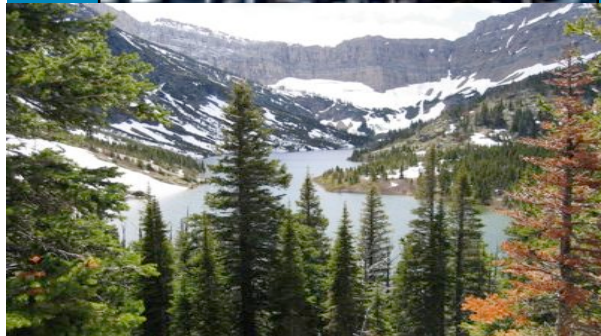




Crown Managers
Partnership



Managing for Ecological Health

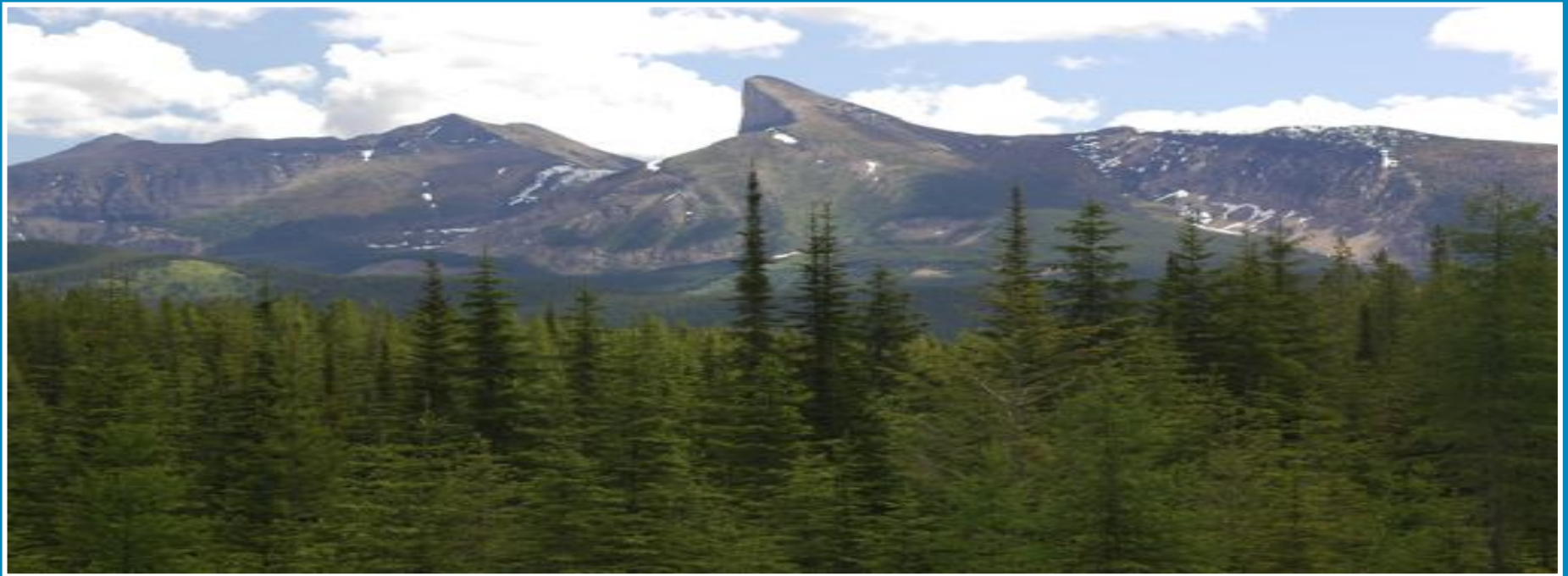
... at a regional
scale



Crown Managers Partnership (CMP)

Vision

“An ecologically healthy Crown of the
Continent Ecosystem”

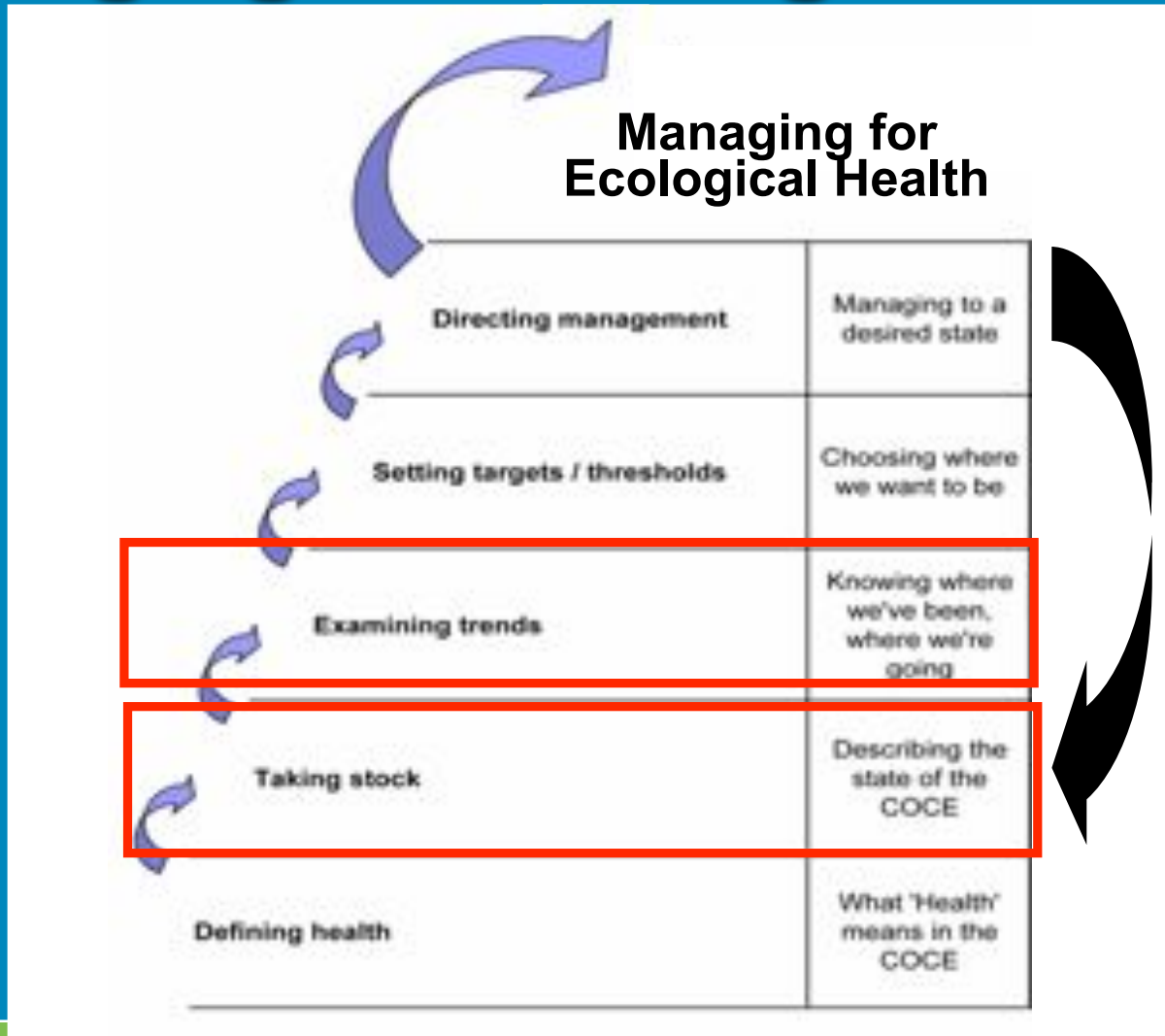


Ecological Health Project

- Long-term, multi-faceted project aimed at defining a level of ecological health that can inform agencies' management;
- Multi-year strategic priority for CMP;
- Establish an indicators-based, environmental outcomes approach



Managing for Ecological Health



Ecological Health Indicators

- Landscape (grizzly bear)
- Biodiversity or focal species
- Water quality and quantity
- Exotics
- Climate
- Air quality



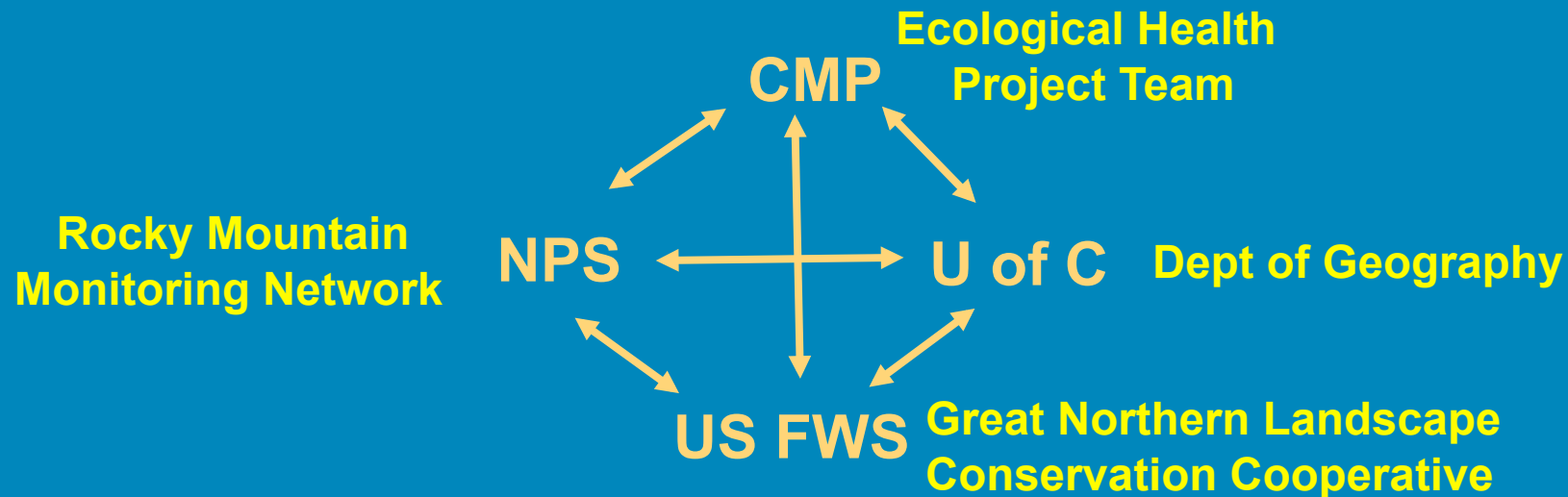
Ecological Health Project

Annual Crown Managers Forum:

- 2007 - Defining Ecological Health Indicators
- 2008 - Landscapes and Wide-ranging carnivores in the CCE
- 2009 - Biodiversity in the CCE
- 2010 - Climate Change in the CCE
- 2011 – Aquatic Invasive Species



An EH Partnership



Ecological Health Committee:

Erin Sexton (UM FLBS)
Cyndi Smith (WLNP)
Jack Potter (GNP)
Travis Ripley (ABSRD)

Landscapes Working Group

Greg McDermid (UCalgary)
Tracy Timmins (U Calgary)
Laura O'Gan (NPS ROMN)
Justin Wilkes (AB Env)

Landscape Dynamics

- Phase I: Data mining – freely available GIS-RS data
- Phase II: Prioritize data gaps (or inconsistent data) that are necessary for analysis and trend monitoring and fill them
- Phase III: Make inference/correlation b/t Landscape Connectivity and Indicators and EH overall
- Phase IV: Provide information that enables managers to identify targets, thresholds and environmental outcomes for the CCE



Geography Dept.



Rocky Mountain Network
Inventory and Monitoring Program



Multi-Agency, Transboundary
Collaborative



US Fish and Wildlife Service
Landscape Conservation Cooperative



Crown Managers
Partnership

Landscape Dynamics 2009-2010

- Data-base: Inventoried and synthesized all of the freely available geospatial data within the CCE for the land cover, phenology, disturbances, hydrology and roads
- First series of baseline data maps
- Two Reports:
 - ***CMP Landscapes Data Review Report – A Review of Baseline Geospatial Datasets for the Crown of the Continent Ecosystem Landscape Project***
 - ***NPscapes Products: Presenting examples of maps and statistical tables derived through NPscope (2010)***

CROWN MANAGERS PARTNERSHIP LANDSCAPES DATA REVIEW REPORT

A review of baseline geospatial datasets for the Crown of the Continent Ecosystem Landscape project

November, 2010



A collaborative project between
National Park Service,
University of Calgary,
Crown Managers Partnership, and
US Fish and Wildlife Service Landscape Conservation Cooperative

NPSCOPE PRODUCTS

Presenting example of maps and statistical tables derived through NPscope

November, 2010



A collaborative project between
National Park Service,
University of Calgary,
Crown Managers Partnership, and
US Fish and Wildlife Service Landscape Conservation Cooperative

11 pages

Landscape Dynamics 2009-2010

DATA ACCESS

- Data Location: University of Calgary
- Data Manager: Laura O'Gan, ROMN
- Access through web browser, FTP client or Windows share
- Some data restricted and requires permission to use



“Data use restricted to Crown Managers Partnership member use for the purposes of the CMP Ecological Health Program and CCE Landscape Analysis. Use subject to joint permission from the Chair of the EH Committee and one Steering Committee member from Alberta”

Landscape Dynamics 2009-2010

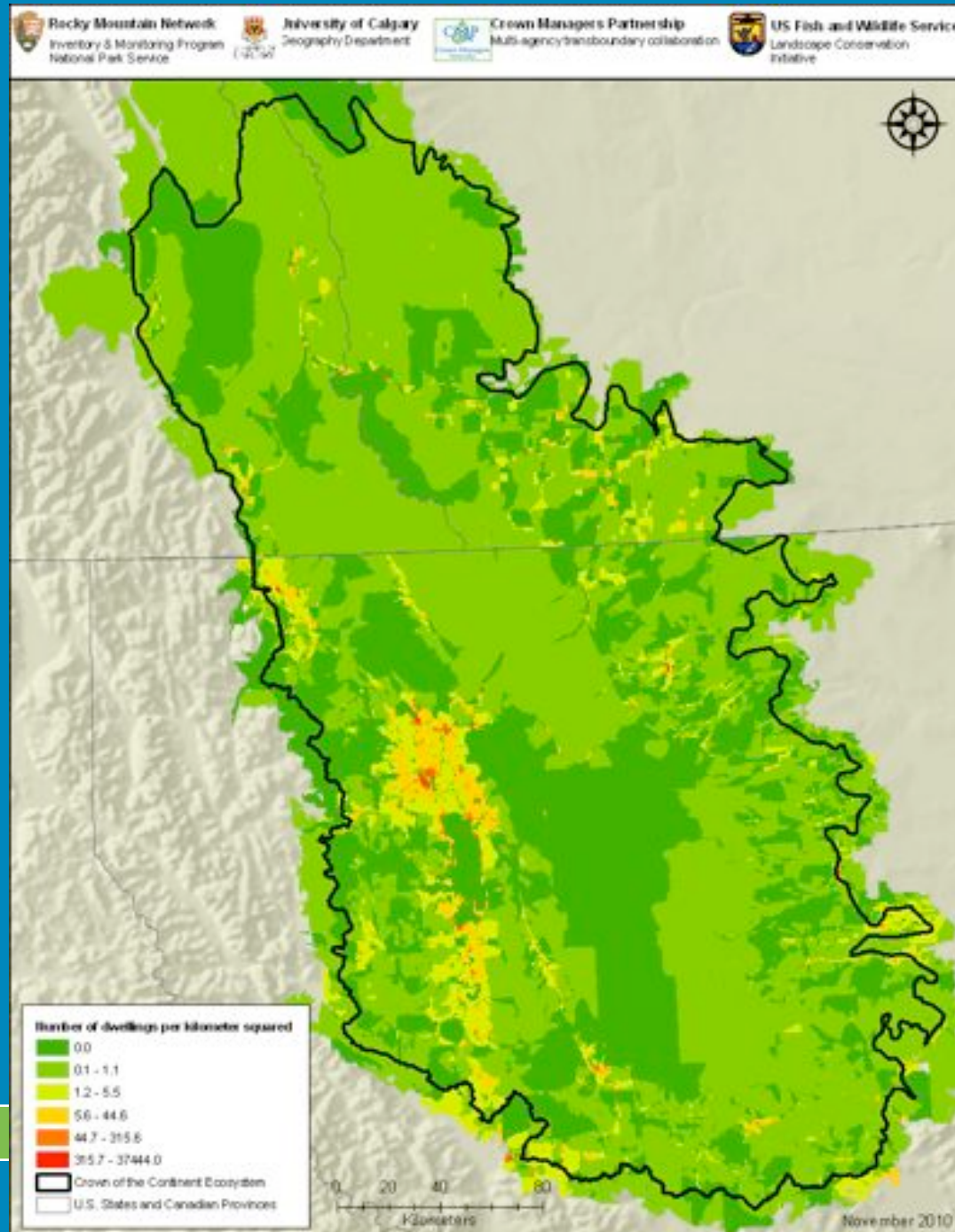
CCE Baseline Datasets

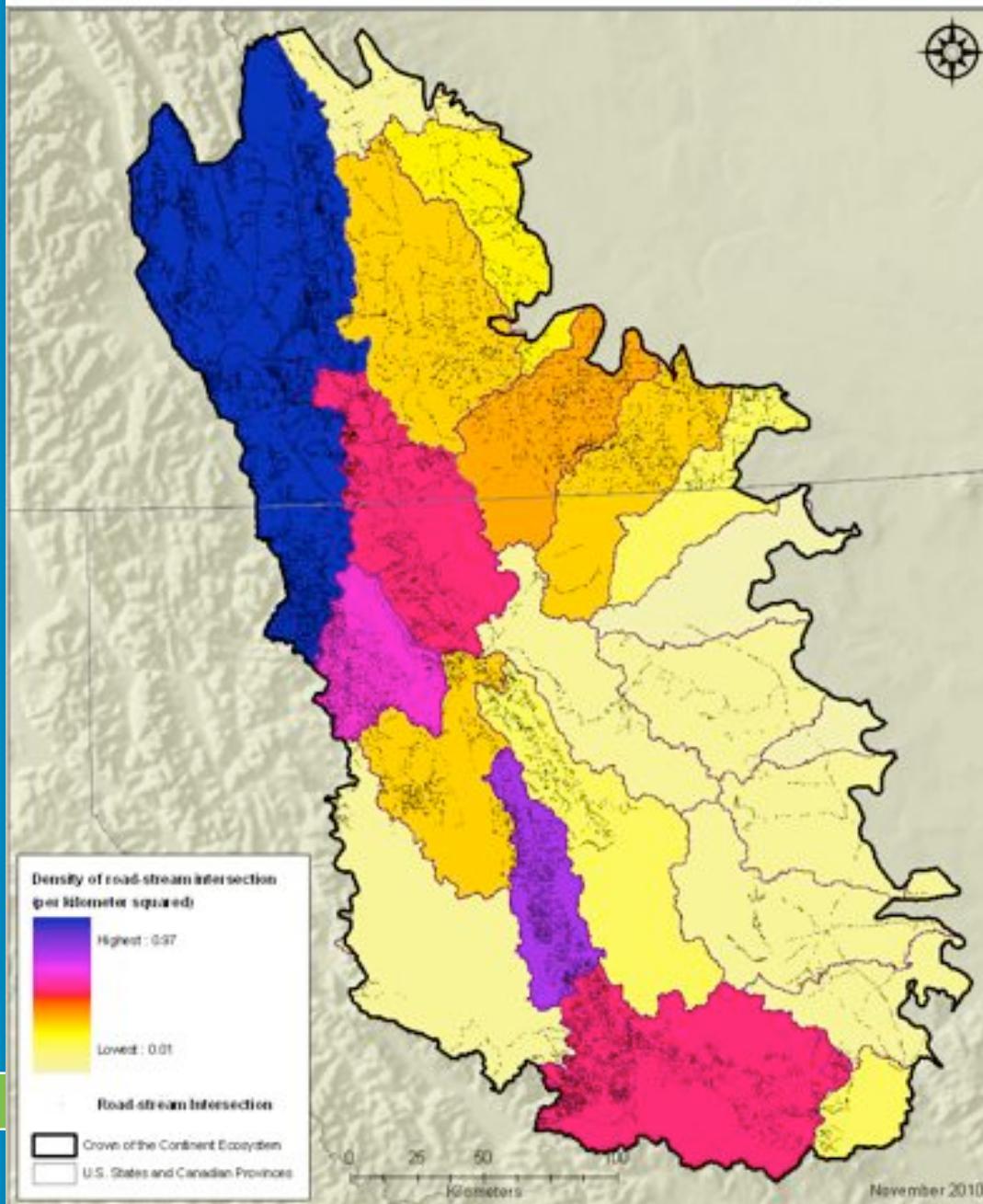
- *Roads*
- *Census*
- *Streams*
- *Watersheds*
- *Riparian Buffer Zone*
- *Density of Road and Stream Intersections*
- *Land Cover*
- *Phenology (month of first greenness)*
- *Fire*
- *Insects*



CCE BASELINE DATASETS

Number of dwellings per dissemination block of the Crown of the Continent Ecosystem



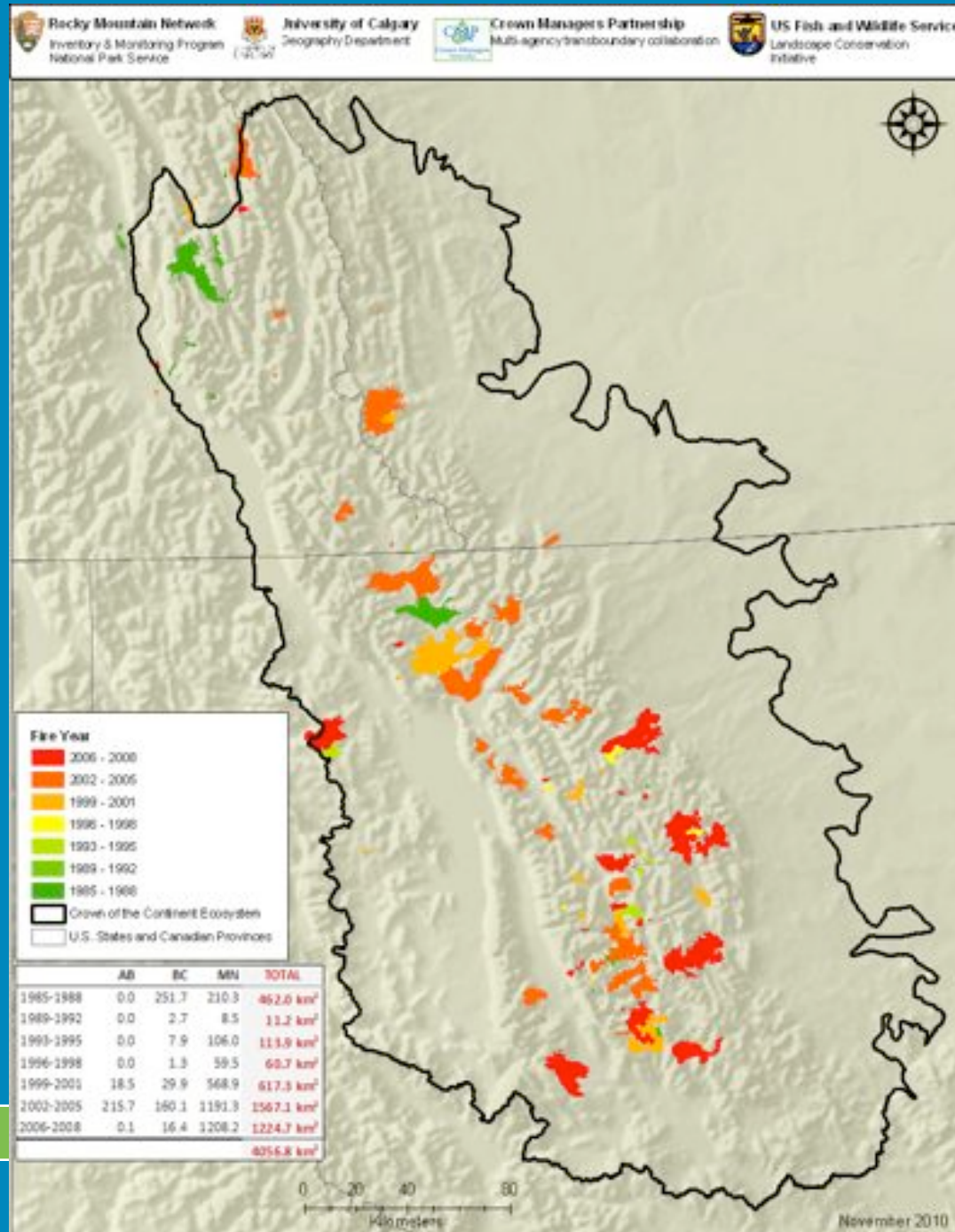


CCE BASELINE DATASETS

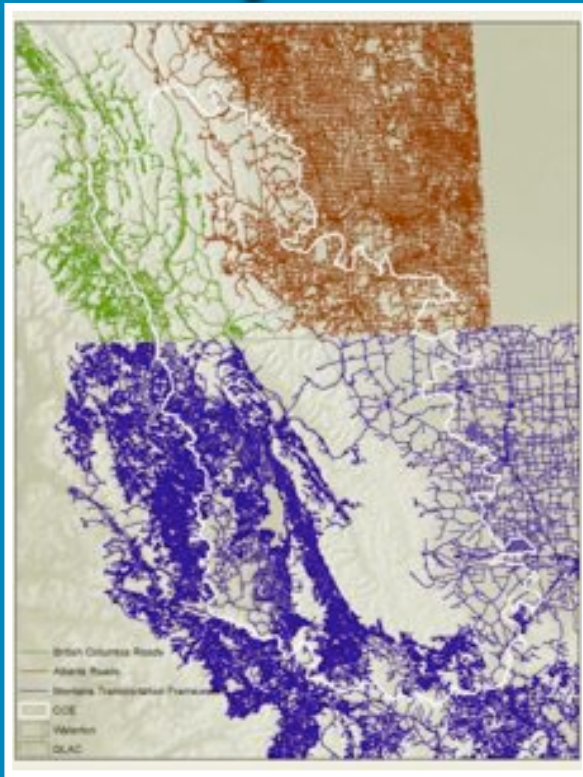
Density of road and stream intersection per km² within the Crown of the Continent Ecosystem

CCE BASELINE DATASETS

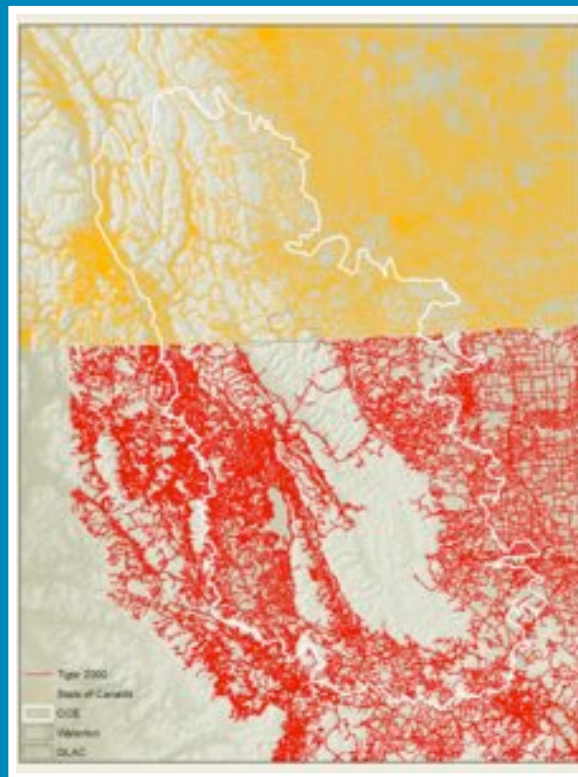
*Fire
perimeters
within the
Crown of the
Continent
Ecosystem*



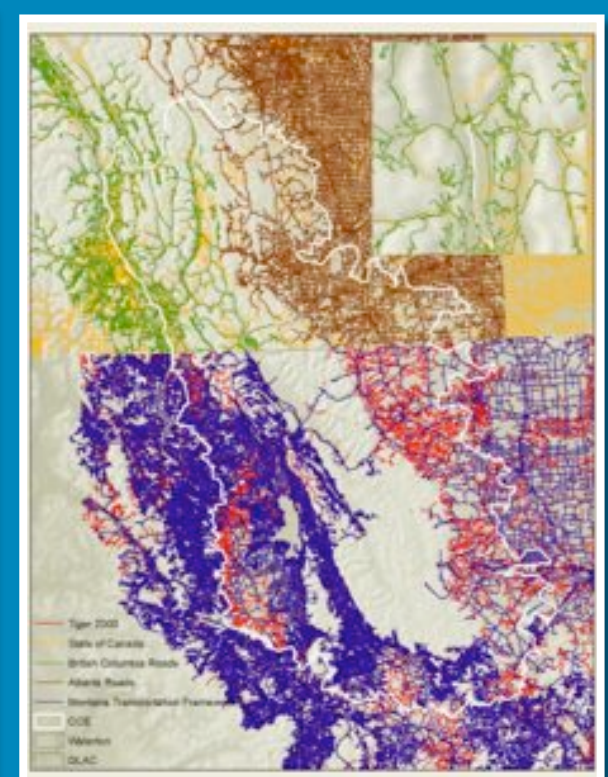
Roads example: it might look simple...



State and
Provinces Roads



Statistics and
Census Roads



Comparison
Gaps

Landscape Analysis: 2011 - 2013

1) Quantitative Accuracy Assessment for baseline maps

→ Trend Monitoring

2) Habitat Connectivity Analysis

- Connectivity maps for grizzly bear, lynx, westslope cutthroat and bull trout

3) Sensitivity Analysis

- Address effects of uncertainty in basemaps as magnified through analysis

4) Outreach and education

- Workshops, 2013 Forum, Website, Data-sharing

Funding Proposals:

- Council on Environmental Cooperation
- Great Northern Landscape Conservation Cooperative



Looking Forward: 2011 - 2015

Planned Result or Outcome	Key Tasks or Actions
1. Landscape Dynamics <ul style="list-style-type: none"> a. Release synthesized and integrated database to partners (NAS) b. Habitat connectivity maps for grizzly bears (Publication) c. Sensitivity Analysis for impacts of uncertainty and error 2. Evaluate effectiveness of Landscape metrics in measuring Ecological Indicators 3. Ecological health indicators website – interactive maps of habitat and habitat connectivity	1. Landscape Dynamics <ul style="list-style-type: none"> a. Data Integration (archive database, synthesize data, quantitative accuracy assessment for data) b. Habitat Connectivity Analysis (convene biologists for confirmation of methodology and data-sharing for connectivity) c. Sensitivity Analysis (evaluate influence of basemap errors and uncertainty) 2. Evaluate effectiveness of Landscape metrics (identify/recruit graduate students for lit review, convene workshop, ground-truth metrics) 3. Outreach and Education (convene workshop with managers to test results, interactive website, 2013 Annual Forum)


Looking Forward: 2011 - 2015

Planned Result or Outcome	Key Tasks or Actions
<p>4. Biodiversity</p> <ul style="list-style-type: none"> a. Data collection and data integration across boundaries for habitat and specific species b. Habitat connectivity maps for grizzly bears, Canada lynx, bull and westslope cutthroat trout <p>5. Water Quality and Quantity</p> <ul style="list-style-type: none"> a. Data collection and data integration across boundaries b. Link with Landscape mapping; eg, road and stream intersections, human footprint and watersheds <p>6. Exotics</p> <ul style="list-style-type: none"> a. Education b. Invasive Plant Guide for CCE c. Aquatic Invasive Species 	<p>4. Biodiversity</p> <ul style="list-style-type: none"> a. Data Integration b. Habitat Connectivity Analysis (workshops with species biologists) c. Large Carnivore Trend Monitoring <p>5. Water Quality and Quantity Metrics</p> <p>6. Exotics</p> <ul style="list-style-type: none"> a. Convene workshop with CCE Invasive plant group and determine next steps b. Pick top three priority actions from Forum (Education, Boat Inspection, Coordination across boundaries)



Crown Managers
Partnership

Looking Forward: 2011 - 2015

Planned Result or Outcome	Key Tasks or Actions
<p>7. Climate</p> <ul style="list-style-type: none"> a. Consider impacts of management to water yield, water storage and timing of availability b. Plan for higher frequency of extreme climate events and for higher intensity events (droughts, floods, etc.) c. Increase natural buffering capacity d. Adjust fire management in consideration of longer fire season e. Maintain habitat connectivity to address climate change threats to biodiversity 	<p>7. Climate</p> <p>a. Continue work on other Indicators:</p> <ul style="list-style-type: none"> • Landscape Baseline Mapping and Trend Monitoring • Habitat Connectivity Analysis (focal species in CCE) • Large Carnivore Trend Monitoring • Aquatic Invasive Species – Prevention and Response Plans • Education
	



Questions?

The End