydrological/climate relationship and result in future climates outside the range of natural variability.

Efforts to manage for climate change in the Crown have a practical focus on addressing the realities of the dry, wet, heat cycles that are affecting ecosystems, landholders and communities.

How did your approach to climate change adaptation evolve?

The Crown Managers Partnership (CMP) undertook a number of initiatives in 2010 to build awareness and capacity amongst the partner agencies on climate change adaptation:

- In March, the CMP participated in a Crown of the Continent scenario planning project (C4SP) held in Whitefish, MT;
- In April, the CMP Annual Forum in Fernie, BC focused on climate change: [http://crownmanagers.org/past-cmp-forums/](http://crownmanagers.org/past-cmp-forums/);
- Throughout the spring and into the summer the CMP participated in a USGS/USFS sponsored webinar series using a decision-support tool for climate change adaptation, ‘FRAME’ (Framing Research for Adaptive Management of Ecosystems) culminating in a workshop sponsored by the National Park Service Climate Change Response Program and facilitated by the Arid Lands Initiative: [http://static1.1.sqspcdn.com/static/f/808688/24662815/1396467496987/C4SP_FINAL_REPORT.pdf?token=Xx5OK4PuccVphQQsx9bSGVqSAPA%3D](http://static1.1.sqspcdn.com/static/f/808688/24662815/1396467496987/C4SP_FINAL_REPORT.pdf?token=Xx5OK4PuccVphQQsx9bSGVqSAPA%3D); and
- In Sept 2010, CMP members participated in a Waterton workshop hosted by the Wilberforce Foundation and EcoAdapt to discuss climate change adaption and implementation in the CCE.

In 2013 the CMP Steering Committee, while struggling with capacity issues, decided it was past time to move formally on the climate change adaptation stressor and so intentionally began to explore opportunities for doing so with other partners in the CCE.

Over the winter of 2013/14 the CMP collaborated with The Wilderness Society (TWS) and the Crown of the Continent Conservation Initiative (CCCI) to submit a joint funding proposal to the Crown Round Table’s Adaptive Management Initiative (AMI). The proposal was funded and collaboration amongst the partnerships and collective sponsorship of two workshops focused on managing for climate change adaptation in the CCE.

How did you go about deciding what to do?

In March 2014 the CMP held its Annual Forum at the University of Montana in Missoula on the theme, Managing for Climate Change in the Crown of the Continent Ecosystem: [http://crownmanagers.org/past-cmp-forums/](http://crownmanagers.org/past-cmp-forums/). With facilitation provided by staff of the US National Park Service Climate Change Response Program participants built on
the scenarios originally generated in 2010 to further explore what actions can be taken given both current scientific knowledge and the uncertainties about future conditions: http://crownmanagers.org/storage/CMP-Forum-2014_Scenario-Planning-Report_FINAL201407171.pdf.

Immediately following the Annual Forum, and at the same location with many of the same participants the first AMI workshop was held: ‘Taking Action on Climate Change Adaptation: A Workshop to Develop Shared Strategies for a Shared Landscape’: http://crownmanagers.org/adaptive-management-initiati/. Invitees included Crown Round Table partners and other AMI grantees, along with Tribes and First Nations, federal, state and provincial agency representatives, universities, conservation organizations and community stakeholders. Participants pooled their expertise and perspectives, looking at opportunities for linkages and synergies in work underway as well as seeking consensus on initial Crown-wide priorities.

**What is the Crown Adaptation Partnership (CAP)?**

Following the first AMI workshop, the partners decided to formalize the relationship in a Crown Adaptation Partnership with CMP/TWS and CCI membership to focus on the suite of climate change adaptation priorities.

The formalization of the partnership was a natural outcome because:

- The CMP is interested in management agencies adopting an integrated climate change strategy that addresses issues at the landscape level
- The Wilderness Society (TWS) has experience in linking community stakeholders with industry, and conservation organizations as they pursue collective goals on the landscape, all based on the best available science and existing policy opportunities; and
- The Crown Conservation Initiative’s (CCI) has extensive research on several ecological processes and species that include likely responses to climate change, vulnerabilities and risks, as well as potential adaptation strategies.

The pooling of assets to link science to agencies and ultimately to a broad group of stakeholders has been a positive and transformative experience. It has led to a significant evolutionary ‘state change’ in the capacity and effectiveness of the broader TCI.

**What outcome do you want to achieve?**

The Transboundary Conservation Initiative enterprise entails capacity building for Crown stakeholders, strengthening resilience of ecosystems and institutions, raising awareness among stakeholders about impact risks from all stressors, and adoption by stakeholders and agencies together of targeted, place-based strategies to redress, conserve, mitigate or adapt.

Conservation priorities that are developed and delivered through the TCI will:

- Consider the potential consequences of future climate change when defining the desired outcomes; and
- Adopt appropriate climate change adaptation measures where there is agency/stakeholder interest and appetite to act and where effectiveness can be enhanced by implementing at the scale of the CCE.

**What are your priorities and what have you done?**

Initial Crown-wide priorities identified at the March 2014 AMI Stakeholder workshop comprise: 1) aquatic invasive species, 2) native salmonids, 3) five-needle pines, 4) terrestrial invasive plants, and 5) fire in mixed-severity fire regimes. A final priority are the meso-carnivores which were added after follow-up meetings from the workshop with Forest Service staff from Region 1 and additional partners.
Crown stakeholder workshops have been held and initial Crown-wide outcomes and strategies have been identified for aquatic invasive species (this was initiated by the CMP before the CAP partnership was constituted), native salmonids, terrestrial invasive plants and five needle pines. All these conservation priorities are in the delivery phase. There are separate fact sheets in this series on each of these conservation priorities.

What’s next?

Adoption of the Landscape Conservation Design framework by the Landscape Conservation Cooperative (LCC) network is providing an opportunity to be more intentional about components of the Transboundary Conservation Initiative, especially in delivery (coordinated on-the-ground action, tracking, monitoring, measurement, reporting, adaptive management): https://lccnetwork.org/issue/landscape-conservation-planning-and-design. The Great Northern LCC is a key sponsor of the TCI and is engaged as a partner with CAP/CMP in evaluating applied delivery of all components of the program with internal and external alignment.

Climate change acts together with other stressors (e.g. anthropogenic activities and land use footprint and aquatic and terrestrial invasives) to produce cumulative negative environmental effects. We will develop a strategy to improve our spatial and temporal understanding of these integrated effects on the Crown-wide ecosystem. We will also translate this new understanding into our support to science and the development and delivery of conservation priorities.

Significant preparatory work has been undertaken on meso-carnivores and CAP/CMP intend to hold a workshop bringing together scientists, jurisdictions, stakeholders and practitioners in 2017 to collectively articulate desired and achievable Crown-wide outcome and strategies on climate change adaptation. Key initial actions have included:

- In June 2015, the Alberta Conservation Association hosted a one day Cross Boundary Wolverine Workshop in Blairmore, AB;
- In 2014 and again in Dec 2015 the SW Crown Collaborative held a meso-carnivore monitoring workshop in Missoula, MT as a way of facilitating the sharing of lessons learned by the many diverse organizations currently monitoring wolverine, Canada lynx and fisher across the region: http://www.swcrown.org/wp-content/uploads/2016/01/Workshop-Notes-FINAL.pdf;
- Planning for an April 2017 Rocky Mountains meso-carnivore monitoring workshop is underway, with organizers adding a new component this year to allow managers to describe how they currently use monitoring data to better manage meso-carnivores and to transmit informational needs directly to workshop participants;
- Completion of an initial report on wolverine management, genetics and connectivity in the CCE prepared for TWS by Casey Valencia, an Environmental Studies Program student at the University of Montana (2016); and
- Strong connections have been made with the Cascadia Trans-Boundary Lynx Working Group to better understand how federal, state and provincial managers, Tribes and First Nations, NGO’s and citizen groups are coordinating the monitoring and management of this species in a transboundary landscape.

Fire in mixed severity fire regimes is awaiting initiation pending CAP capacity to proceed.

Collaboration (who is involved)?

Federal, state and provincial agencies, Tribes and First Nations, universities, NGOs, watershed groups, the Crown Round Table, the GNLCC, America’s Great Outdoors, watershed groups, conservation organizations, community-based collaborators and stakeholders.
Links to other initiatives:

Climate change adaptation is a topic of interest to other large landscape initiatives at multiple scales:

- The Great Northern Landscape Conservation Cooperative (GNLCC), Y2Y and America’s Great Outdoors (AGO);
- Other regional scale partnerships in Cascadia, the High Divide, Greater Yellowstone and Columbia Plateau; and
- Sub-regional landscape initiatives, such as the numerous watershed partnerships and community-based collaboratives in the Crown.

Intentional efforts are being made to connect with these initiatives so that we can:

- Learn from one another;
- Collaborate/partner where it makes sense to do so; and
- Focus our various efforts most effectively at the scale we are working without redundancy, competition or overlap.

Links to a few key websites:

- CAP Crown Toolbox: [http://crownmanagers.org/storage/Crown%20Adaptation%20Partnership%20toolbox_Anne%20Carlson%20April%202016.pdf](http://crownmanagers.org/storage/Crown%20Adaptation%20Partnership%20toolbox_Anne%20Carlson%20April%202016.pdf); and
- CAP Youtube webinar (2 hours): [https://www.youtube.com/watch?v=MAHm5ibIPbE](https://www.youtube.com/watch?v=MAHm5ibIPbE).

Publications:

- Crown climate change gap analysis: [http://static1.1.sqspcdn.com/static/f/808688/27208448/1472050976507/CC_Gap_Analysis_Report_Public_FINAL_v2.pdf?token=goRxlInBMI2sJOluHl8wnQmf0k%3D](http://static1.1.sqspcdn.com/static/f/808688/27208448/1472050976507/CC_Gap_Analysis_Report_Public_FINAL_v2.pdf?token=goRxlInBMI2sJOluHl8wnQmf0k%3D)

Video links:
Cold Waters vimeo: [https://vimeo.com/124560152](https://vimeo.com/124560152)
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