

Crown LCD Leadership Meeting Notes March 24, 2020

Action Items (March):

What?	Who?	When?
Gather info on how other LCDs determined project area	Sean	By Tech Team call (Apr 14)
Ask Tech Team for recommendation	Sean	On Tech Team call (Apr 14)
Follow up with Mike D, CSKT and other Tribes & First Nations	Sean	Before April Leadership Team call
Flag a process for how people can contribute following this call	Sean	NOW: You may call/email me anytime or log on to Adobe Connect and use the chat box anytime. All contact info is in the slide presentation (attached to 3-27 email)

Action Items (Prior):

What?	Who?	When?
Follow up on recommendations for additional stakeholders	Sean	Before 24 March
Think about your, and your organizations, vision of a future Crown; review slides	Everyone	Next 2 months (by mid-April)
Review and synthesize key elements from existing plans	Analysts and Technical Team	Before April Leadership Team call
Consider this geography. What makes sense for the extent of our landscape design?	Everyone	Before 24 March phone call (this will be a priority topic of the call)

Meeting Notes and Materials:

Recording: <https://meet39041854.adobeconnect.com/pil2u1nlsrjw/>

Presentation Slides: Attached (Crown_LCD_LeadershipTeam_3-23-2020.pdf)

Next Call: April 28, 2020 at 11 am

Attendees

Kris Tempel, Habitat Conservation Biologist, Montana Fish, Wildlife and Parks
Sean Johnson, District Conservationist, NRCS Kalispell
Anne Carlson, Senior Climate Adaptation Specialist, The Wilderness Society
Natalie Poremba, Conservation Priorities Coordinator & Secretariat, Crown Managers Partnership
Kris Inman, Wildlife Conservation Society, Ennis, Montana
Wyatt Frampton, MT DNRC. Forest Action Plan Project Manager
Phil Matson, Flathead Lake Biological Station
Amy McLeod, Alberta Riparian Habitat Management Society, Calgary, Alberta
Aubin Douglas, USFWS Div. of Realty, Centennial, CO
Tracy Lee, Miistakis Institute, Calgary, Alberta
Constanza von der Pahlen, Critical Lands Program Director, Flathead Lakers
Mary Riddle, Glacier National Park
Erin Sexton, University of Montana, Flathead Lake Biological St
Katie Morrison: Canadian Parks and Wilderness Society - Southern Alberta
Greg Watson, FWS
Laura Blonski, Alberta Environment and Parks.
Linh Hoang, US Forest Service; Inventory, Monitoring, Assessment, and Climate Change Coord. Missoula
Tara Carolin, Glacier National Park
Mary T. McClelland, West Glacier Visioning Project, Gateway Project
Sean Finn: Science Coordinator, US Fish and Wildlife Service

Agenda:

1. Quick review of agenda, any additions?
2. Brief introductions
3. Project update: funds and staffing
4. Review action items from February call
5. Feedback, comments and questions to date
6. Discuss (& decide?) the project area extent (see attachment)
7. Feature selection
8. Other topics

*** Brief recap: Most of session & discussion was around defining a project area; Leadership Team asked for more information before coming to a decision ***

Summary of Comments on Project Boundary (full dialog at bottom of document):

[These comments relate to slides 8-11 on Crown_LCD_LeadershipTeam_3-23-2020.pdf, they are summarized and grouped by theme]

Why are we doing this?

Not sure what the goal is

What is the purpose, what are we trying to achieve?

[Review 'Primer on LCD' fact sheet; recall (see Action Items) we will revisit and craft a Vision Statement that captures our goal for the Crown design]

Soften the line

Boundary should include a shade of grey buffering 'hard' boundary [good point, caveat whatever boundary we land on - it is not a hard line - but a fluid, ecological boundary]

The application of a buffer allows us to better capture the landscape if/when it shifts with projected CC

Existing Ecological Definitions

Seem to me like we have had people spend a lot of time developing this boundary, and it is recognized as the boundary people use for Crown. [Good point; The CCE was well thought out and works; for an ecological boundary this is proven with previous Crown work]

Use the existing CCE boundary as the constant and expand as appropriate for the resource [that might be a good approach]

Biosphere Reserve model uses multiple boundaries with core areas and buffer areas of management cooperation.

Are there specific, compelling reasons why the CCE boundary is not working for any reason? [what is the purpose, what are we trying to achieve? If that includes management changes, how easy is it for managers to use this boundary in creating or implementing management actions? What is the compelling reason for not using existing CCE map?]

Socio-Political Considerations

The goal of the LCD is to include both socio-economic features as well as biophysical features, so it's important that the boundary is meaningful to both types of features.

IF we use a political boundary we will run up against the fact that resources don't recognize those boundaries. Where do we stop?

Does the current border drawn specifically include or exclude populated areas that are within a certain distance of it? Thinking about how to get community advocates in populated areas

CMP boundary may not be fully representative of non-ecological aspects for the landscape

Does the LCD require community buy in and implementation? If so, then we may need to explain why this ecological boundary is what the LCD will address.

Project Area relative to Landscape Features and Threats

Consider the larger picture for some species migration, in particular in light of climate change

Biological reason to expand the buffer. Grizzly bears come to mind. FWP has been working to reestablish bears in the Cabinet Mtns, and connectivity to the bears in the Crown area are key

If we expect some plants to shift habitat with climate change, it is good to get the larger picture

Line based on the key resources we focus on and can be different depending on the key resource.

Fuzzy boundary assessment depends on the resource in question

Potential additional data inputs

Should **review Tribe and First Nation lands and territories (action)**

We (CSKT) have some newer aboriginal territories maps that I could share if you are interested? Also some place names maps.

Other suggestions: Working Landscapes> prime agricultural soils; Ecosystem services> water quality; Floodplains and wetlands> water storage and food chain integrity;

Watershed boundary is appropriate for assessment of water resources

The southern and western "biological" boundary can be consistent with ecoregion boundaries as the eastern side

Interactions

For the wolverine work, we realized land management and species management different across land and wildlife management agencies so we looked at the socio-political landscape by land ownership rather than governing landscape (county ex. in MT) so this could be a way we look at the socio-political landscape and include land ownership and land use [That's a good idea; I agree]

Other Considerations:

If we make this a larger area, that we may need to consider what to call it.

Process

I wonder if you think there is need for change **the analyst team can present something and tell us why so we can react (action)**

Do you want to flag a process for how people can contribute following this call? [Yes that would be a good way to involve additional people] **(action)**

How did other LCDs select their project area? **(action – summarize this)**

Landscape Features:

(these comments relate to slides 12-14 on Crown_LCD_LeadershipTeam_3-23-2020.pdf)

under working landscape, we also have mines and tourism impacts. Was there a reason these are not included?

NPS went through a similar process to develop "Vital Signs" monitoring program for networks of park units. As an example the Rocky Mountain Network monitoring plan which includes Glacier can be found here.

<https://www.nps.gov/im/romn/publications-other.htm>

Somewhere it would be good to include an assessment of population growth and residential development/urban areas.

after desired features are selected would we be breaking out by "expert teams" for each feature to make progress in the year time frame?

part of selection of our conservation features might include data availability

quality of life linked to scenic beauty and recreational spaces... And, any potential to include carbon storage as a service?

A few other resources - particularly related to community values: Southern Foothills Study

<https://salts.land/publications/>; Southern Foothills Community Stewardship Initiative – Values and Voices

<https://aref.ab.ca/wp-content/uploads/2012/08/values-and-voices.pdf>; Community Values Assessment for the M.D. of Pincher Creek <http://www.sasci.ca/community-values-assessment/>

Full Chat Dialog

Constanza von der Pahlen: Comment on boundary outline: Boundary should include a shade of grey buffering 'hard' boundary to allow for flexibility in assessments. A watershed boundary is appropriate for assessment of water resources. However, it may not allow us to look at the larger picture for some species migration, in particular in light of climate change.

Erin Sexton: good point Constanza! the CMP has versions of the Crown map that have a "fuzzier" boundary to indicate that it is not a hard line

Erin Sexton: I would suggest that we caveat whatever boundary we land on with a comment that it is not a hard line - but a fluid, ecological boundary

Linh Hoang (US Forest Service): yes a fluid line based on the key resources we focus on and can be different depending on the key resource.

Tara Carolin: The Biosphere Reserve model uses multiple boundaries with core areas and buffer areas of mangement cooperation.

Linh Hoang (US Forest Service): we can use the existing CCE boundary as the constant and expand as appropriate for the resource

Mary Riddle: that might be a good approach Linh. Regardless I think we have to be careful if we make this a larger area, that we may need to consider what to call it.

Kris Tempel: There is also a biological reason to expand the buffer. Grizzly bears come to mind. FWP has been working to reestablish bears in the Cabinet Mtns, and connectivity to the bears in the Crown area are key.

Constanza von der Pahlen: My thought. The fuzzy boundary assessment depends on the resource in question

laura: A fuzzy boundary - or the application of a buffer allows us to better capture the landscape if/when it shifts with projected CC

Mary Riddle: IF we use a political boundary we will run up against the fact that resources don't recognize those boundaries. Where do we stop? Or how big do we get?

Mary Riddle: Or how big do we get?

Constanza von der Pahlen: Also, if we expect some plants to shift habitat with climate change, it is good to get the larger picture - they aren't falling off the map completely, but just shifting...

Mary T. McClelland: Does the current border drawn specifically include or exclude populated areas that are within a certain distance of it? Thinking about how to get community advocates in populated areas.

Mary Riddle: Neither. The crown of the continent ecosystem boundary was determined purely on an ecological focus, not political.

Tracy Lee: Seem to me like we have had people spend a lot of time developing this boundary, and it is recognized as the boundary people use for Crown. I wonder if you think there is need for change the analyst team can present something and tell us why so we can react.

Mary Riddle: Good point Tracy. I think we have to go back to the purpose of the LCD project

Phil Matson: I wonder if the southern and western "biological" boundary can be consistent with ecoregion boundaries as the eastern side does (ab & mt seem to mesh nicely...) I will take a look into that.

Tara Carolin: Following up on Tracy's comment. The CCE was well thought out and works. The question is: Are there specific, compelling reasons why the CCE boundary is not working for any reason?

Katie Morrison 2: I think comes back to Mary's comment of what is the purpose, what are we trying to achieve. If that includes management changes, how easy is it for managers to use this boundary in creating or implementing management actions.

Aubin D.: It may not be fully representative of non-ecological aspects for the landscape

Mary Riddle: Right Tara. Which is why I asked Sean if we are having this discussion because he thinks we need to expand it to the political boundaries for this project.

Aubin D.: The goal of the LCD is to include both socio-economic features as well as biophysical features, so it's important that the boundary is meaningful to both types of features.

Mary Riddle: Thanks Aubin.

Connie Simmons: For an ecological boundary this is proven with previous Crown work. Does the LCD require community buy in and implementation? If so, then we may need to explain why this ecological boundary is what the LCD will address.

Mary Riddle: That is what I was trying to get an answer to.

Kris Inman: As a late entry to the conversation, not sure what the goal is - connectivity? Integrity/intactness of landscape under threats of climate change, expanding human footprint etc. With that in mind this could help us think about the human landscape can be defined by. For the wolverine work, we realized land management and species management different across land and wildlife management agencies so we looked at the socio-political landscape by land ownership rather than governing landscape (county ex. in MT) so this could be a way we look at the socio-political landscape and include land ownership and land use.

Aubin D.: That's a good idea Kris, something as a team we should discuss/look at

Anne Carlson: I agree. Beautifully articulated, Kris.

Constanza von der Pahlen: great list. Other suggestions: Working Landscapes> prime agricultural soils.

Constanza von der Pahlen: Ecosystem services> water quality.

Connie Simmons: I'm not sure how far we want to go with the Coarse Filter-Meso Filter etc... but under working landscape, we also have mines and tourism impacts. Was there a reason these are not included?

Constanza von der Pahlen: Floodplains and wetlands> water storage and food chain integrity (Ric Hauer et al research paper)

Erin Sexton: Hey Sean - since a lot of people are just seeing this for the first time - do you want to flag a process for how people can contribute following this call?

Constanza von der Pahlen: Yes, Erin. That would be a good way to involve additional people such as Audubon)

Tara Carolin: NPS went through a similar process to develop "Vital Signs" monitoring program for networks of park units. As an example the Rocky Mountain Network monitoring plan which includes Glacier can be found here.

<https://www.nps.gov/im/romn/publications-other.htm>

Constanza von der Pahlen: Somewhere it would be good to include an assessment of population growth and residential development/urban areas.

Kris Inman: To Anne's point - after desired features are selected would we be breaking out by "expert teams" for each feature to make progress in the year time frame?

Linh Hoang (US Forest Service): Sean - I do like the selection of key attributes and indicators to help us understand current condition and desired. I think part of selection of our conservation features might include data availability

Constanza von der Pahlen: One more thought: quality of life linked to scenic beauty and recreational spaces... And, any potential to include carbon storage as a service?

Wyatt Frampton: Thank you!

Mary T. McClelland: Thank you very much!

Linh Hoang (US Forest Service): thanks for all the thought put into this Sean and tech team!

Kris Tempel: Thank you everyone!

Mike Durglo: we have some newer aboriginal territories maps that I could share if you are interested? also some place names maps.

Constanza von der Pahlen: Thank you. Look forward to looking at the details.

Katie Morrison: A few other resources - particularly related to community values: Southern Foothills Study
<https://salts.land/publications/>

Katie Morrison: Southern Foothills Community Stewardship Initiative – Values and Voices <https://aref.ab.ca/wp-content/uploads/2012/08/values-and-voices.pdf>

Katie Morrison: Community Values Assessment for the M.D. of Pincher Creek <http://www.sasci.ca/community-values-assessment/>

Landscape Conservation Design for the Crown of the Continent



Leadership Team
23 March 2020

Please dial up: **866-795-8047 / Code: 6972717#**

Join: <https://meet39041854.adobeconnect.com/gnlcc>

Proposed Agenda

1. Quick review of agenda, any additions?
2. Brief introductions
3. Project update: funds and staffing
4. Review action items from February call
5. Feedback, comments and questions to date
6. Discuss (& decide?) the project area extent (see attachment)
7. Feature selection
8. Other topics

Any
Additions?

Please introduce yourself!

- Name
- Affiliation



LCD Budget Summary



Funds allocated 9 March 2020!

USFWS: FY19 Allocation: **\$41,831**

Recipient: UM Flathead Lakes

Biological Station:

Analysis & Modeling: \$17,455

Travel: \$12,897

Hardware/Software: \$ 2,250

Meeting Space: \$ 3,000

Overhead: \$ 6,230

In-Kind (S Finn salary): \$37,500

In-Kind (M Heller salary): \$15,000

In-Kind (Leadership Team,
Technical Team, etc): **A LOT**

Expect to make a similar request for FY20

Analysis Team



Sean Finn, U.S. Fish and Wildlife Service



Natalie Poremba, Crown Managers Partnership



Phil Matson, Flathead Lake Biological Station



Erin Sexton, Flathead Lake Biological Station



Matt Heller, U.S. Fish and Wildlife Service

Technical Team

Adam Collingwood, Parks Canada

Aubin Douglas, U.S. Fish and Wildlife Service

Bray Beltran, Heart of the Rockies Initiative

Danielle Pendlebury, Alberta Environment & Parks

Ken Sanderson, Miistakis Institute

Mary McFadzen, Montana State University

Your nominee / designee!

Outstanding Action Items :

What?	Who?	When?
Follow up on recommendations for additional stakeholders	Sean	Before 24 March
Think about your, and your organizations, vision of a future Crown; review slides	Everyone	Next 2 months (by mid-April)
Review and synthesize key elements from existing plans	Analysts and Technical Team	Before April Leadership Team call
Consider this geography. What makes sense for the extent of our landscape design?	Everyone	Before 24 March phone call (this will be a priority topic of the call)

- Thoughts ● Comments ● Questions ●



Defining the Project Area



Leadership Team's first big decision

Questions to consider:

- How has the area been defined?
- What human activities to encompass?
- Which species or populations are relevant and what are their extents?
- Where are key habitat types?
- Where are focal ecological processes happening?
Which do they affect?

Crown Managers Partnership Geography



Identified in 2008 by collaborations among CMP participants (mostly agency staff) and regional non-profit staff.

The orange polygon was intended to “develop an ecological justification for the CCE, to enable analysis and tracking of the ecosystem from an **ecological health perspective.**”

Alberta: follows the eastern boundary of the Foothills Fescue Subregion; the northern boundary was delineated from the Demarchi Northern Crown of the Continent ecoprovince.

Montana: the eastern boundary includes the Montana Foothills grassland Ecoregion; the western and southern boundary was delineated by subwatersheds.

British Columbia: the western boundary is the Kootenay River.

(CCE_Boundary_2008_UTMZone11NAD83 metadata, 2008)

Human Landscape + Biological Landscape

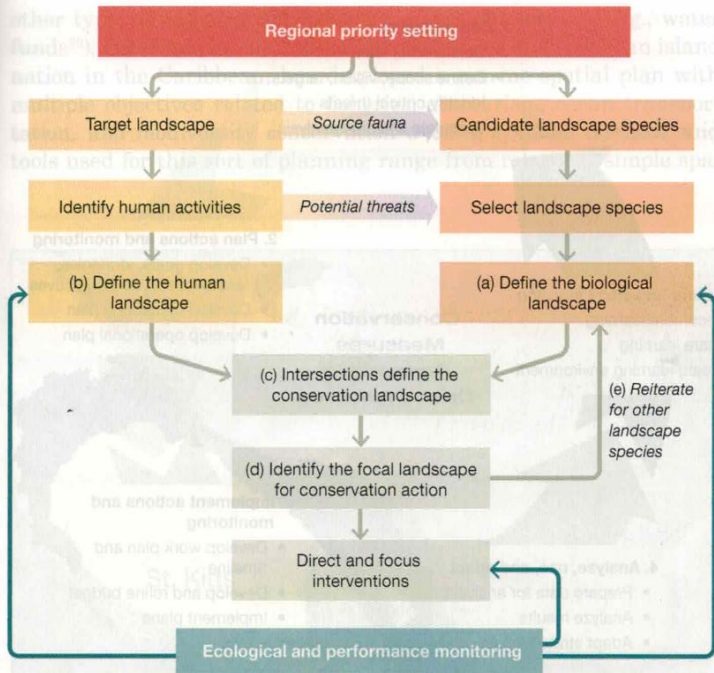


FIGURE 1.5 The Landscape Species Approach of the Wildlife Conservation Society. Like Conservation Action Planning, the Landscape Species Approach assumes first that a regional planning exercise has established a place and species as priorities. The steps outlined here can be thought of as a form of site conservation planning because they are focused on a place or a site where conservation action should take place (known as the conservation landscape). (Adapted from Sanderson et al., 2002.)

Sanderson et al (2002) suggests intersecting the definition of a 'human landscape' with a 'biological landscape' when identifying a conservation landscape

- By aligning socio-political and ecological borders, adverse effects of socio-political borders can be removed from the system
- Human behaviors and various incentives likely to be consistent across socio-political jurisdictions
- A lack of coordinated actions by those on either side of a boundary impacts on the efficiency and efficacy of ecosystem management (Dallimer and Strange 2015)

Defining the Geography

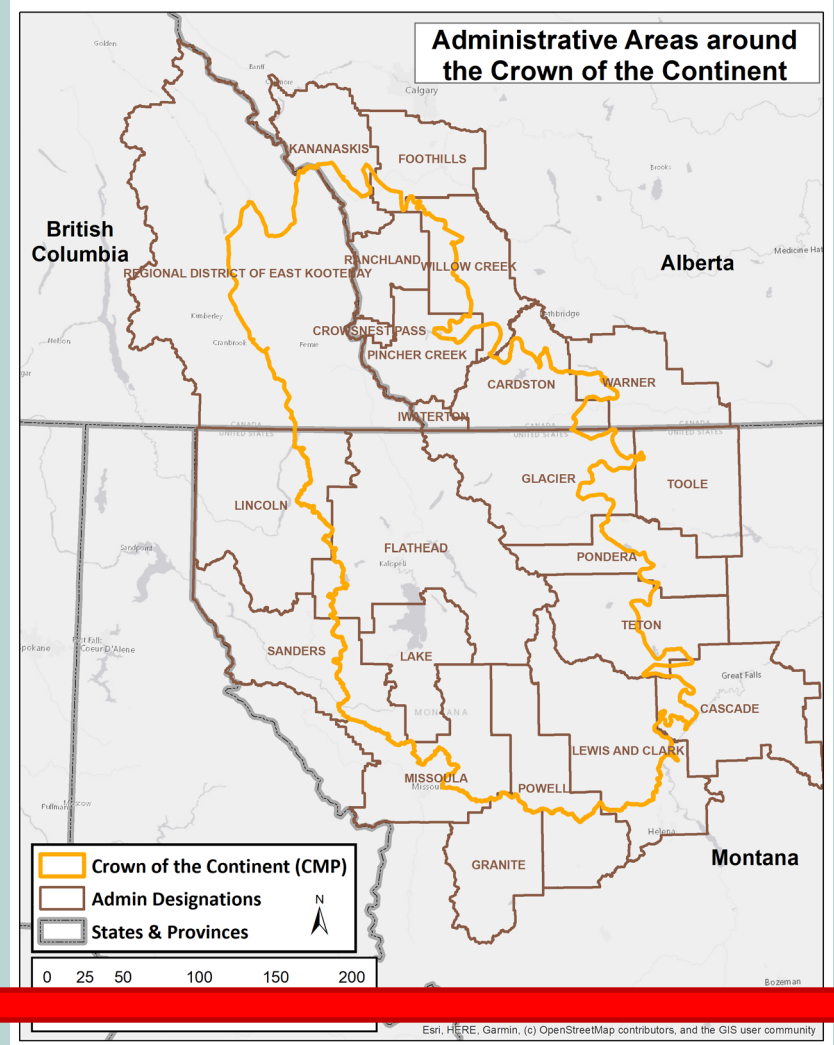
The Human Landscape?

British Columbia: Regional Districts – Legally defined administrative areas in BC, published by Ministry of Municipal Affairs and Housing

Alberta: Rural Municipal Boundaries maintained by the Ministry of Municipal Affairs (AB)

Montana: Counties, maintained by the State Board of County Commissioners (MT)

PLEASE DOCUMENT YOUR PERSPECTIVE



Selecting Landscape Features

The Crown is a large, complex region. Our goal as we develop a meaningful, effective design is to envision, then create a future landscape that retains high function. However, the system is too complex to include everything of value in the Crown. **We will work to select representative features.**

Conservation Feature – a representative of biodiversity

Economic Feature – a representative of economic diversity

Social / Cultural Feature – also know as Human Well-being features, representation of human needs, pursuit of goals and sustained quality of life



... the hope is that if certain features are comprehensively represented (e.g., habitat types, vascular plants, birds or biophysical domains) then they will act as reasonable surrogates for the rest of biodiversity ... likewise for social or economic features

Drafting Potential Features

Coarse Filter	Meso Filter	Fine Filter
Conifer Forest ¹	Mesic-Wet ¹	
	Xeric-Mesic ¹	
	Five Needle Pines²	<u>Whitebark Pine</u> ^{2,3} Limber Pine ²
Alpine ¹	Grass & Shrub ¹ Sparse or Barren ¹	
Deciduous Shrubland ¹		
Montane Grassland ¹		Spalding's Catchfly ³
Floodplain / Riparian ¹		Yellow-billed Cuckoo ³ Lewis' Woodpecker ¹
Wetlands ¹	Bog/Fen ¹ <u>Depressional Wetlands</u> ¹	Water Howellia ³ Waterfowl Production Areas ³
	Intermountain Valley Rivers ¹ Intermountain Valley Streams ¹ Mountain Streams (Headwaters) ¹	Cutthroat Trout¹ Bull Trout ^{1,2,3} Redband Trout¹ <u>Meltwater Lednian Stonefly</u> ³
Lakes and Reservoirs ¹		Lake Trout ¹
		Grizzly Bear ^{1,2,3} Wolverine ^{1,2,3} Canada Lynx ^{1,2,3} Fisher ²
Meso-Carnivores²		

Sensitive Plants ⁴		Water Howellia ³ Spalding's Catchfly ³
Wildlife Habitat Integrity & Ecological Connectivity⁴	Big Game Corridors ⁴	Mule Deer Rocky Mountain Elk Pronghorn
	Ecological Processes	Productivity Physical/Nutrient Cycles Phenology Disturbance Regimes
		Net Primary Productivity Water Cycle Carbon Cycle Fire on the Landscape Invasive Species Insects and Disease
Ecosystem Services	Watershed Integrity and Resilience	
Working Landscape ⁴	Timber Economy ⁴	Fiber supply ⁴ Quarry Rock ⁴
Fish and Wildlife-based Recreation ³	Hunting Access ³ Fishing Access ³	Disabled person access ³
Landscape Conservation Design	<u>Resilient Ecoregions</u>	

... the hope is that if certain features are comprehensively represented (e.g., habitat types, vascular plants, birds or biophysical domains) then they will act as reasonable surrogates for the rest of biodiversity ... likewise for social or economic features

Drafting Potential Features

Lead Organization	Document Title	Bob Creek/Black Creek (AB)	Livingston/Porcupine Hills (AB)	Montana Action Plan - SO 3362	Flathead Subbasin Assessment	Kootenai Conservation Plan
Montana Fish, Wildlife and Parks	Lost Trail Conservation Project					
Montana Fish, Wildlife and Parks	Kootenai Forestlands Conservation Project					
Northwest Power and Conservation Council	Flathead Subbasin Assessment					
Northwest Power and Conservation Council	Kootenai Subbasin Plan					
Montana Fish, Wildlife and Parks	Montana Action Plan - SO 3362					
Alberta Environment and Parks	Livingston-Porcupine Hills Land Footprint Management Plan					
Alberta Tourism, Parks and Recreation	Bob Creek/Black Creek					
US Forest Service	Flathead National Forest Land Management Plan					
US Forest Service	Kootenai National Forest Land Management Plan					
US Forest Service	Lewis and Clark National Forest Plan					
Montana Fish, Wildlife and Parks	Montana State Wildlife Action Plan					
US Fish and Wildlife Service	National Bison Range Comprehensive Conservation Plan					
US Fish and Wildlife Service	Lost Trail Comprehensive Conservation Plan					
Crown Managers Partnership	Strategic Conservation Framework 2016-2020					
Roundtable on the Crown of the Continent	Adapting to Change in the Crown of the Continent					
Ministry of Forests, Lands, Natural Resource Operations and Rural Dev	Service Plan					
Alberta Government	South Saskatchewan Regional Plan					
Glacier National Park	General Management Plan					
Waterton Lakes National Park	Management Plan					
Waterton Lakes National Park	State of the Park Assessment					
Bureau of Land Management	Middle Rockies Rapid Ecoregional Assessment					
Confederated Salish and Kootenai Tribes	Climate Change Strategic Plan					
Canadian Parks and Wilderness Society – Southern Alberta Chapter	Southern Eastern Slopes Conservation Strategy project					
Glacier National Park	Foundation Document					
Castle Provincial Park and Castle Wildland Provincial Park	Castle Management Plan					
Alberta Environment and Parks	Livingston-Porcupine Hills Recreation Management Plan					
US Forest Service	Climate change vulnerability and adaptation in the Northern Rocky Mountains					

Analysis / Project	Bob Creek/Black Creek (AB)	Livingston/Porcupine Hills (AB)	Montana Action Plan - SO 3362	Flathead Subbasin Assessment	Kootenai Conservation Plan
COST LAYER		percent area per planning unit with human footprint from the ABMI Human Footprint layer			
Target Species (77 terrestrial species)				X (cross check as table expands)	
native grasslands	X				
Elk	X	X	X	X	
Other ungulates	X	X (wintering, calving)			
Bighorn Sheep		X			
Mule Deer		X	X	X	
Moose		X		X	
Mountain Goat		X			
Pronghorn			X		
Grazing (legitimate and traditional use)	X				
West Slope Cutthroat Trout		X		X	
Rare Plants		X			
Butterflies		X			
CC refugia		X			
Surface water		X			

... the hope is that if certain features are comprehensively represented (e.g., habitat types, vascular plants, birds or biophysical domains) then they will act as reasonable surrogates for the rest of biodiversity ... likewise for social or economic features

Features, Key Attributes & Indicators

[An example from the Columbia Plateau LCD]

Eight (8) features identified and selected through stakeholder input

Relative evaluation of Viability and Ecological Integrity (defined by Landscape Context, Condition and Size)

Viability and Integrity Summary

Focal System or Species	Landscape Context	Condition	Size	Viability/Integrity
<i>Shrub Steppe and Dry Grasslands</i>	Fair	Fair	Poor	Fair
<i>Riverine Systems</i>	Unknown	Unknown	Unknown	Unknown
<i>Depressional Wetlands</i>	Fair	Fair	Fair	Fair
<i>Dunes</i>	Poor	Fair	Poor	Poor
<i>Transitional Woodlands</i>	Fair	Fair	Poor	Fair
<i>Cliffs, Talus and Caves</i>	Good	Unknown	Good	Good ¹
<i>Grouse</i>	Poor	Poor ²	Poor	Poor
<i>Burrowing Animals</i>	Poor	Poor	Fair	Poor
<i>Overall Viability/Integrity</i>				Fair ³

¹ This overall rank assumes that the condition of the vegetation in and around cliffs, talus and cave systems is no worse than other focal systems' condition – i.e. fair.

² Population growth rates for Sharp-tailed Grouse are high, due in part to translocation of birds from other states. However, natural growth rates for Sage-grouse are low, particularly in the Joint-Base Lewis-McChord Yakima Training Center population.

³ The overall viability/integrity of the system would be considered "fair" under all possible scenarios of integrity of the riverine systems (i.e. if the riverine systems' integrity were found to be poor, fair, good or even very good).

* Expert knowledge

Features, Key Attributes & Indicators

[An example from the Columbia Plateau LCD]

Shrub-Steppe and Dry Grasslands feature

Experts selected Key Attributes of the feature and **measurable** indicators for each Attribute

Key Ecological Attribute	Indicator	Poor	Fair	Good	Very Good	Information Source
Absolute Size	Patch size (acreage of shrub steppe)	Small (<40 ac; 16 ha)	(40-500 ac; 16-202 ha).	Large (500-1,000 ac; 202-405 ha)	Very Large (>1,000 ac; 405 ha)	Expert opinion (ALI 2014)
Landscape Pattern and Structure	Acreage of land surrounding large patches that is in semi-natural condition	Relictual: Natural or semi-natural habitat makes up <20% of land in a 500 m buffer around the patch	Fragmented: Natural or semi-natural habitat makes up 20-60% of land in a 500 m buffer around the patch	Variegated: Natural or semi-natural habitat makes up 60-90% of land in a 500 m buffer around the patch	Intact: Natural or semi-natural habitat makes up 90-100% of land in a 500 m buffer around the patch	Faber-Langendoen et al. 2008; Comer and Hak 2009
Connectivity	Acreage of land in large patches connected to other large patches	Isolated: No patches within 20 km cost weighted distance (100% dispersal capacity of grouse - larger movement species target)	Partially connected: One or more patches are within 20 km cost weighted distance (100% dispersal capacity of grouse - larger movement species target)	Connected: Two or more patches are within 1 km cost weighted distance (~100% dispersal capacity of burrowing animals - smaller movement species target). ³		Follows rationale developed for WWHCWG's Statewide Analysis (WHCWG 2010)
Fire Regime	Departure from historical fire regime	>50% of total acreage of patches is in LANDFIRE Vegetation Condition Class (VCC) 3	Most (>60%) of total acreage of patches is in LANDFIRE VCC 2; <30% of total acreage of patches is in VCC 3	Most (≥60%) of total acreage of patches is in VCC 1; <10% of total acreage in VCC 3 ⁴	>80% of total acreage of patches is in VCC 1	Based on ALI calculations; see ALI 2014 for details.
Relative Size	Acreage in shrub steppe ecological systems	Shrub steppe (target) is severely reduced from its original natural extent (<50% remains)	Shrub steppe (target) is substantially reduced from its original natural extent (50-80% remains)	Shrub steppe (target) is only modestly reduced from its original natural extent (80-95% remains)	Shrub steppe (target) is not reduced or is minimally reduced from natural extent (>95% remains)	Faber-Langendoen et al. 2008

Features, Key Attributes & Indicators

[An example from the Columbia Plateau LCD]

Shrub-Steppe and Dry Grasslands feature

Experts selected Key Attributes of the feature and measurable indicators for each Attribute

Identified condition classes for each Indicator using best available information

Then identified desirable condition for each Key Attribute

Key Ecological Attribute	Indicator	Poor	Fair	Good	Very Good	Information Source
Absolute Size	Patch size (acreage of shrub steppe)	Small (<40 ac; 16 ha)	(40-500 ac; 16-202 ha).	Large (500-1,000 ac; 202-405 ha)	Very Large (>1,000 ac; 405 ha)	Expert opinion (ALI 2014)
Landscape Pattern and Structure	Acreage of land surrounding large patches that is in semi-natural condition	Relictual: Natural or semi-natural habitat makes up <20% of land in a 500 m buffer around the patch	Fragmented: Natural or semi-natural habitat makes up 20-60% of land in a 500 m buffer around the patch	Variegated: Natural or semi-natural habitat makes up 60-90% of land in a 500 m buffer around the patch	Intact: Natural or semi-natural habitat makes up 90-100% of land in a 500 m buffer around the patch	Faber-Langendoen et al. 2008; Comer and Hak 2009
Connectivity	Acreage of land in large patches connected to other large patches	Isolated: No patches within 20 km cost weighted distance (100% dispersal capacity of grouse - larger movement species target)	Partially connected: One or more patches are within 20 km cost weighted distance (100% dispersal capacity of grouse - larger movement species target)	DESIRABLE weighted distance (~100% dispersal capacity of burrowing animals - smaller movement species target). ³		Follows rationale developed for WWHCWG's Statewide Analysis (WHCWG 2010)
Fire Regime	Departure from historical fire regime	>50% of total acreage of patches is in LANDFIRE Vegetation Condition Class (VCC) 3	Most (>60%) of total acreage of patches is in LANDFIRE VCC 2; <30% of total acreage of patches is in VCC 3	Most (≥60%) of total acreage of patches is in VCC 1; <10% of total acreage in VCC 3 ⁴	>80% of total acreage of patches is in VCC 1	Based on ALI calculations; see ALI 2014 for details.
Relative Size	Acreage in shrub steppe ecological systems	Shrub steppe (target) is severely reduced from its original natural extent (<50% remains)	Shrub steppe (target) is substantially reduced from its original natural extent (50-80% remains)	Shrub steppe (target) is only modestly reduced from its original natural extent (80-95% remains)	Shrub steppe (target) is not reduced or is minimally reduced from natural extent (>95% remains)	Faber-Langendoen et al. 2008

Next Steps



Vision for a Future Crown:

- Think about it ... we will return to this concept in April

Selecting Area of Interest:

- Can we make a decision now?
- What additional information or process do you need to inform your input?

Conservation Features:

- Think critically about what's important to you, your organization and your community
- Technical Team and lead analysts will be evaluating existing documents and available data
- Deeper discussion & focus on the March 24 phone call

Your additional thoughts, feedback, critique, reflections

- Including the position of your organization
- Feedback accepted in any form!

Discussion & Dialog



Please let us know what you're thinking!

You are unmuted ... we'd like to hear from you

You are also welcome to use the Chat Box



Bonus – those comments are sure to be included in project records!

If you prefer you can call me (208-426-2697) or email sean_finn@fws.gov