

IUCN Red List  
assessment of  
all brown bear  
populations  
globally

Extant

Isolated

Extinct



Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
© 2016 Google  
US Dept of State, Geographer  
Image Landsat





IUCN Red List  
assessment of  
all brown bear  
populations  
globally

~30,000

~7000

~5000

~15,000

~700

~1500-  
2000

Extinct



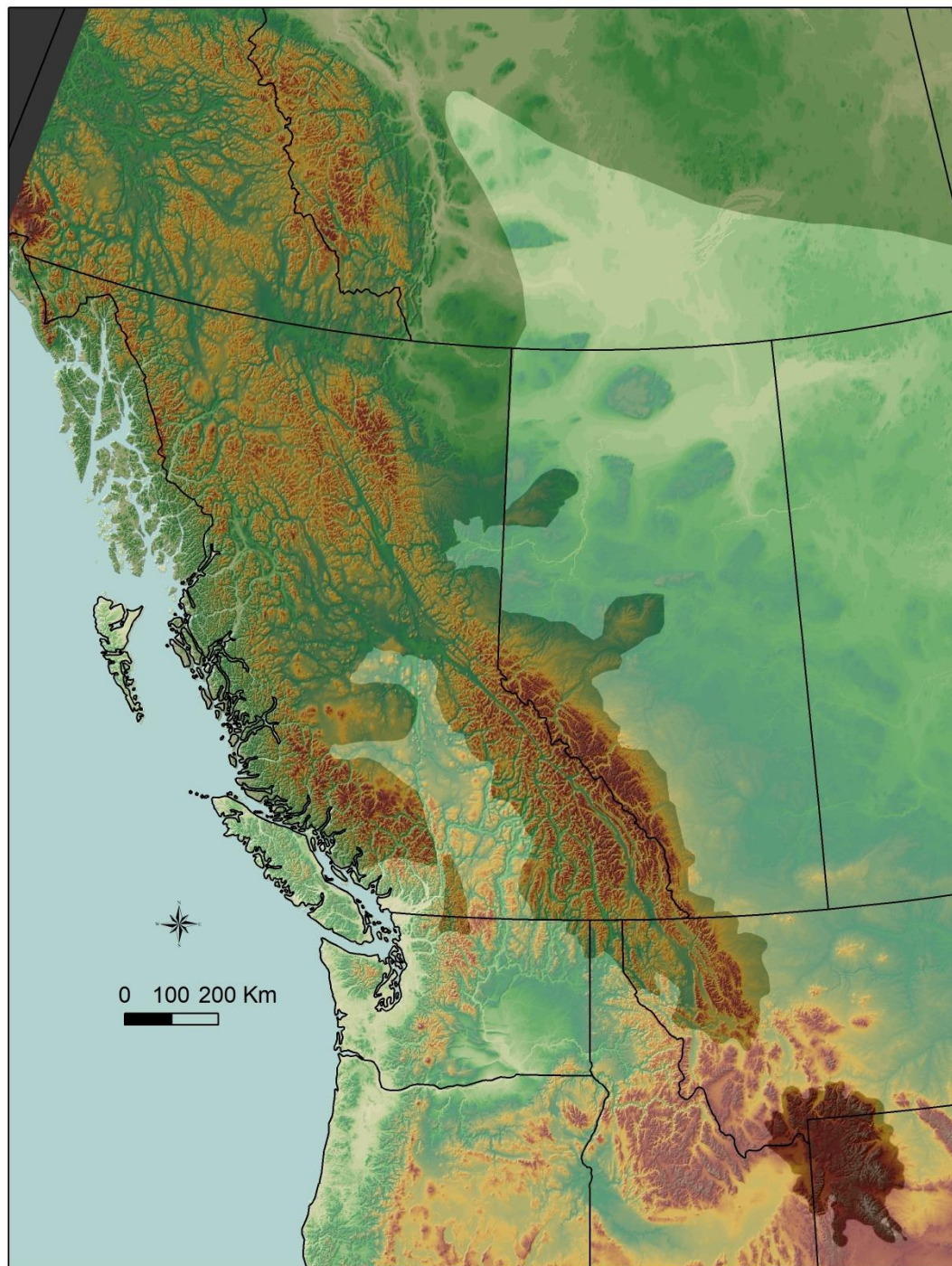
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
© 2016 Google  
US Dept of State, Geographer  
Image Landsat



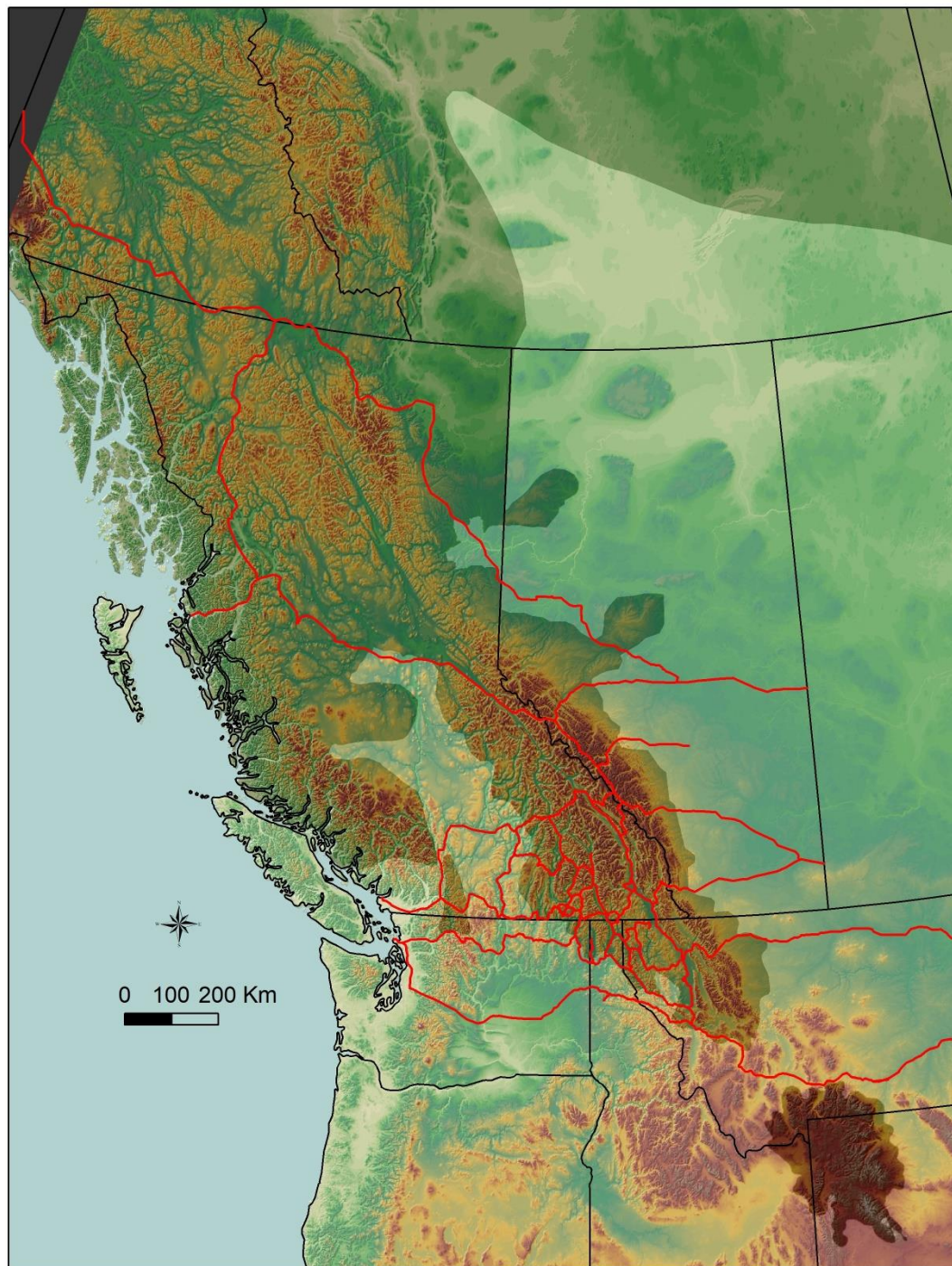
Google earth

Imagery Date: 12/13/2015 46°01'33.41" N 112°42'04.63" W elev 1699 m eye alt 5369.02 km

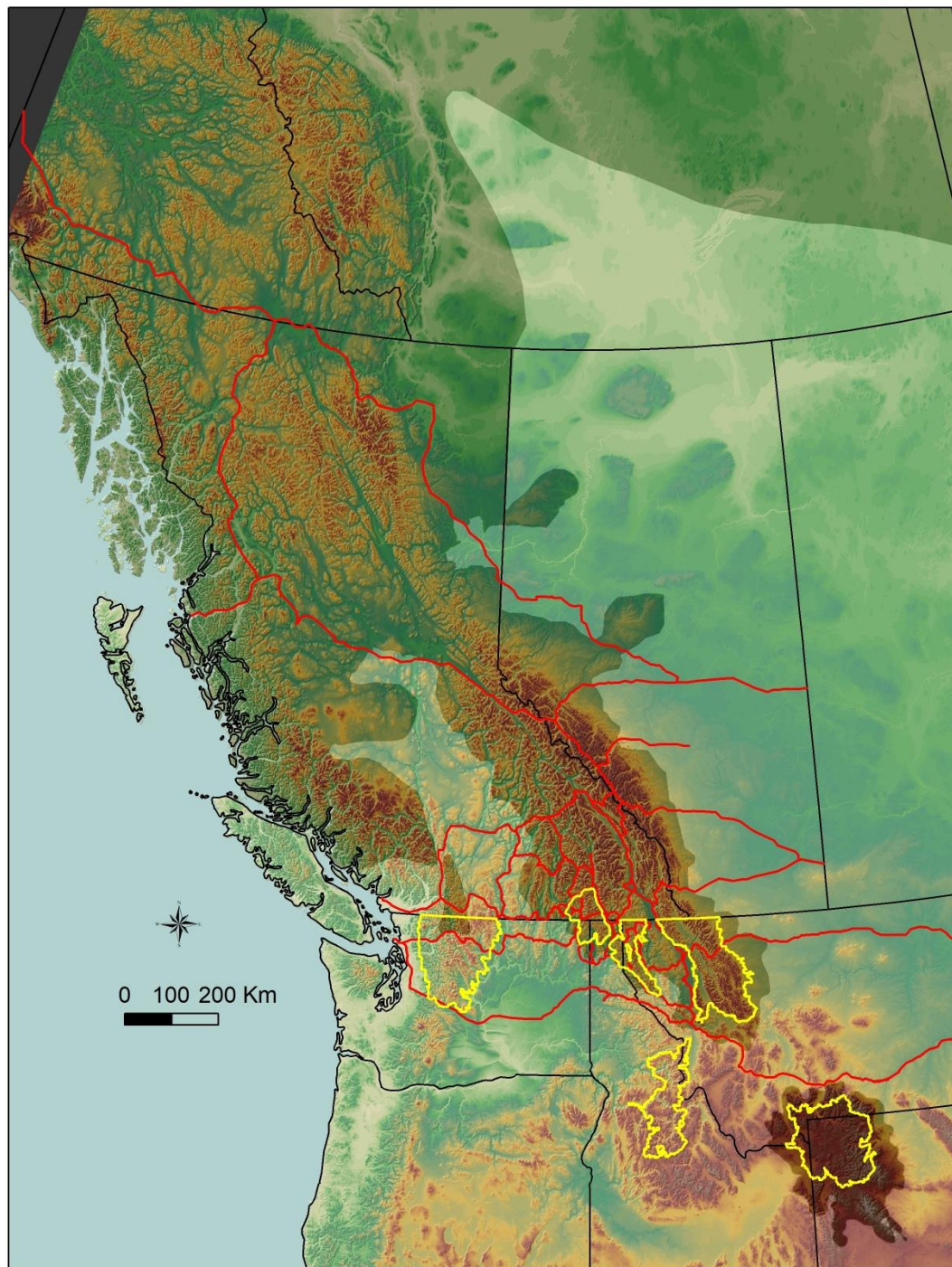




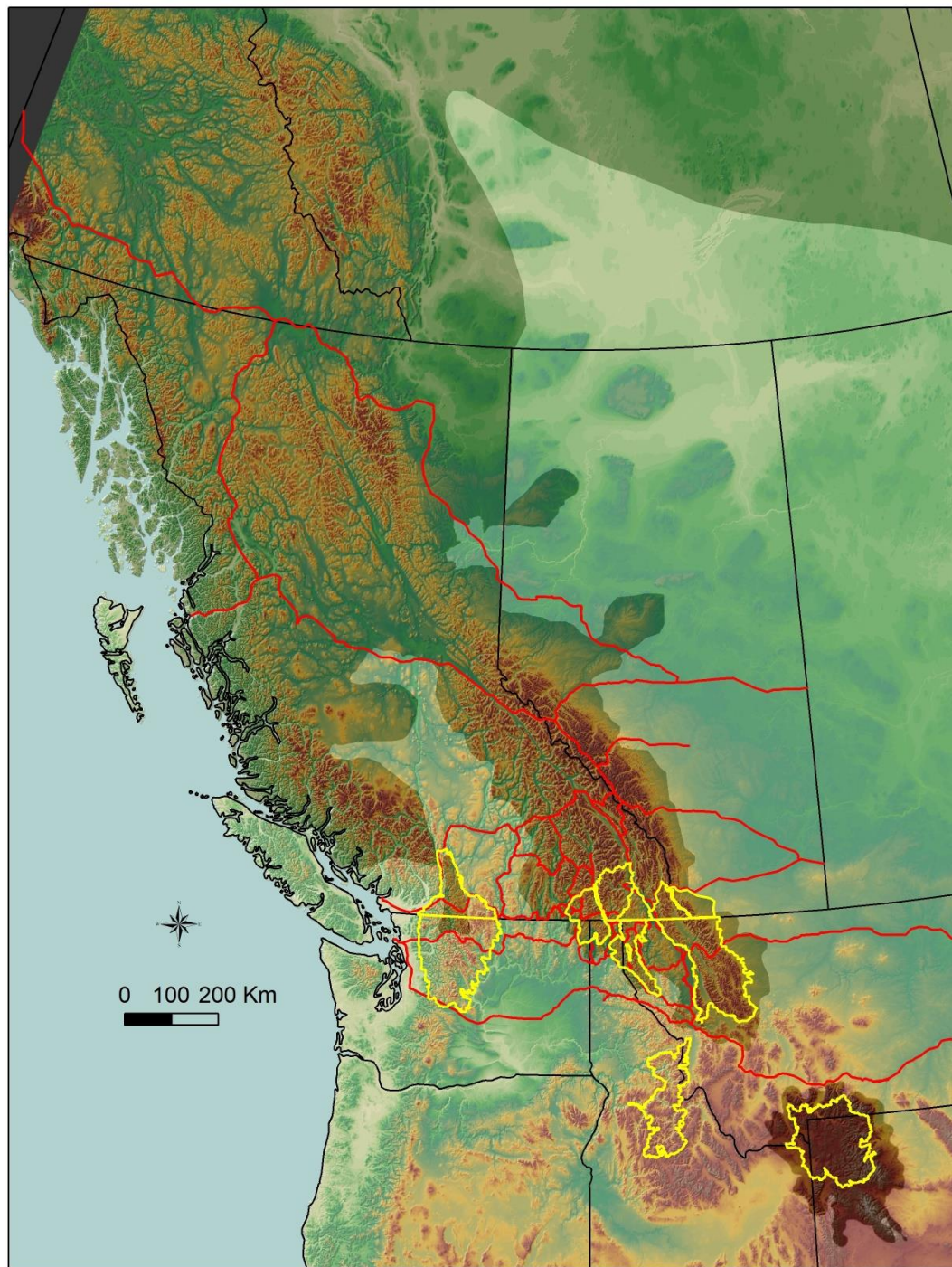




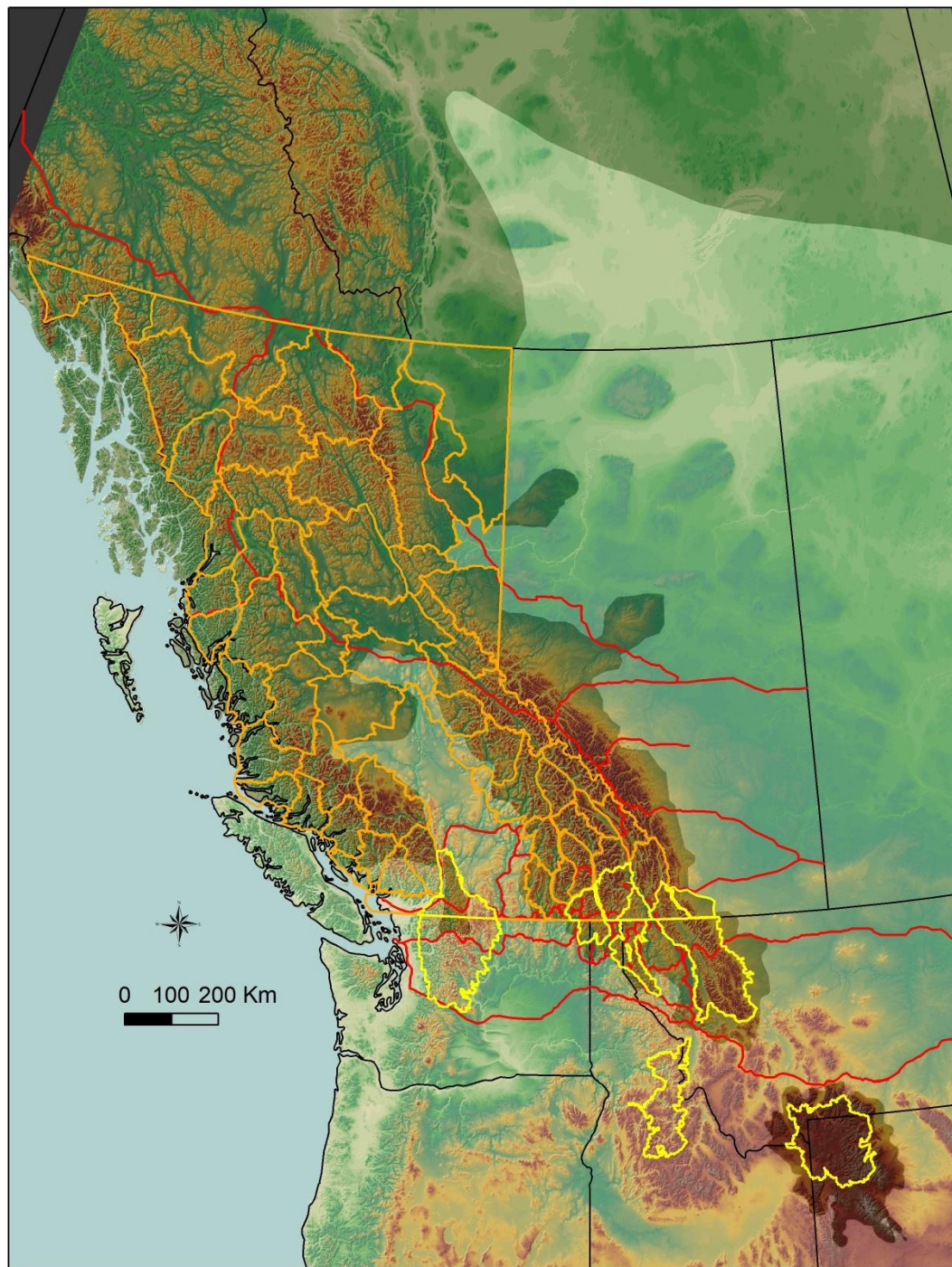








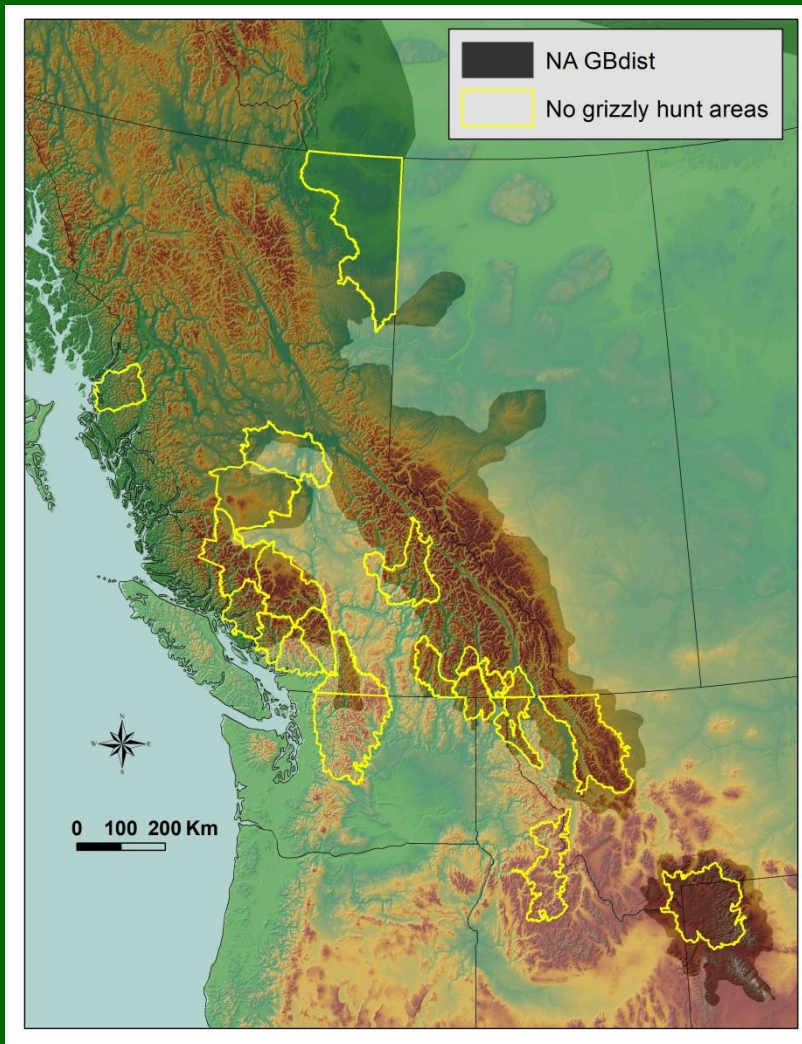




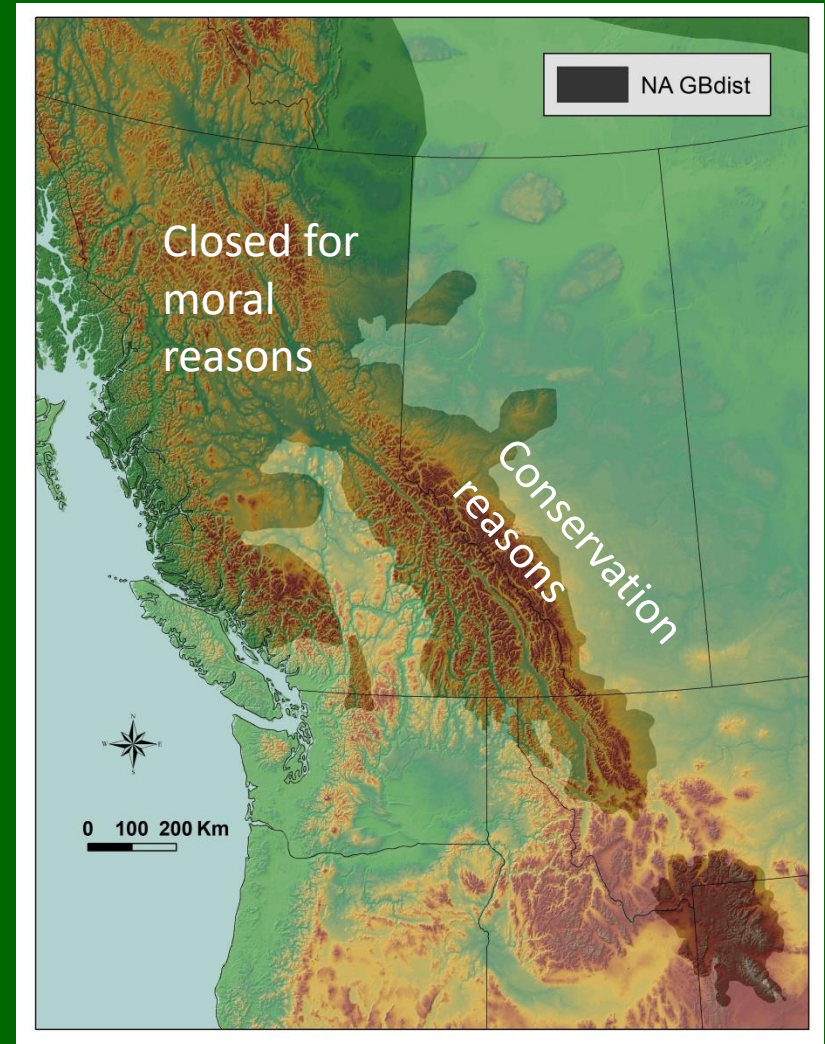


# Grizzly bear hunting

Recent no grizzly bear hunting areas  
(prior to 2016)



No grizzly bear hunting in BC, AB, US  
(2017- present)





# Conservation status

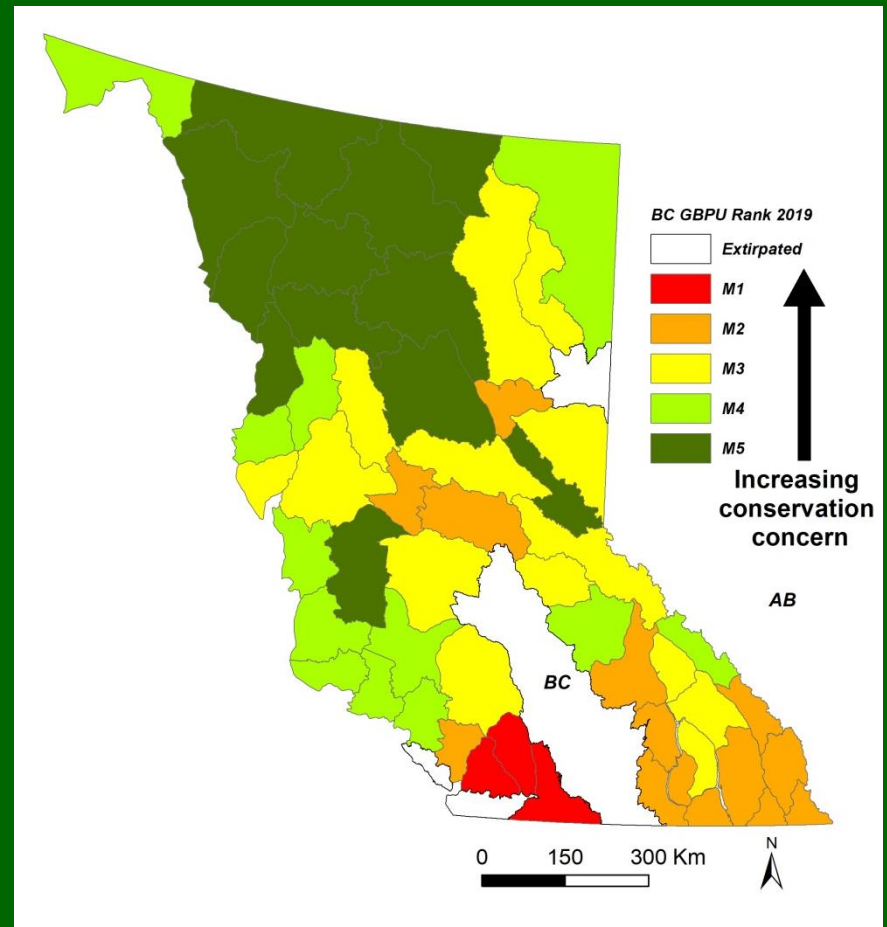
Old conservation status system



New Conservation ranking system

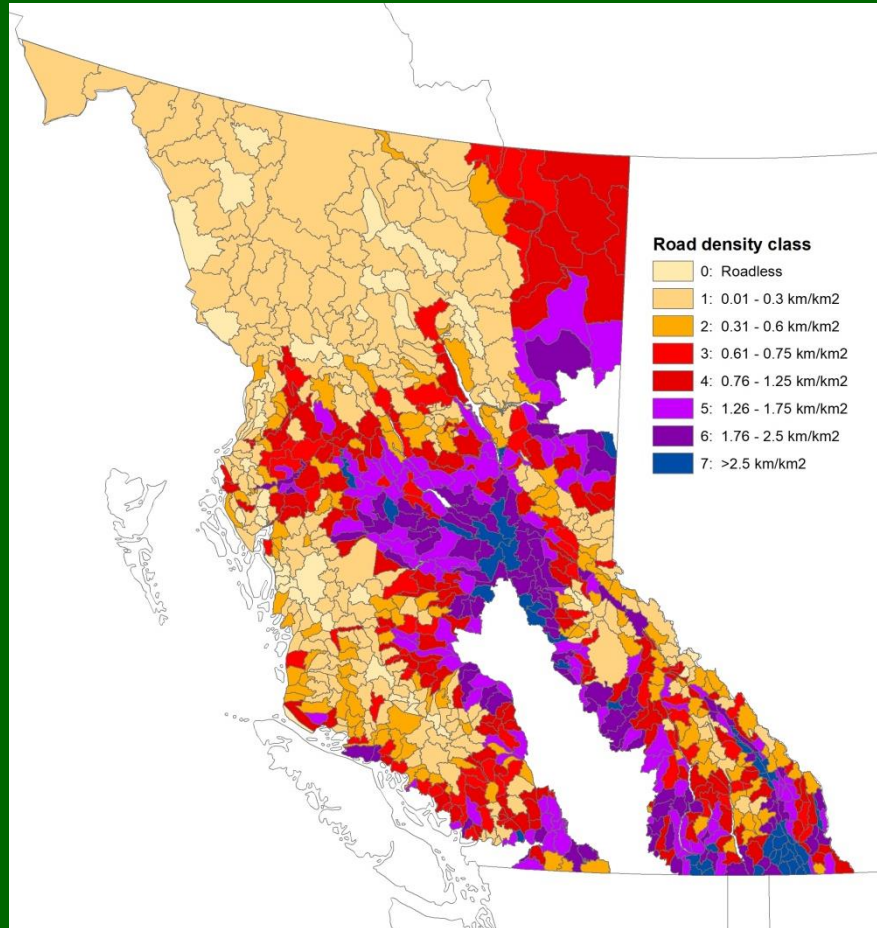
**Nature Serve / IUCN**

Data-based, measurable, & transparent



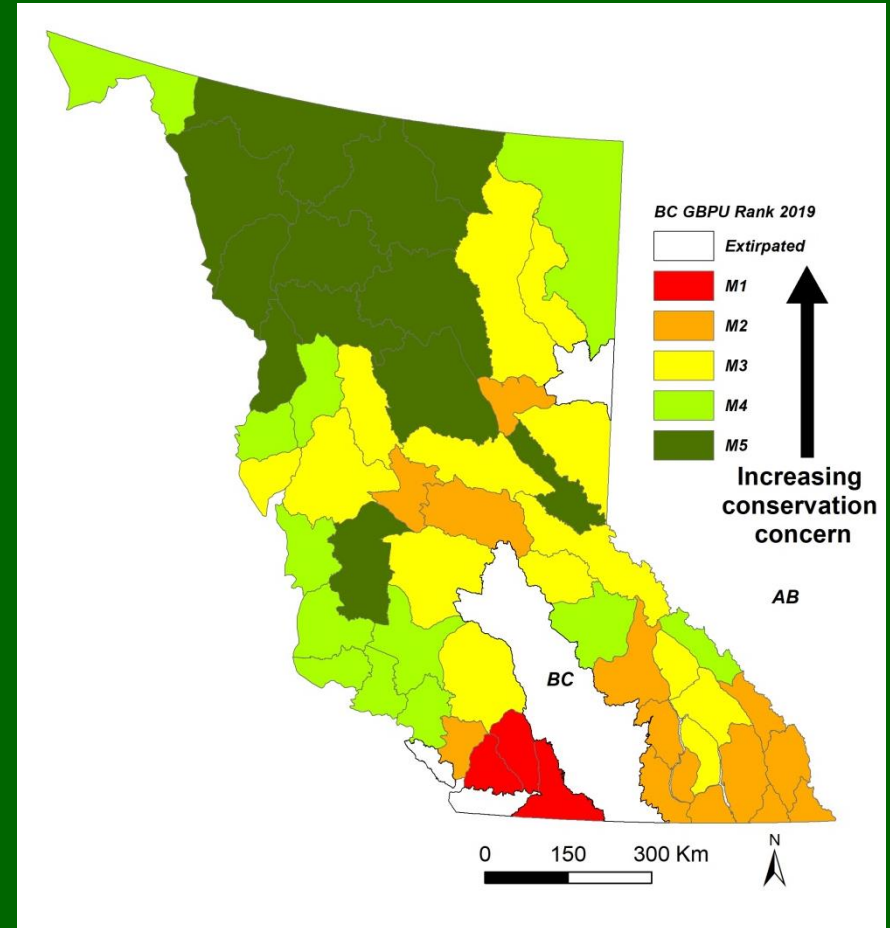


## Road density



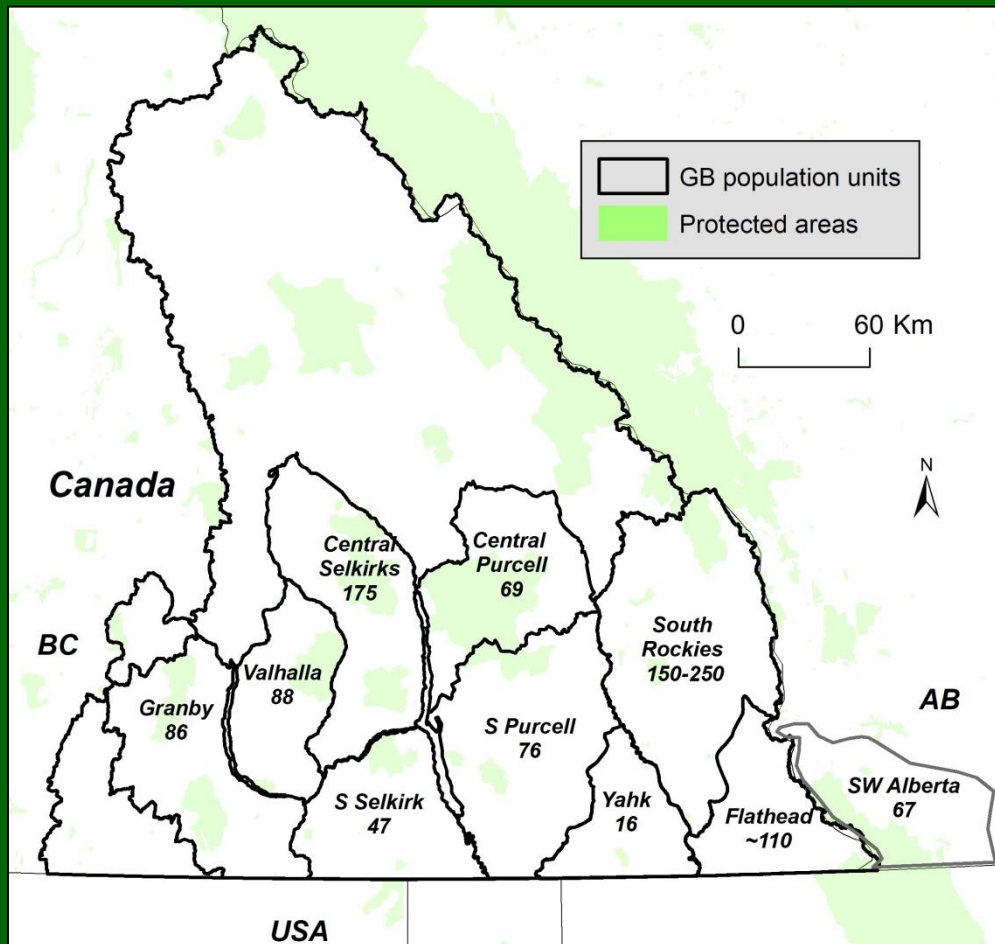
## New Conservation ranking system

### Nature Serve

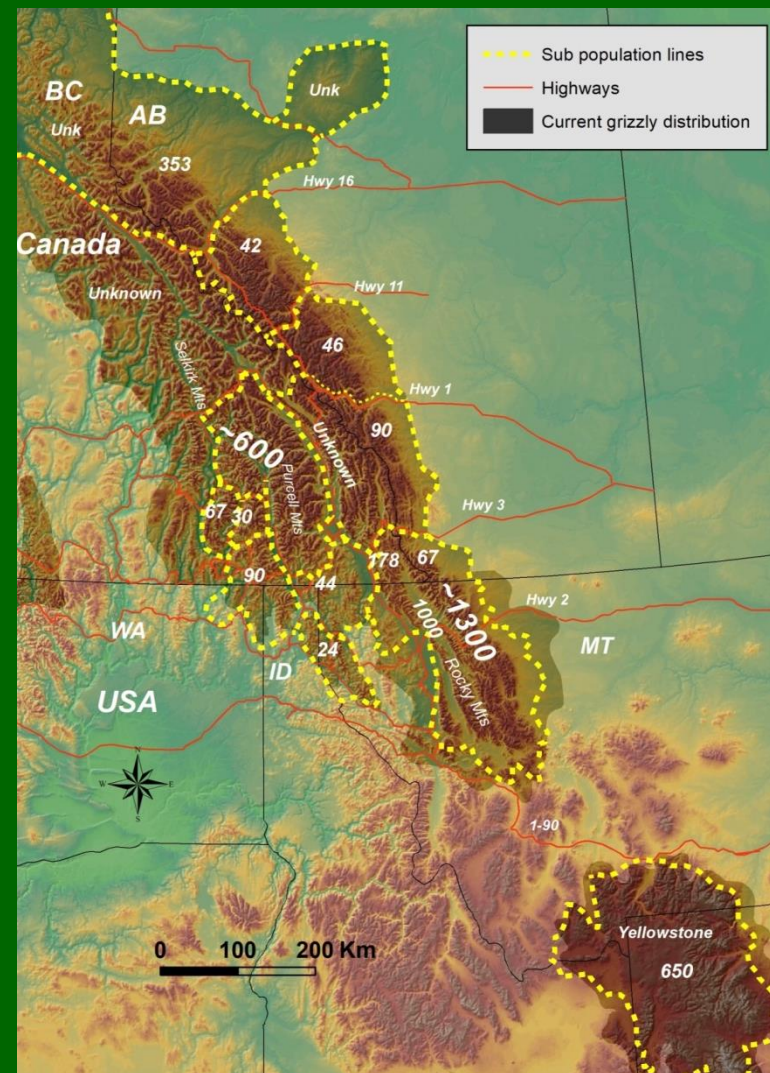




## Abundance across population units



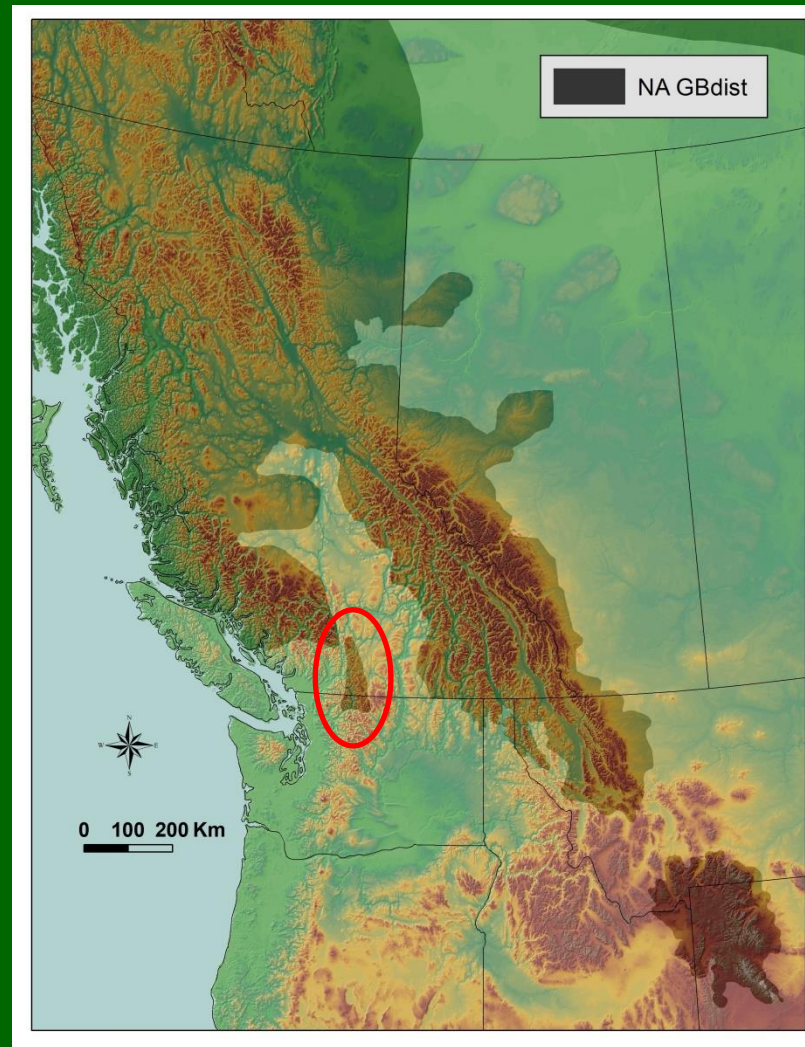
## Remember fragmentation





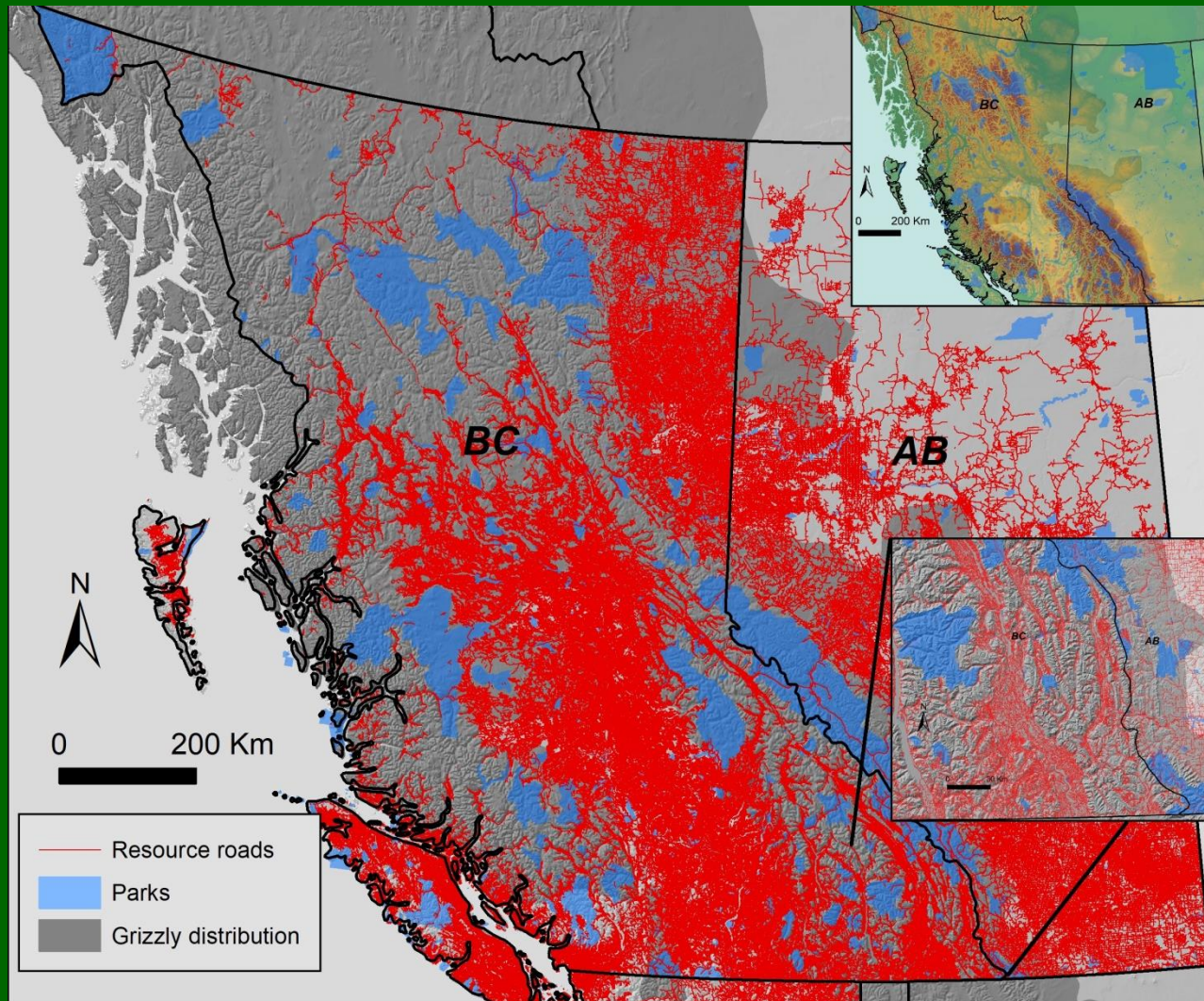
# Canadian North Cascade augmentation

All set to go – last minute  
rejection



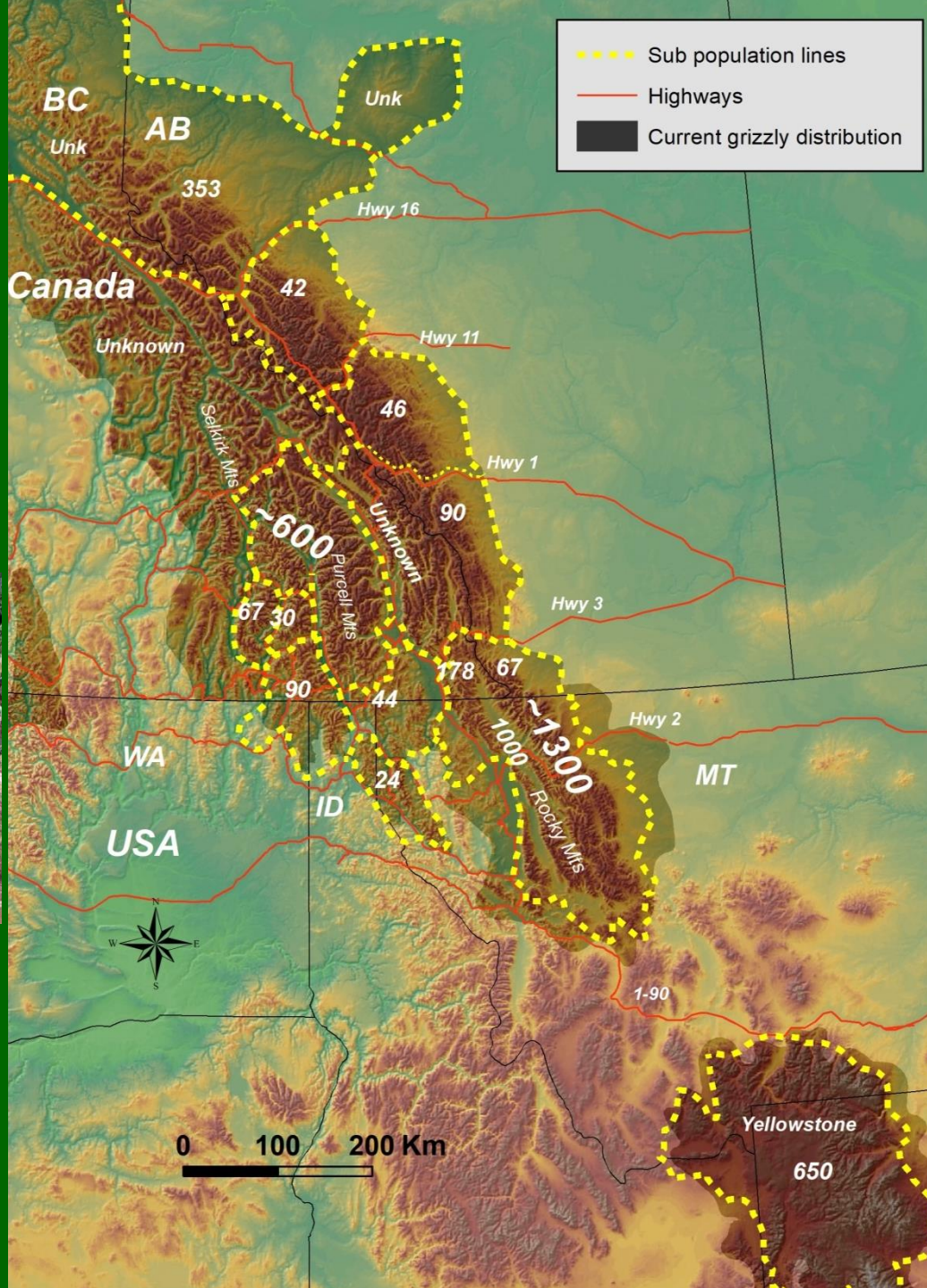


# Road network in BC & AB





# Fragmentation



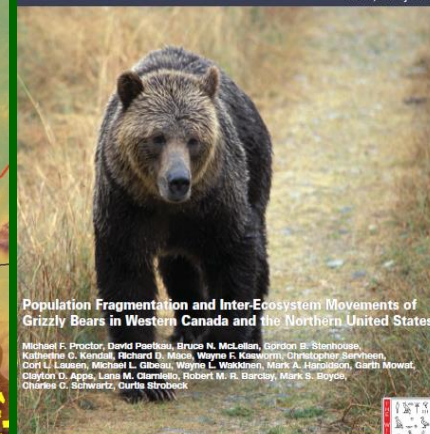
**3100 Genetic  
sampled bears**

**800 telemetry  
bears**

**Proctor et al 2012**

## WILDLIFE MONOGRAPHS

Vol. 180, January 2012



Population Fragmentation and Inter-Ecosystem Movements of Grizzly Bears in Western Canada and the Northern United States

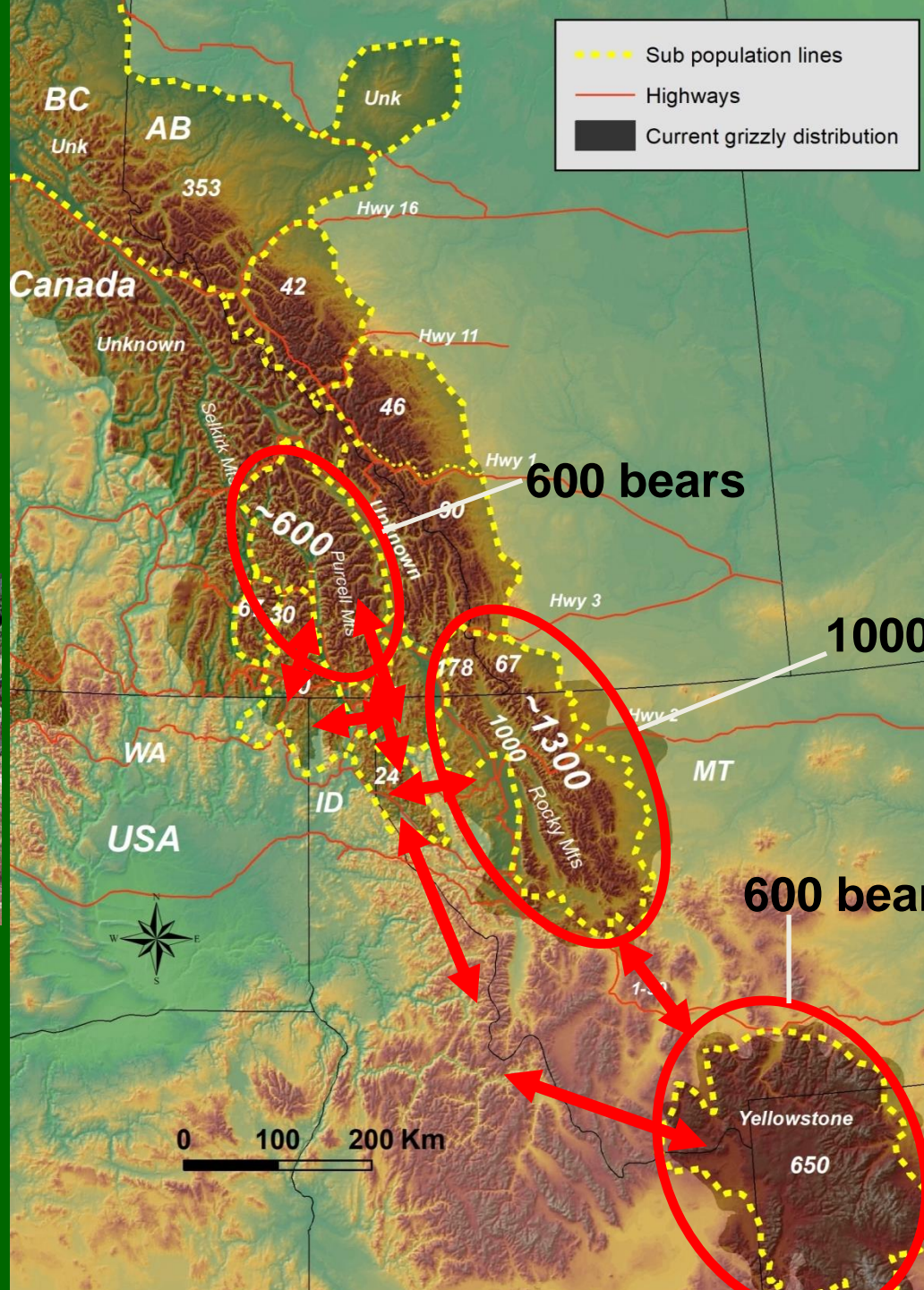
Michael F. Proctor, David Postiau, Bruce R. Macdonald, Gordon B. Stenhouse, Katherine C. Kendall, Richard D. Meko, Wayne F. Kneib, Christopher Searns, Cori L. Lausen, Michael L. Gibeau, Wayne L. Waddnen, Mark A. Harpold, Garth Mowat, Steven D. Allen, Loris M. Christie, Robert M. R. Barclay, Mark S. Boyce, Charles G. Schwartz, Curtis Strobeck

Supplement to The Journal of Wildlife Management





# Fragmentation



*Proctor et al 2012*

## WILDLIFE MONOGRAPHS

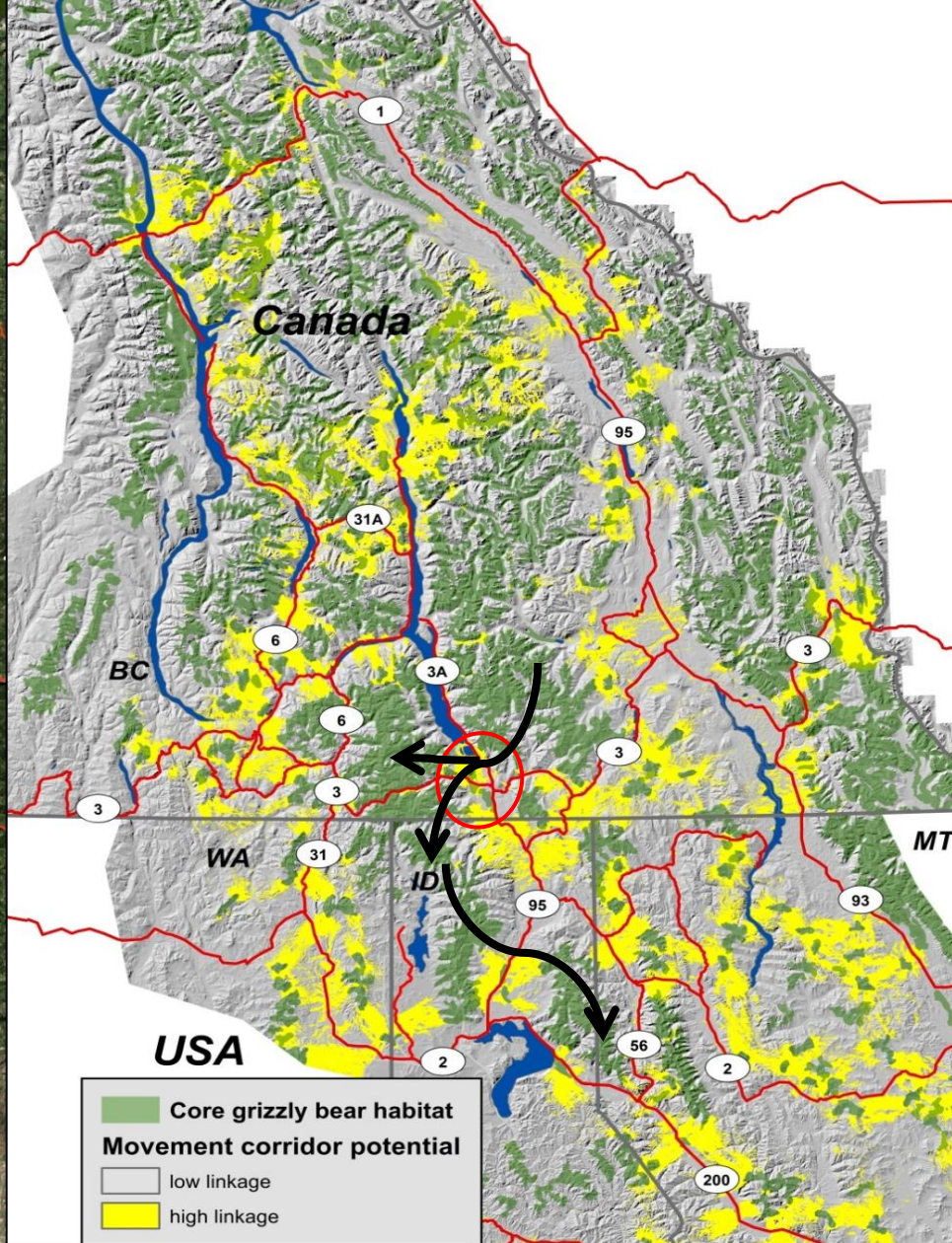
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# Connectivity

## GPS collared bears

## Ecological modelling

## Corridor prediction

*Proctor et al 2015*

### Grizzly bear connectivity mapping in the Canada-US trans-border region

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 SCOTT E. NIELSEN<sup>2</sup>, Department of Renewable Resources, University of Alberta, Edmonton, T6G 2G9 Alberta  
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 A. GRANT MACHUTCHON<sup>6</sup>, 217 Mill St. Nelson, British Columbia, V1L 4S8, Canada  
 MARK S. BOYCE<sup>7</sup>, Department of Biological Sciences, University of Alberta, Edmonton, Alberta, T6G 2G9, Canada



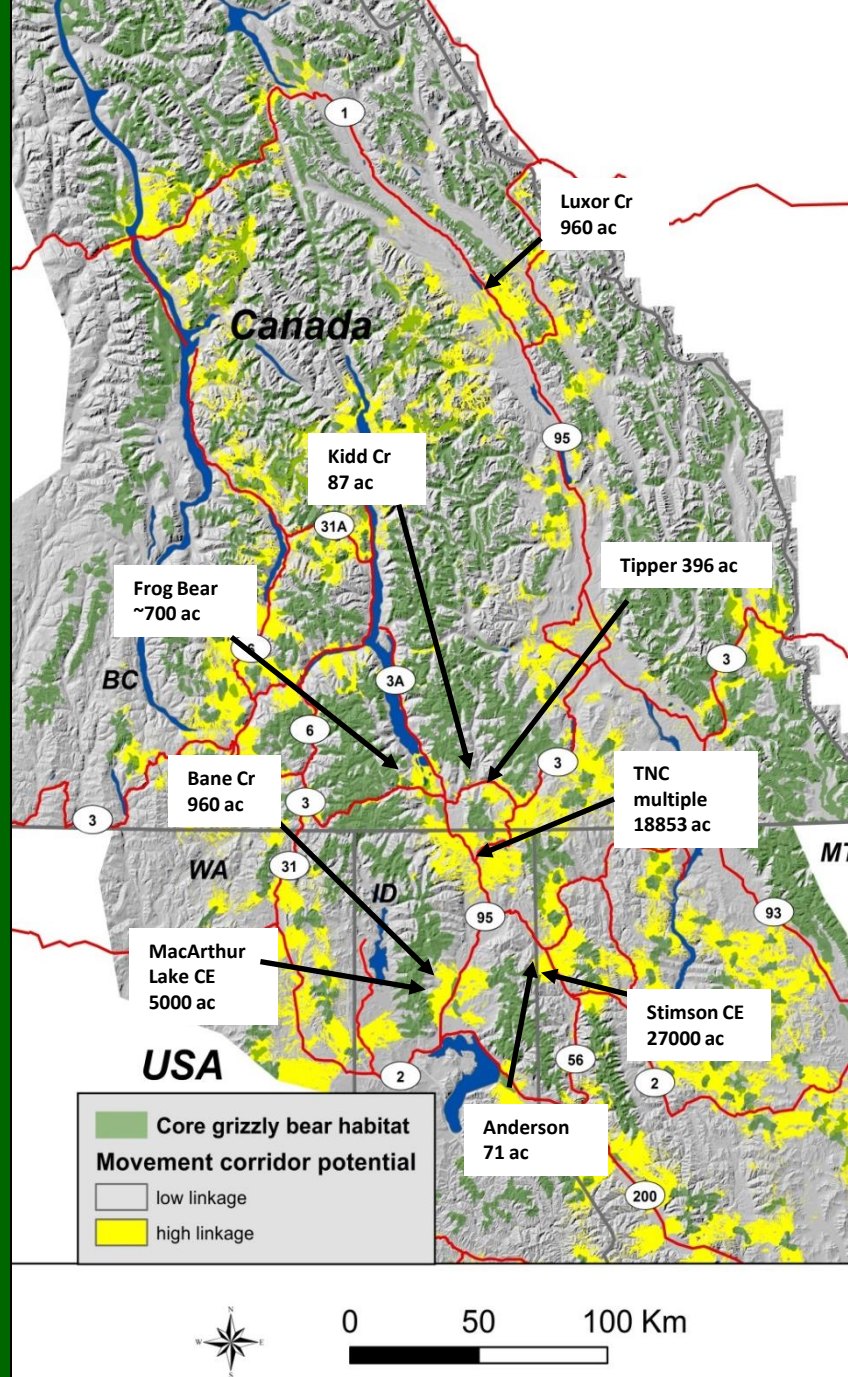
[David.proctor@bioscience.ca](mailto:David.proctor@bioscience.ca)



**Direct  
purchased or  
conservation  
easements**

**21,000  
hectares,  
210 km<sup>2</sup>  
37 properties  
protected for  
CONNECTIVITY**

**~\$50,000,000**



**Nature  
Conservancy  
Canada**

**Yellowstone to  
Yukon**

**Vital Ground**

**The Nature  
Conservancy  
(US)**

**Nature Trust of  
BC**

**Forest Legacy  
(US)**



# Non lethal management



## Grizzly bear non-lethal management 2004 – 2019

|              | Managed | alive | % success |
|--------------|---------|-------|-----------|
| Females      | 18      | 15    | 83        |
| Males        | 17      | 11    | 65        |
| total adults | 35      | 26    | 74        |



**With the BC Conservation Office Service & Montana  
FWP**



# Electric fence program



Electric fences (50% cost share program) Creston Valley – Nelson area

|        | # fences | \$    |
|--------|----------|-------|
| Canada | 88       | 73288 |
| USA    | >118     |       |





# Creston Valley Bear Fair

Creston Valley Wildlife Management Area Visitors Center  
Saturday Aug 20th, 11:00—4:00

12:00 and 2:30  
Grizzly Bears in the  
Creston Valley with  
biologist Michael Proctor

12:30 and 3:00  
Bear Safety and Bear  
Spray Training

**ALL DAY EVENTS:**  
Bear Coexistence Movies  
Electric Fencing  
WildSafeBC booth  
Children's Activities  
Lions Concession Booth



**ALL DAY CHILDRENS  
ACTIVITIES**



## Bear safety education



Hosted by the Transborder  
Grizzly Bear Project

[www.transbordergrizzlybearproject.com](http://www.transbordergrizzlybearproject.com)

Email: [grizzlybearsolutions@gmail.com](mailto:grizzlybearsolutions@gmail.com)

Columbia  
Basin **trust**





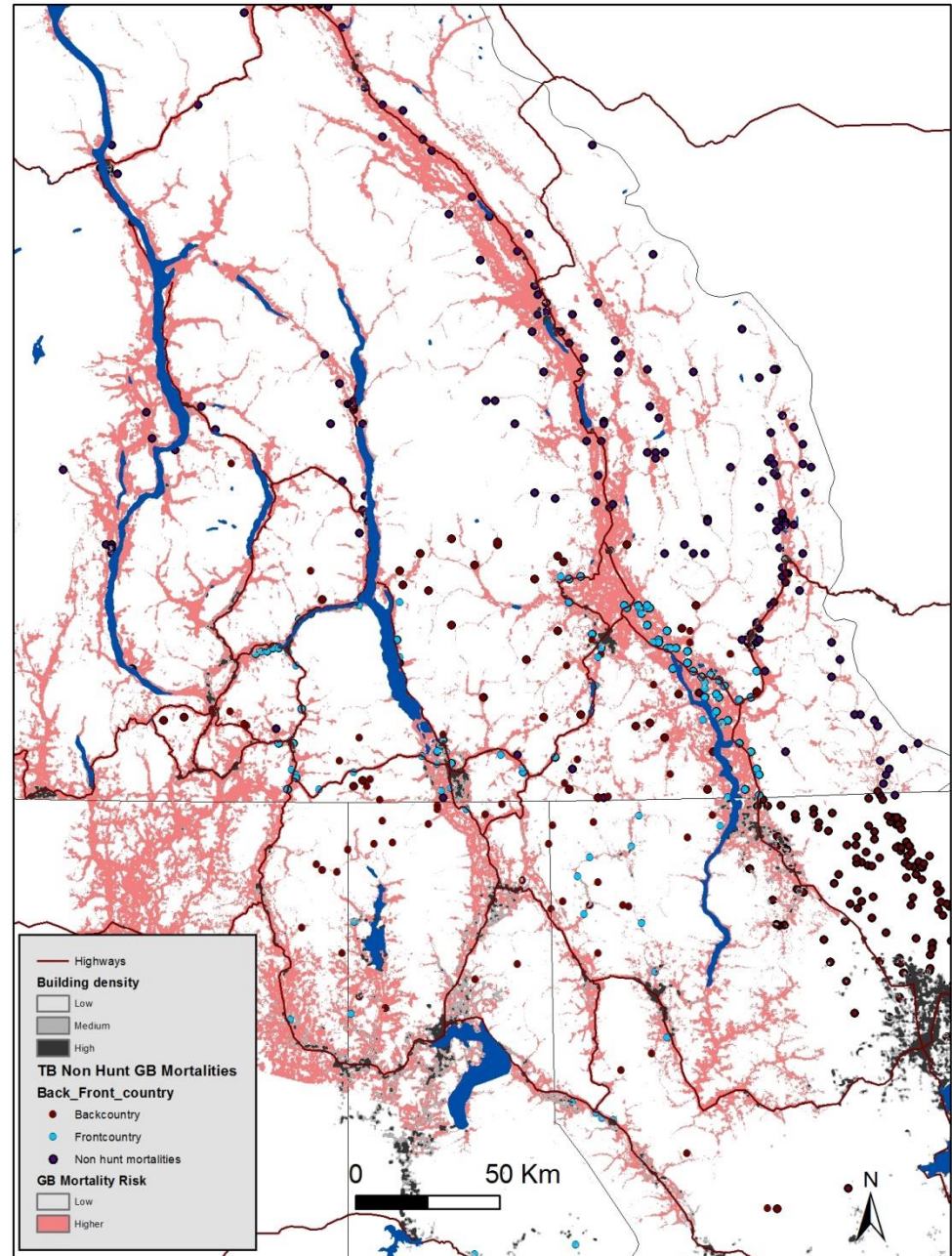
# Non-hunt Mortality risk

## Reported and Unreported

### CAUSES:

Front country  
attractants

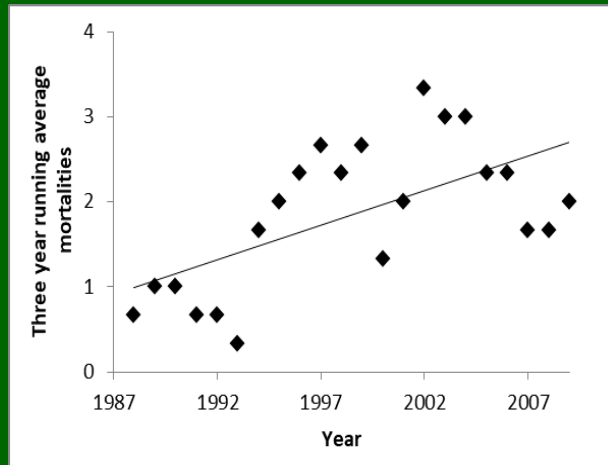
Back country  
poaching, ungulate  
hunter conflicts



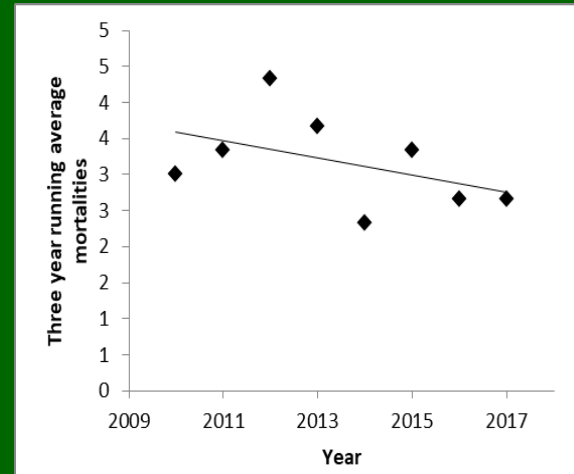


# Grizzly bear human-caused mortality in Canadian South Selkirks

**Pre 2006**

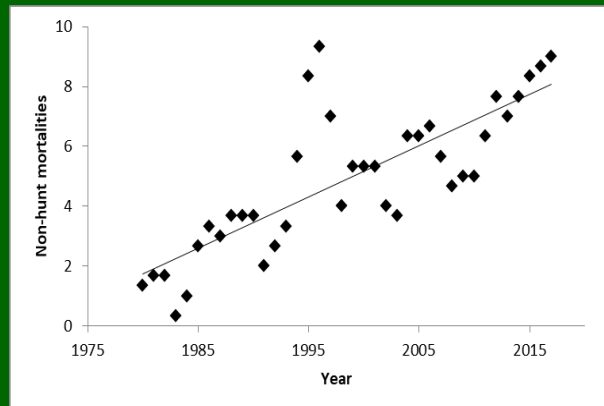


**Post 2006**



**Rockies South population (Fernie, Sparwood, Elkford)**

**Control area**

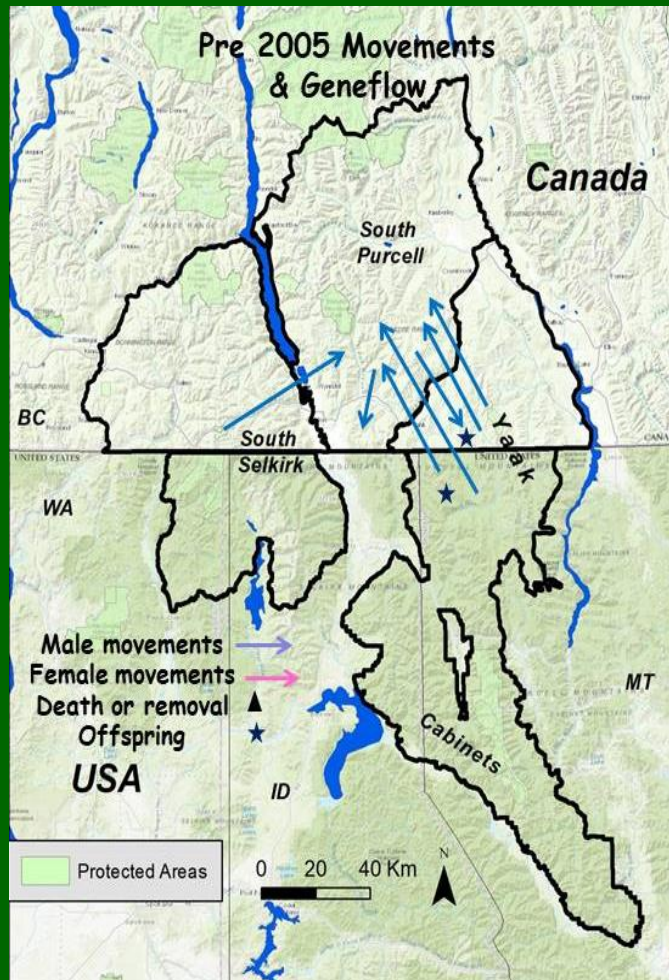


**No enhanced management**

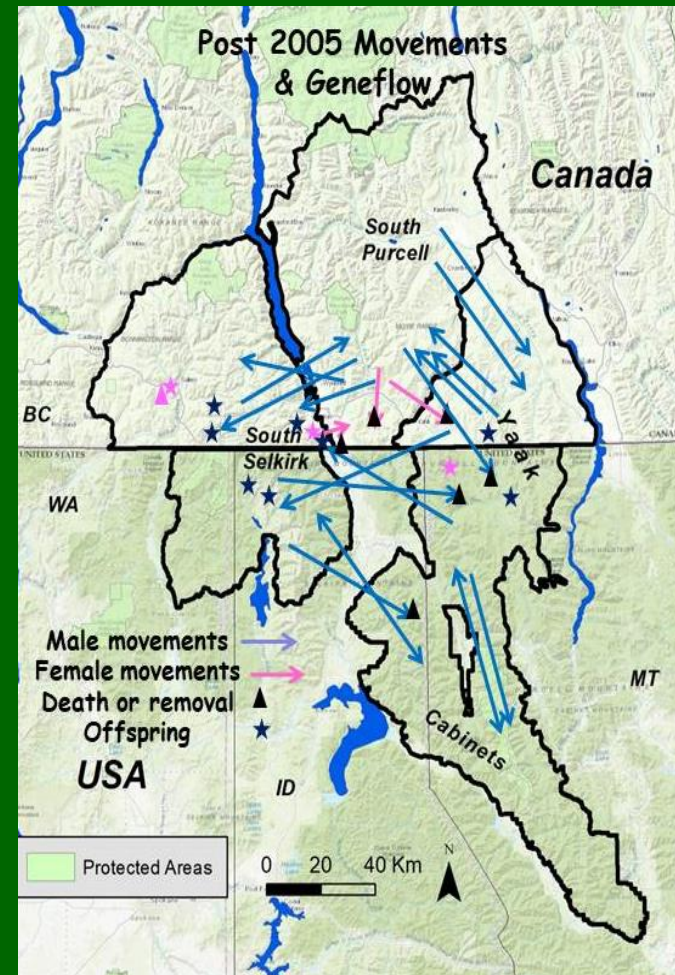


# Cumulative evidence, all sources

Pre 2006

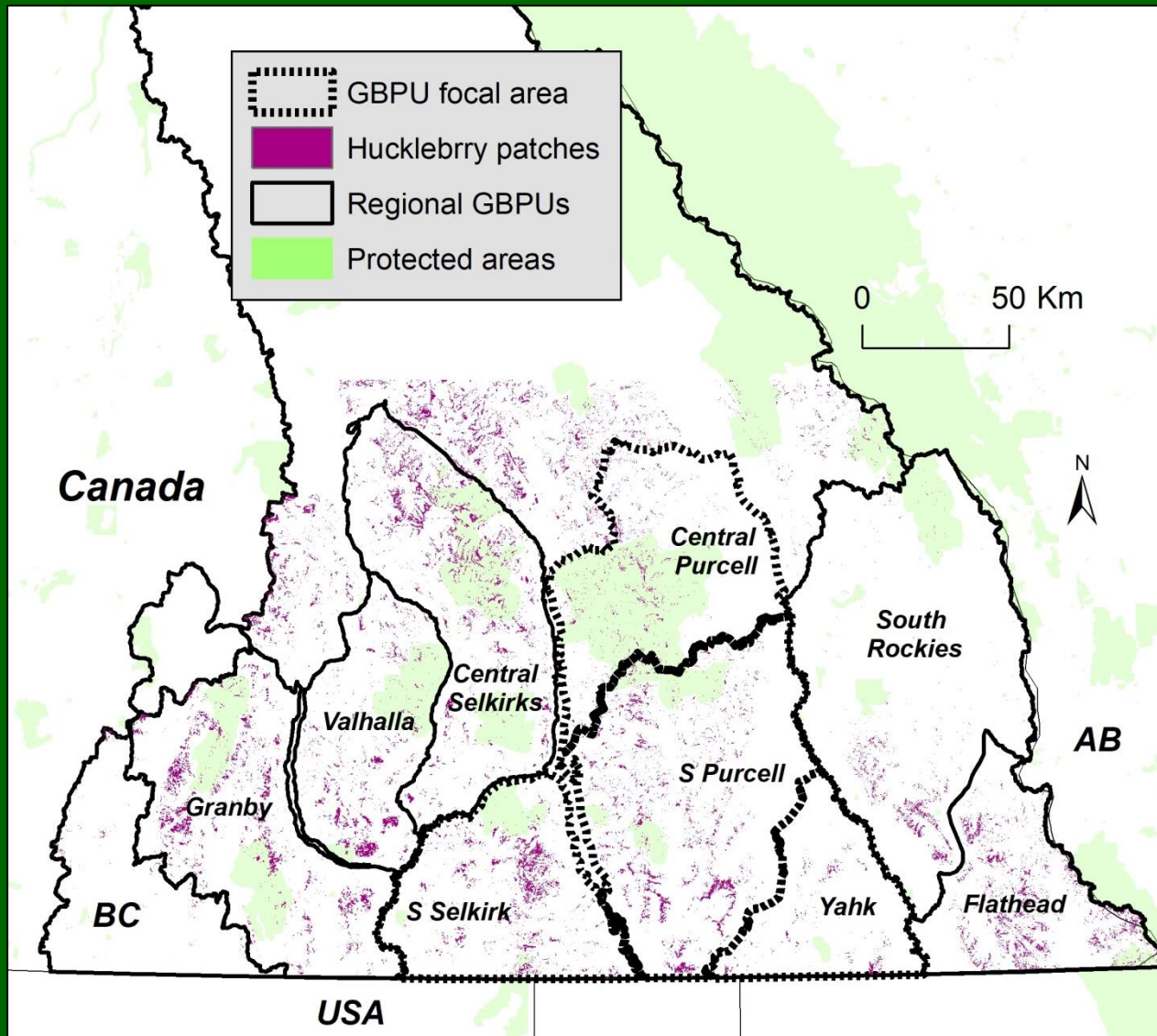


Post 2006



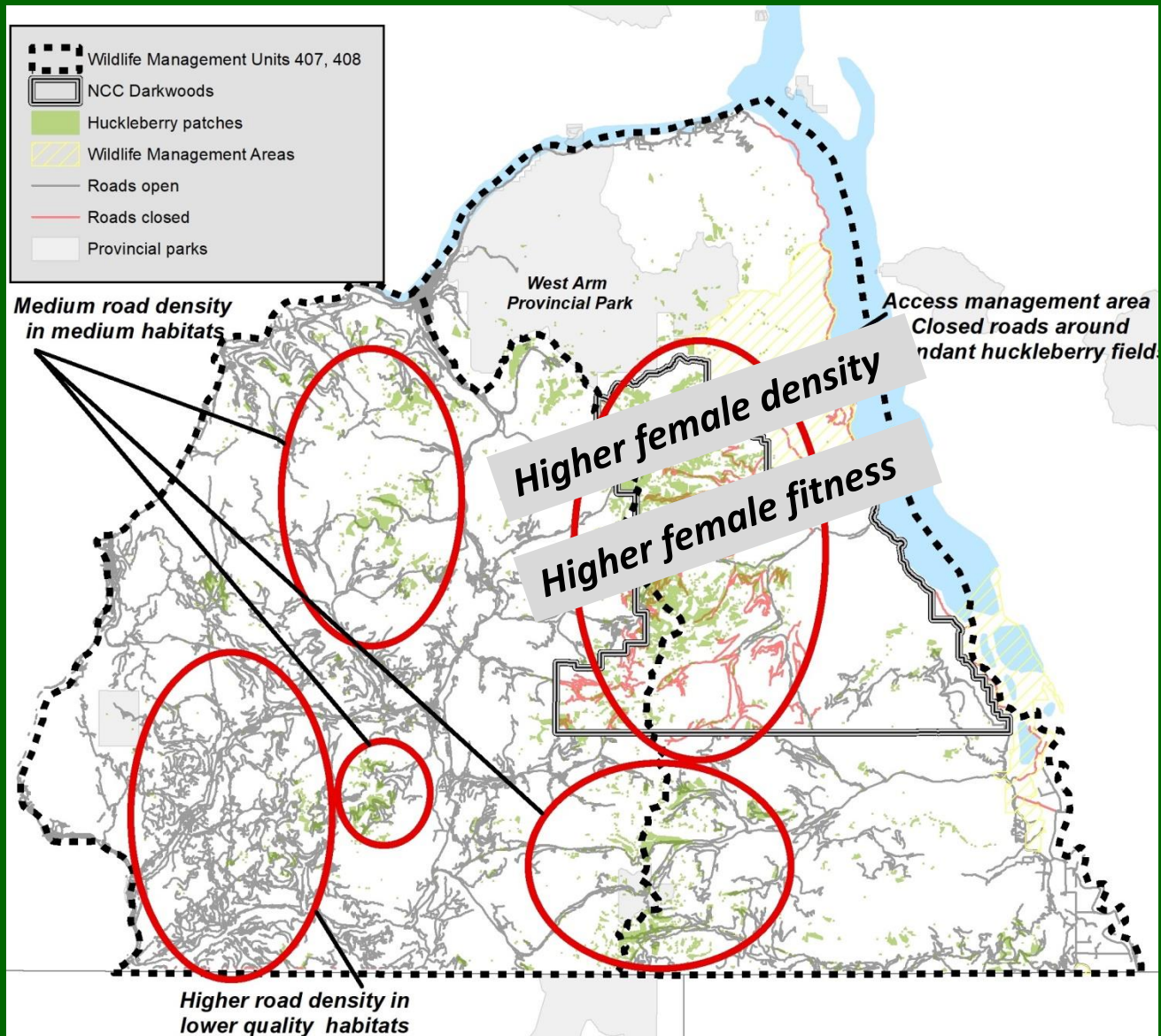


# Huckleberry patches important for grizzly bears



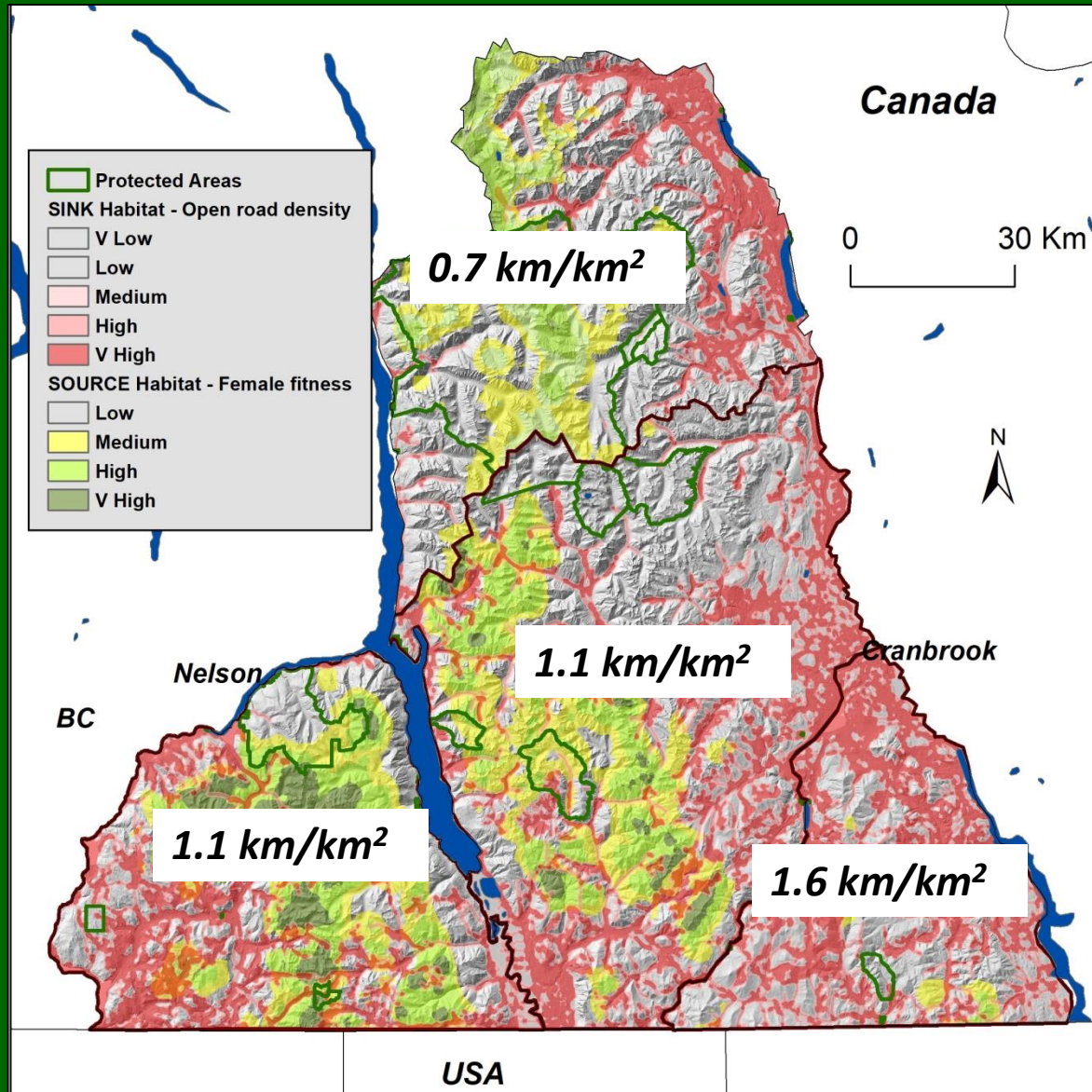


# Access management

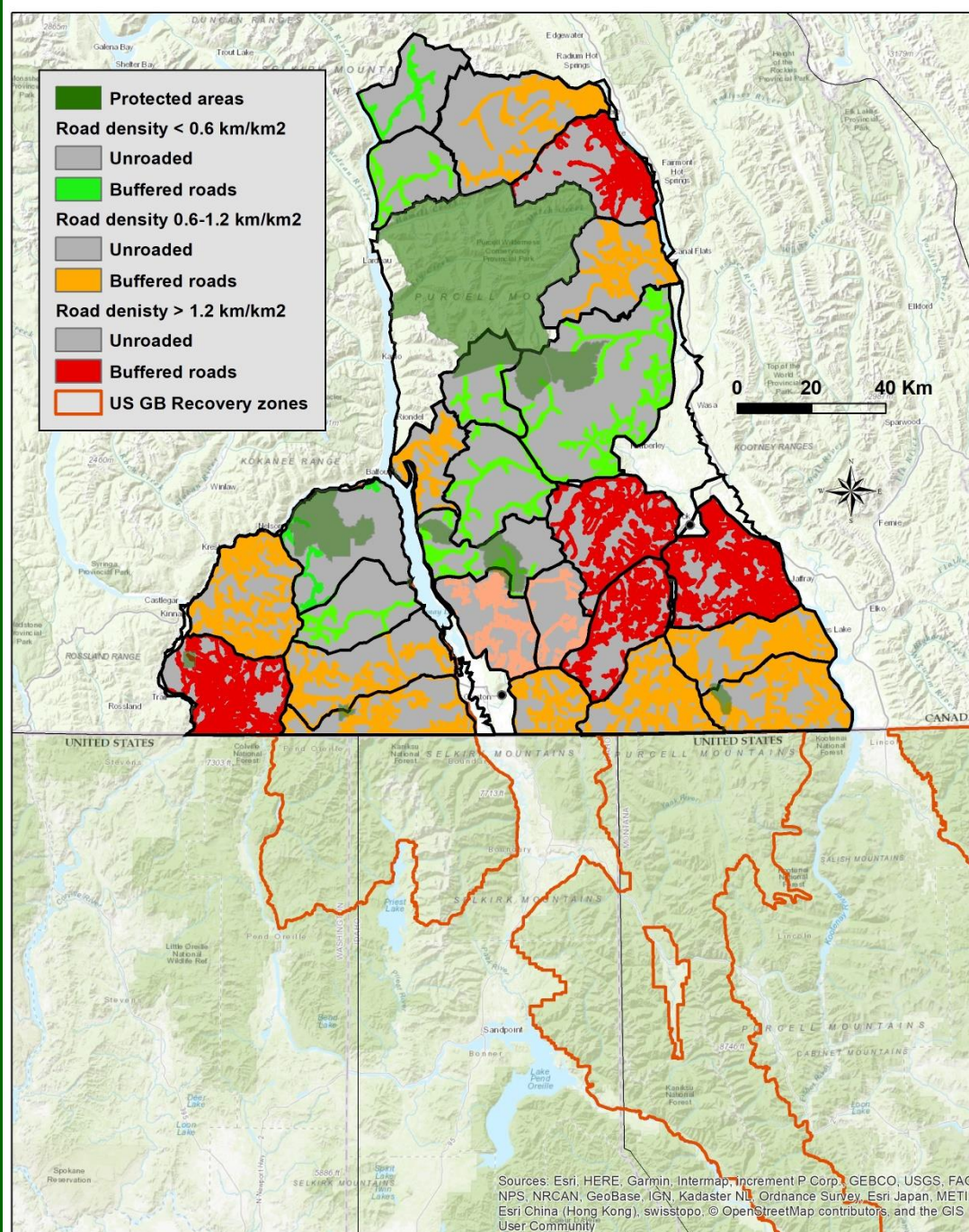




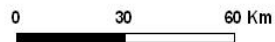
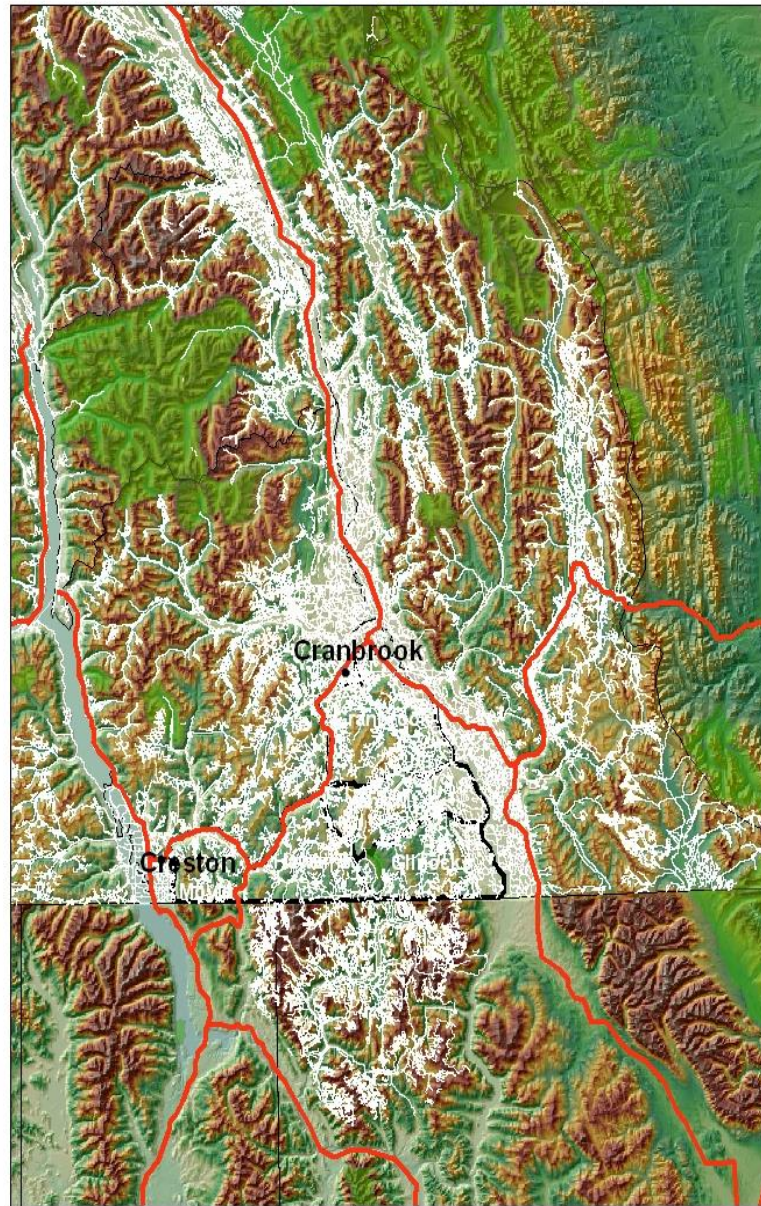
# Source-sink surface



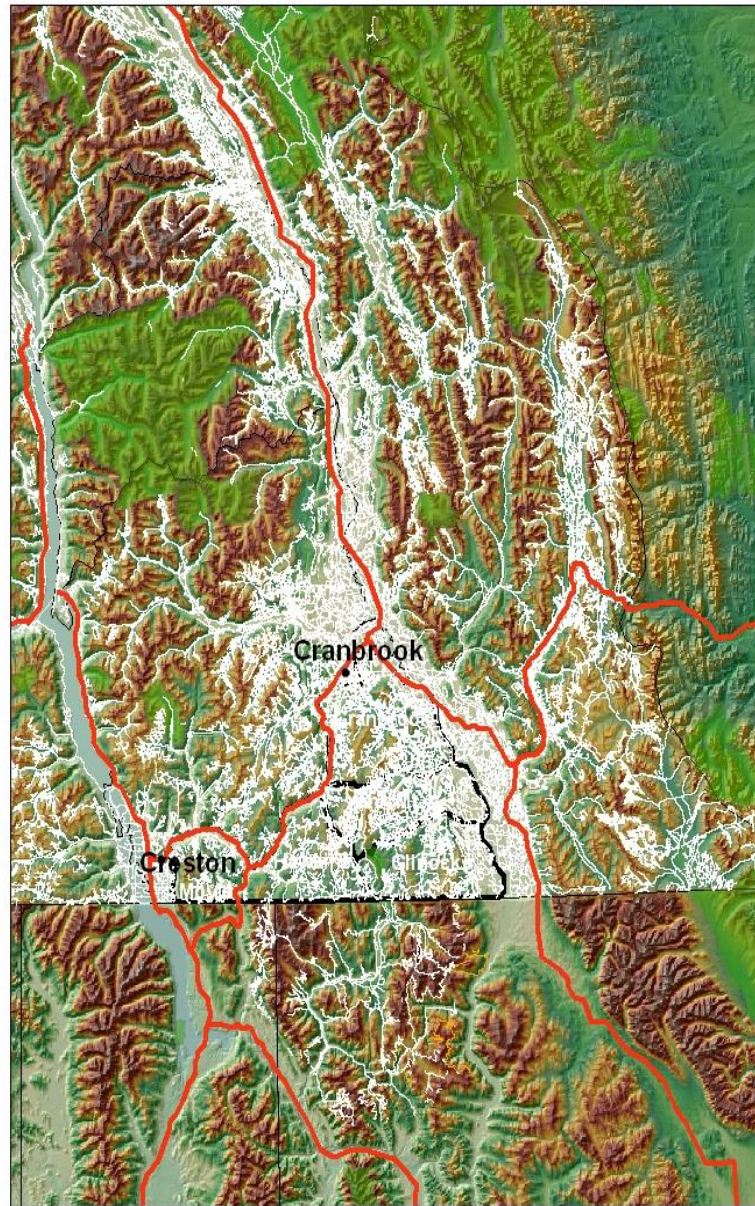










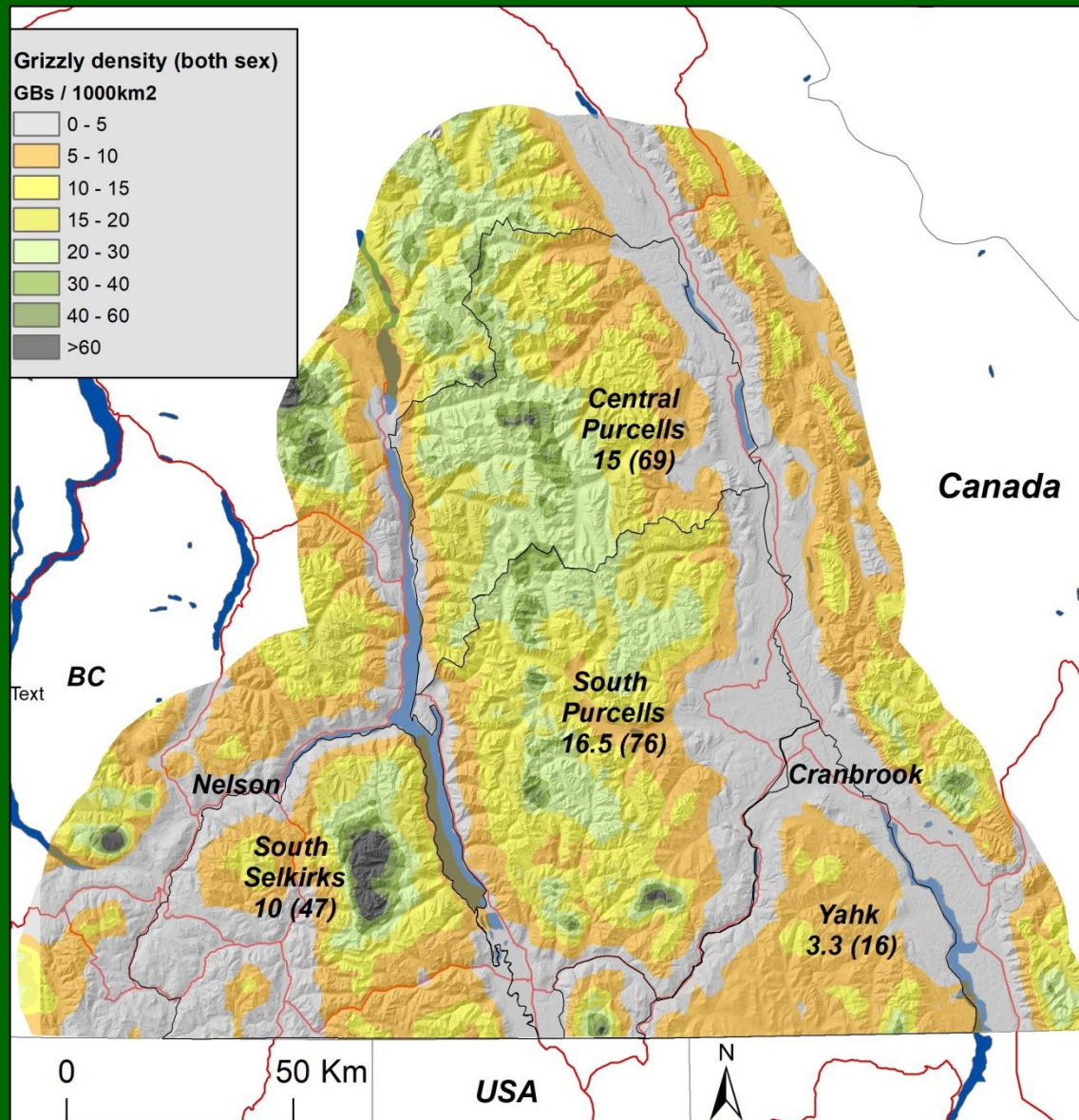


0 30 60 Km

A horizontal scale bar with markings for 0, 30, and 60 kilometers.



# Density surface





## The dance of berries and bullets: the influence of food resources and mortality risk on grizzly bear populations in southeastern British Columbia

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DAVID PAETKAU, [Wildlife Genetics International, PO Box 274, Nelson, British Columbia, Canada, V1L 5P9](#)

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# Grizzly Bears in Alberta

- 1928: Fur-bearer
- 1929: big-game species
- 1960s: more stringent hunting restrictions
- 1988: draw system and quotas
- 2002: Recommended for *Threatened* designation
  - Recovery Team Appointed
- 2004 - 2008: DNA-based population inventories
  - ~ 700 grizzly bears
- 2006: moratorium on hunting
- 2008: 5-year recovery plan released
- 2010: listed as *Threatened*
- 2016: updated draft recovery plan released (not yet approved)
- 2011 - 2018: DNA-based population inventories (final analyses forthcoming)

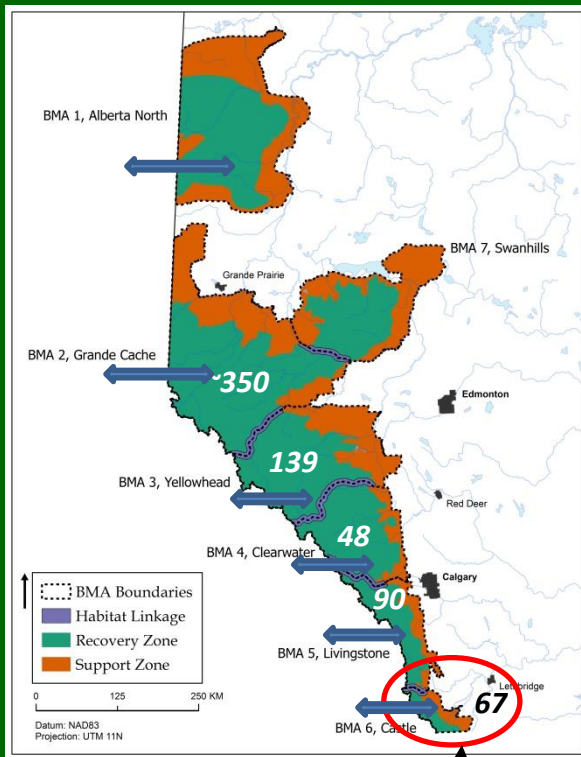


**2021 - Foothills  
Research Program  
being cancelled**

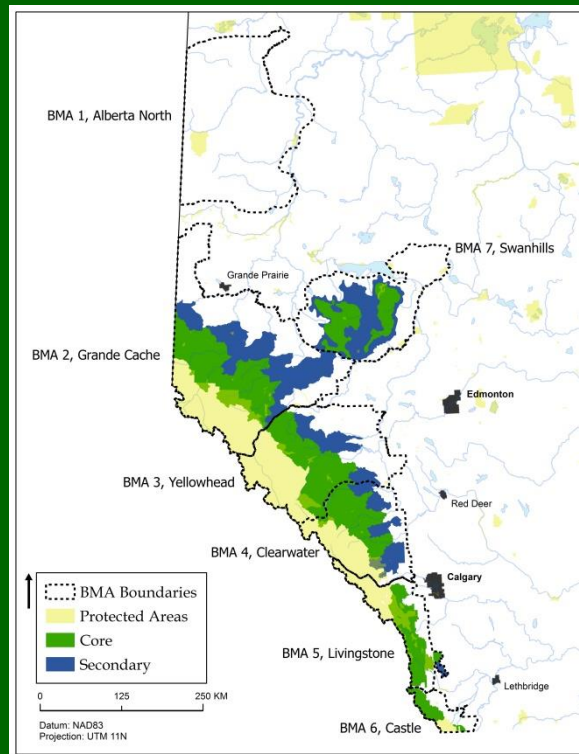


# Alberta grizzly bear units

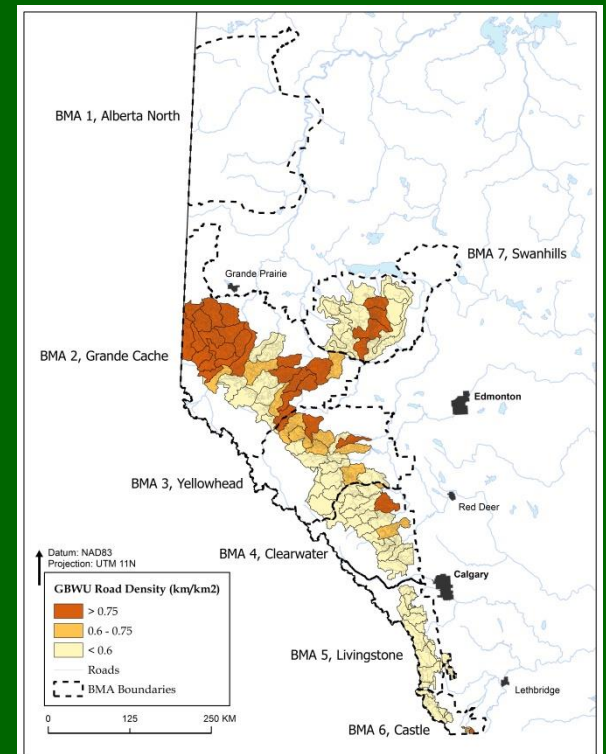
## Recovery areas



## Core & Secondary areas



## Road density classes



SW Alberta



# SW Alberta – Andrea Morehouse

## Recently Completed Grizzly Bear Research

DNA-based density and abundance estimates

Paternity analysis and evaluation of social learning

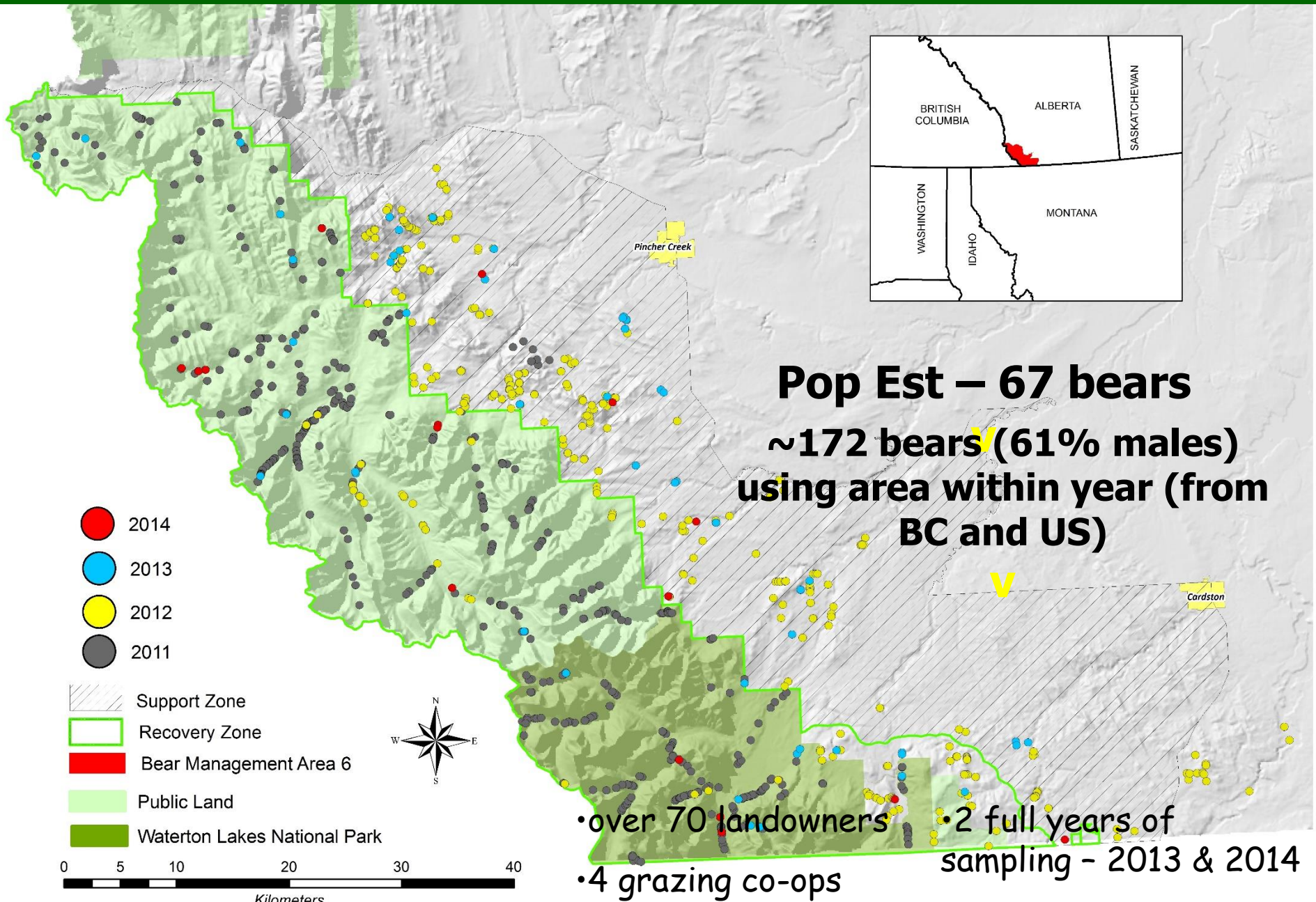
Evaluation of conflict reports – spatial and temporal trends

Evaluation of intercept-feeding program

Evaluation of local community group's conflict mitigation efforts



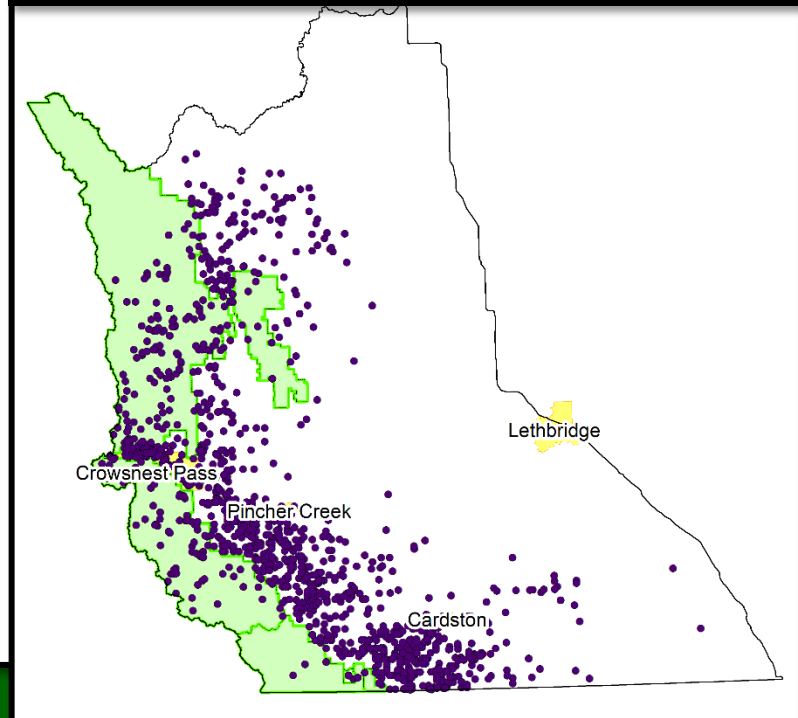
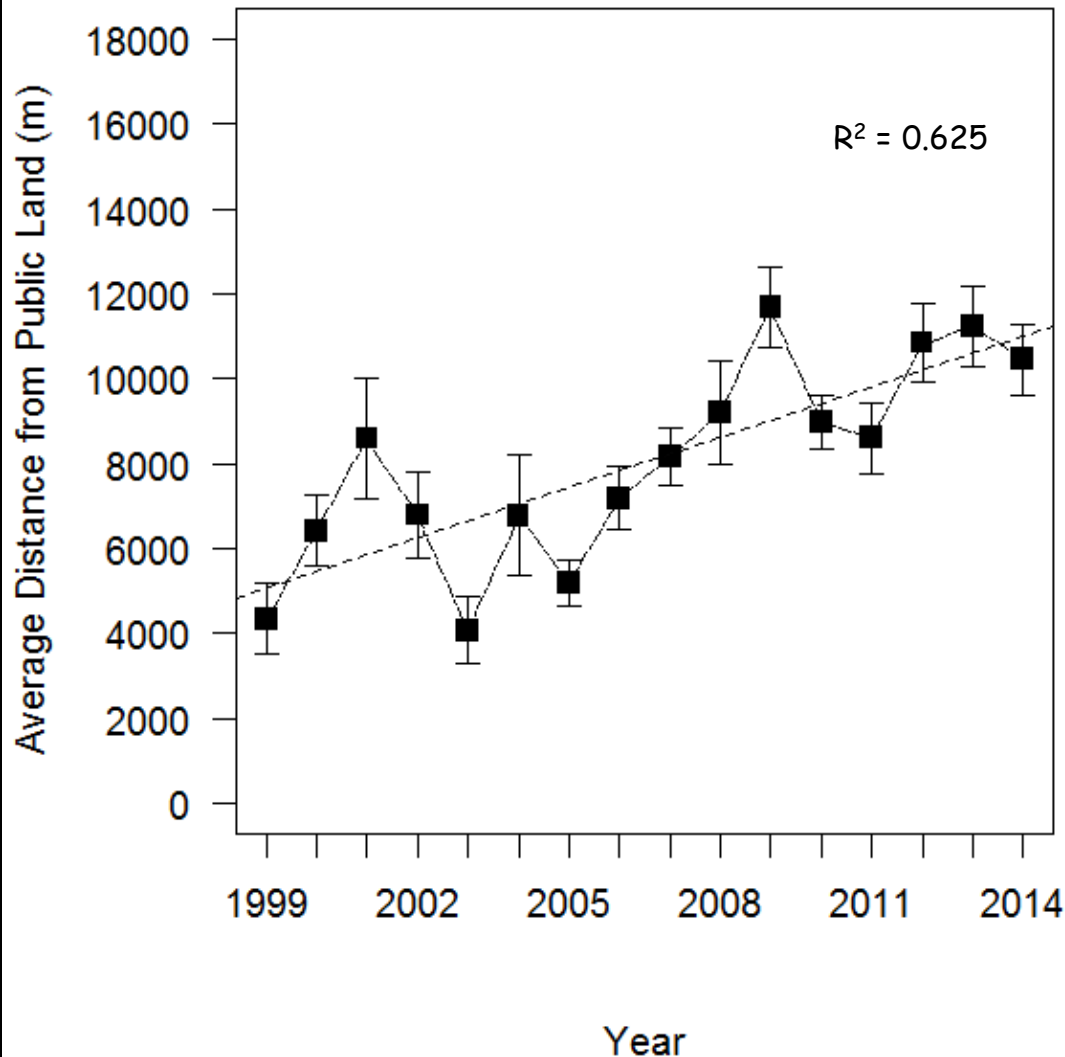
# Rub tree DNA surveys Andrea Morehouse





# Grizzly bear occurrences spreading east

Andrea Morehouse



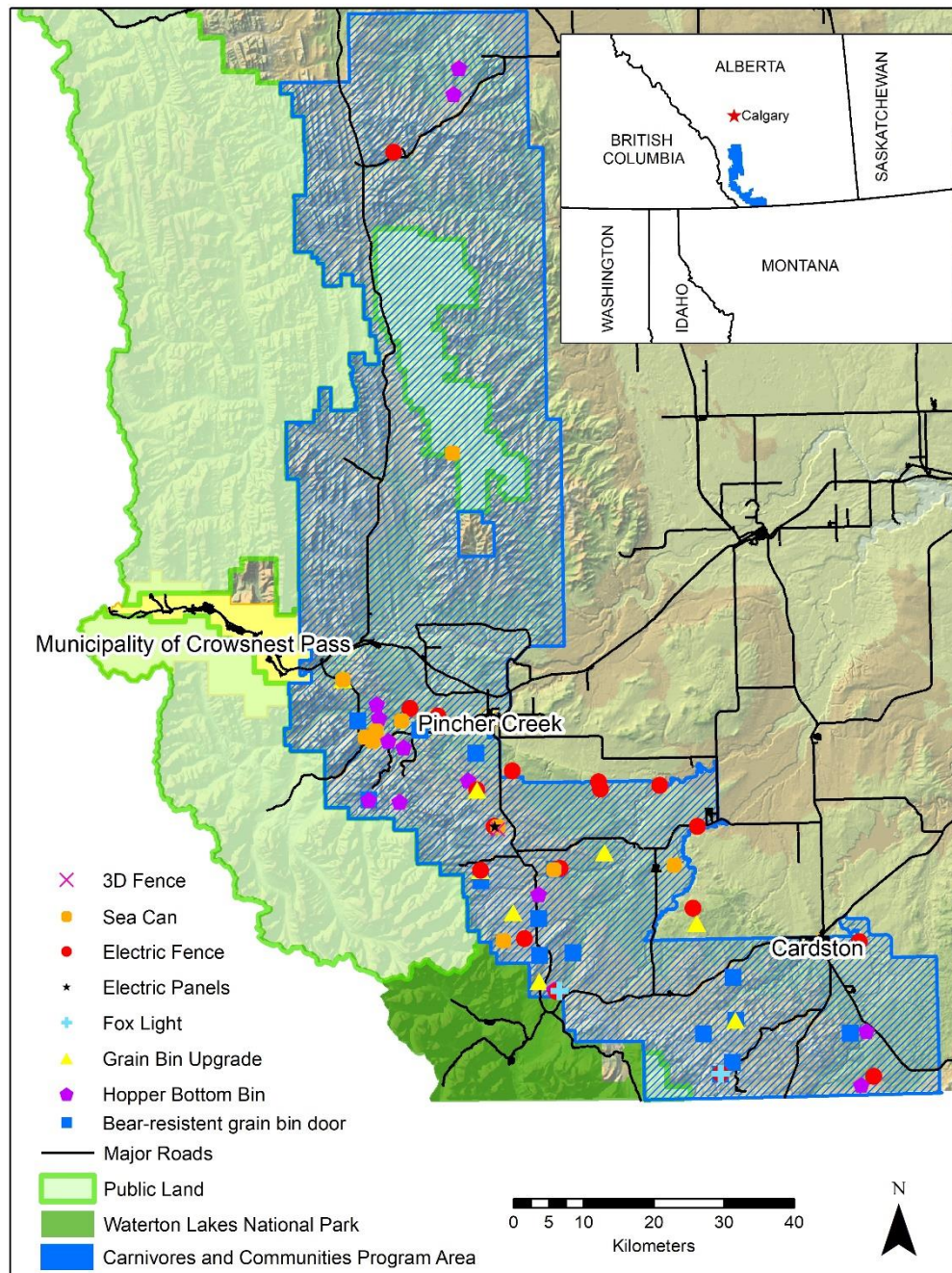




## Current Management Efforts

- Waterton Biosphere Reserve's Carnivores and Communities Program leads a variety of conflict mitigation efforts:
  - cost-shared attractant management projects
  - deadstock removal
  - bear safety workshops





Map current as of October 2, 2020. Map created by Andrea Morehouse.



