

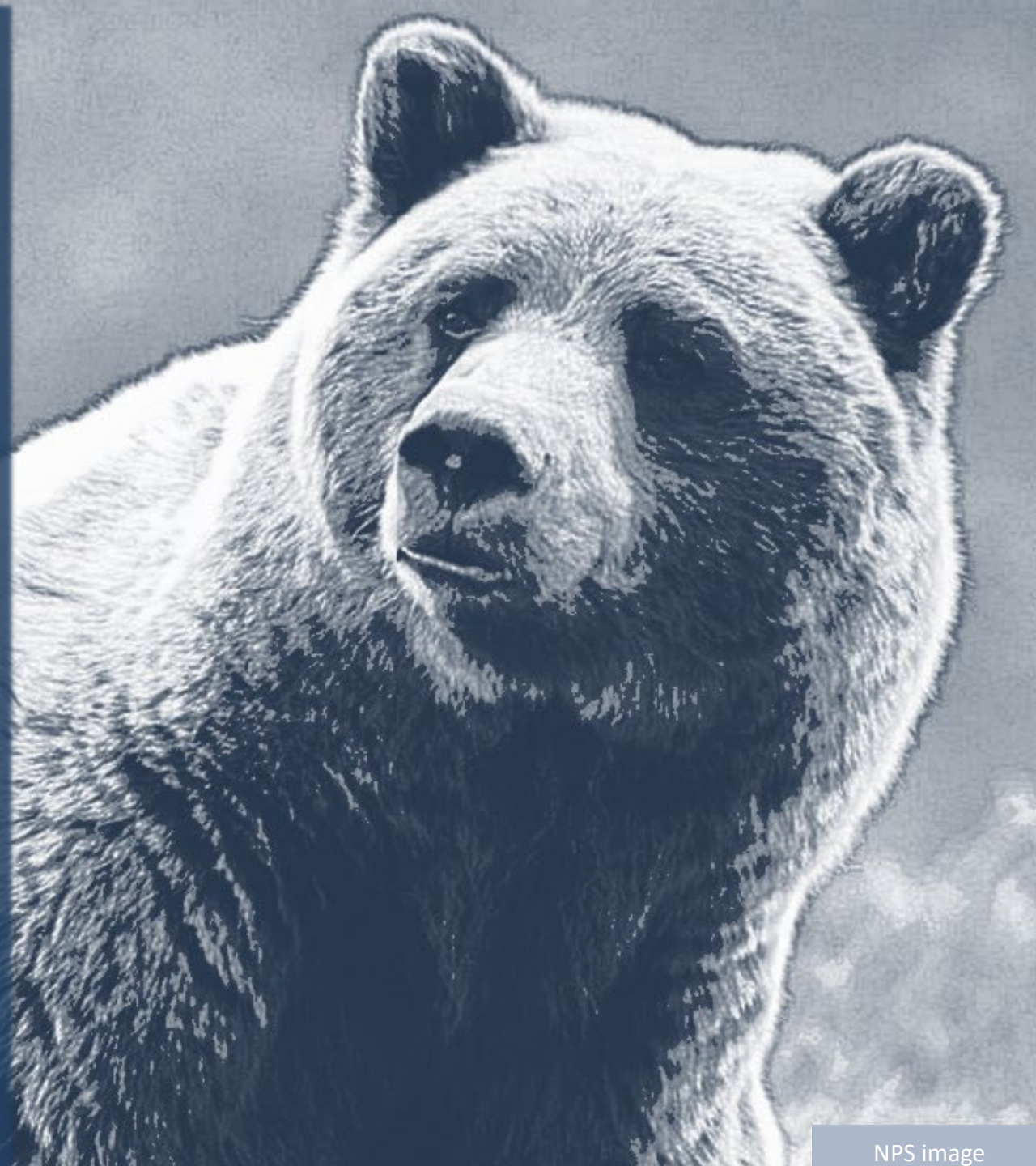
# Thoughts on changing human perspectives as grizzly bears recover in the Lower-48 States

How far have we come?  
Where do we need to go?

2<sup>ND</sup> GRIZZLY BEAR INFORMATION,  
EDUCATION & OUTREACH SUMMIT



Cecily M. Costello  
Research Wildlife Biologist



# Human-bear conflicts , IE&O – a never-ending challenge

10<sup>th</sup> Eastern Black Bear Workshop – Ontario, Canada, 1987

11<sup>th</sup> Eastern Black Bear Workshop – New Hampshire, USA, 1992

9<sup>th</sup> International Conference on Bear Research & Management – Montana, USA, 1992

5<sup>th</sup> Western Black Bear Workshop – 1994

10<sup>th</sup> International Conference on Bear Research & Management – Alaska, USA, 1995

6<sup>th</sup> Western Black Bear Workshop – Utah, USA, 1997

11<sup>th</sup> International Conference on Bear Research & Management – Tennessee, USA, 1998

7<sup>th</sup> Western Black Bear Workshop – Oregon, USA, 2000

13<sup>th</sup> International Conference on Bear Research & Management – Wyoming, USA, 2001

14<sup>th</sup> International Conference on Bear Research & Management – Norway, 2002

8<sup>th</sup> Western Black Bear Workshop – Montana, USA, 2003

9<sup>th</sup> Western Black Bear Workshop – New Mexico, USA, 2006

10<sup>th</sup> Western Black Bear Workshop – Nevada, USA, 2009

20<sup>th</sup> International Conference on Bear Research & Management – Ontario, Canada, 2011

22<sup>nd</sup> International Conference on Bear Research & Management – Utah, USA, 2013

24<sup>th</sup> International Conference on Bear Research & Management – Alaska, USA, 2016

27<sup>th</sup> International Conference on Bear Research & Management – Montana, USA, 2021

6<sup>th</sup> International Human-Bear Conflicts Workshop – Nevada, USA, 2022

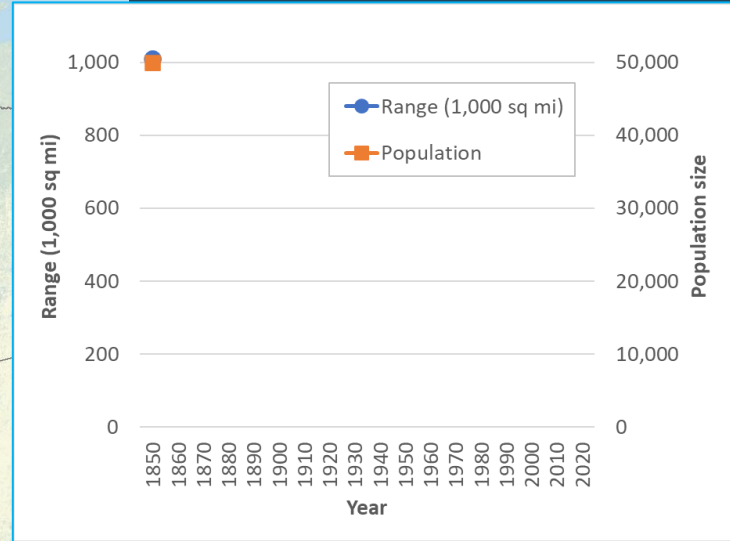


- Bear distribution through time
- Human perspectives through time
  - Montana human attitudes study 2020
  - Review of historical documents and quotes
- Connectivity studies 2022-2023
- Private Lands and Human Development
- Get a little bit philosophical

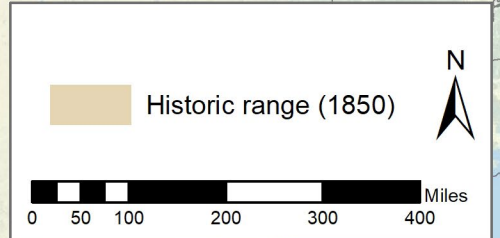
Payton Adams, CSKT  
Justin Clapp, WGFD  
Jennifer Fortin Noreus, USFWS  
Justin Gude, MFWP  
Kerry Gunther, NPS  
Mark Haroldson, USGS-IGBST  
Jamie Jonkel, MFWP  
Wayne Kasworm, USFWS  
Brandon Kittson, BFW  
Mike Lewis, MFWP  
Alexander Metcalf, UM  
Elizabeth Metcalf, UM

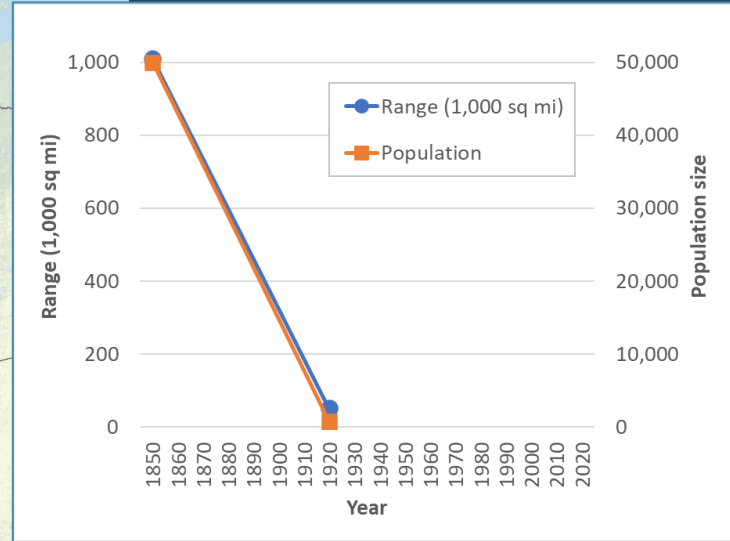
Holly Nesbitt, UM  
Lori Roberts, MFWP  
Wesley Sarmiento, MFWP  
Sarah Sells, UM  
Justine Vallieres, MFWP  
Frank van Manen, USGS-IGBST  
Justin Tiesberg, USFWS  
Milan Vinks, MTFWP  
John Waller, NPS  
Erik Wenum, MFWP  
Chad White, MTFWP  
Kyle Yorke, MFWP





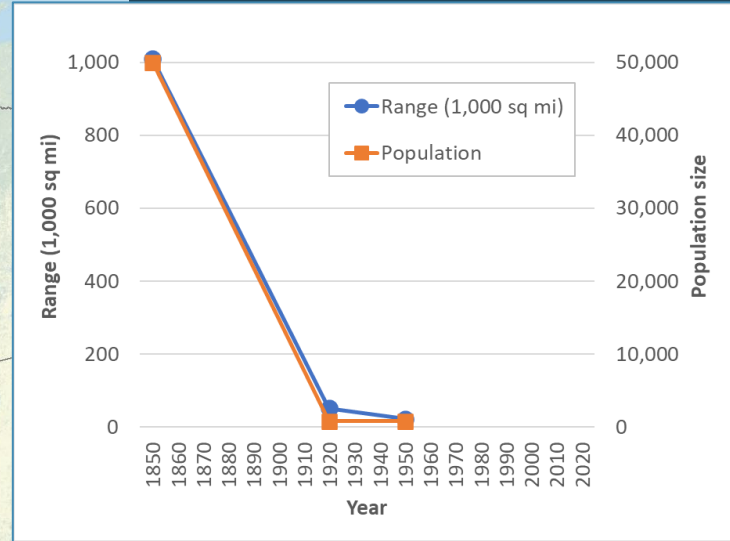
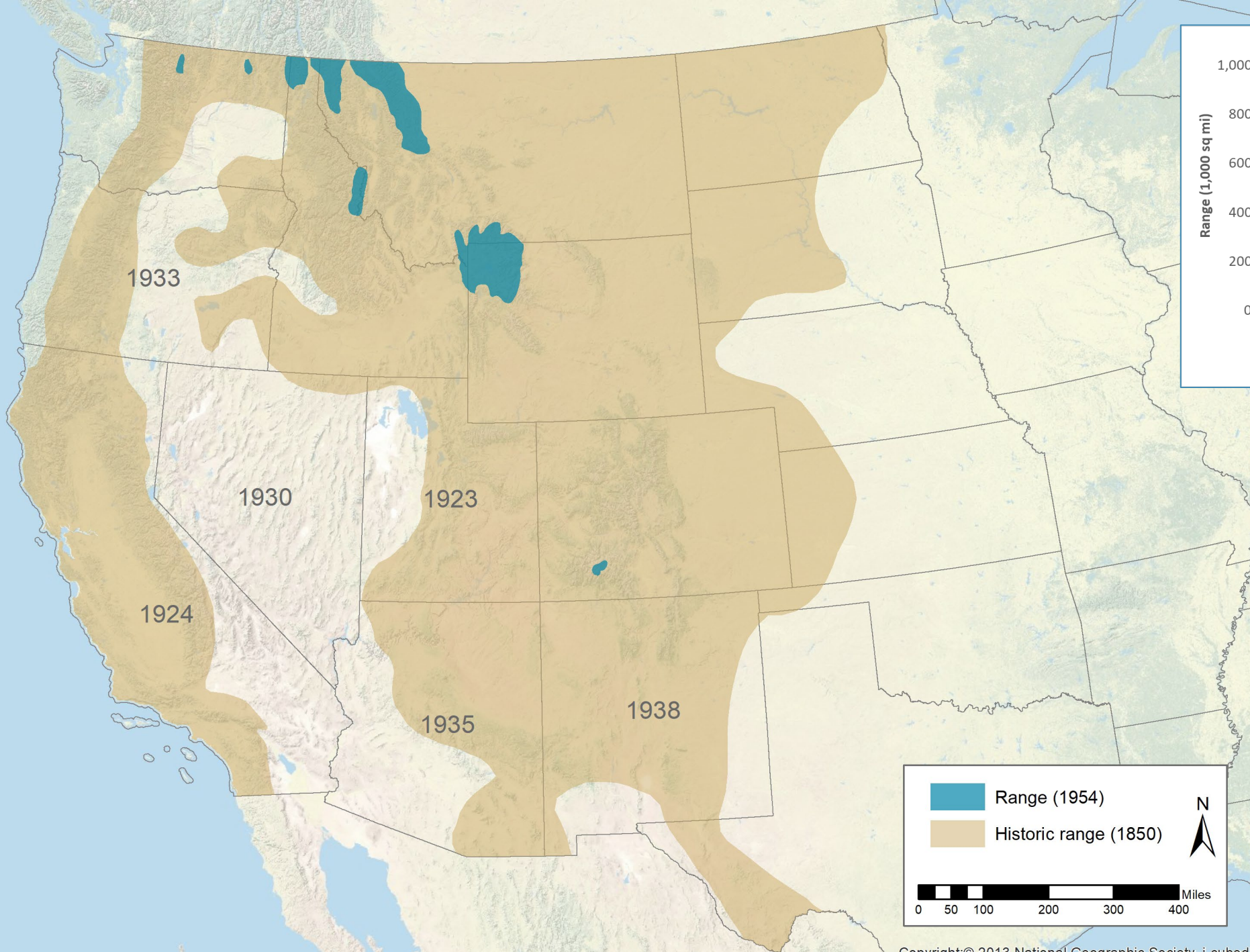
- Range included 17 states
- Area ~1.1 million mi<sup>2</sup> or ~2.6 million km<sup>2</sup>
- Population size ~50,000



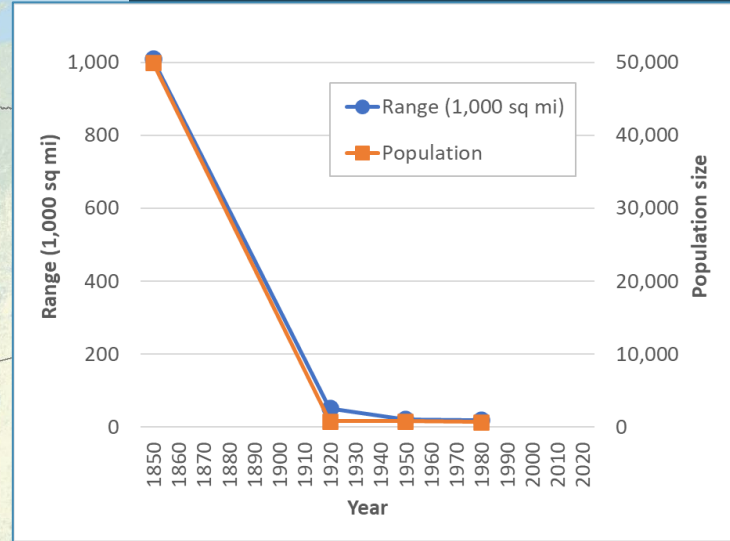
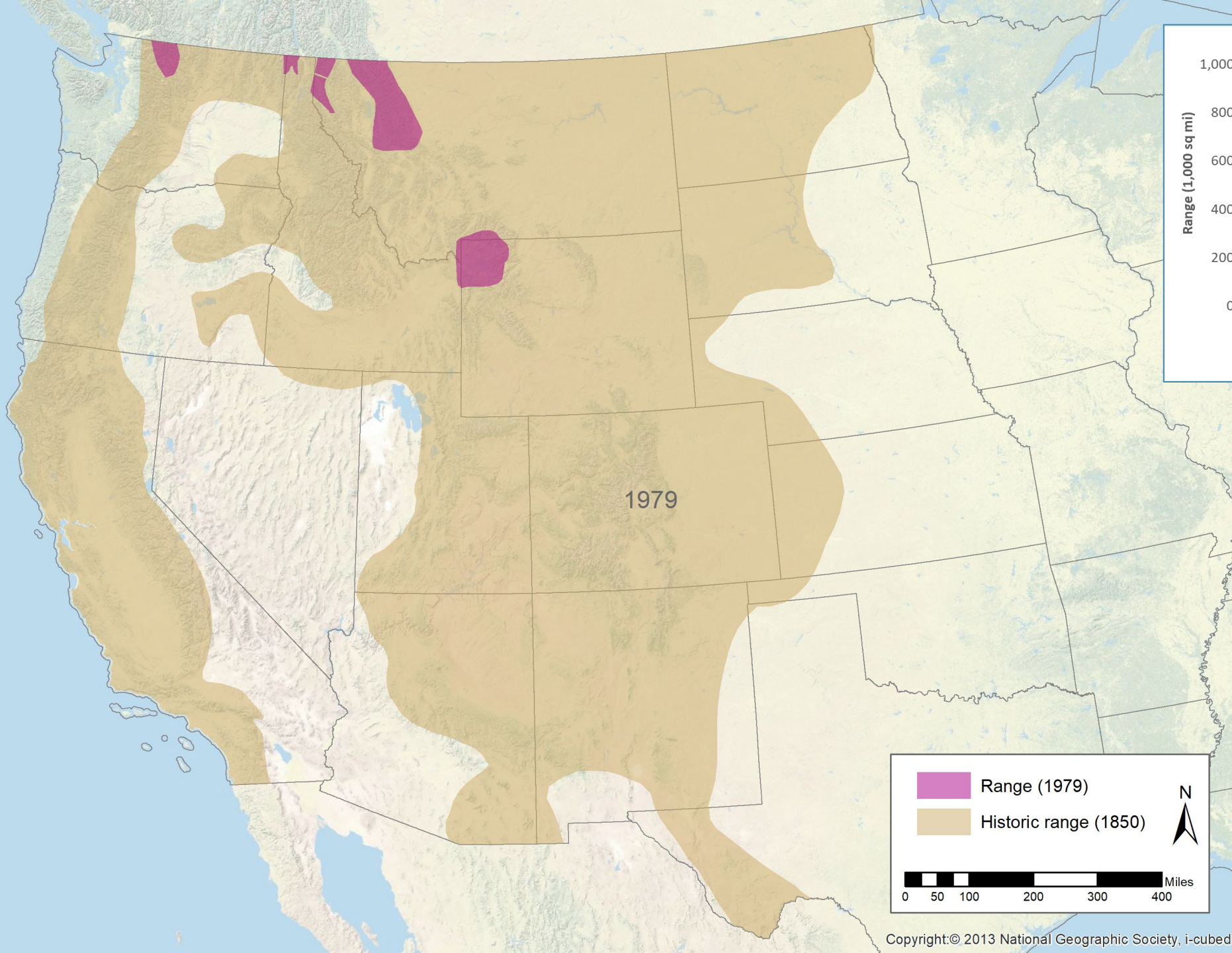


- Eliminated from 7 states
- Range highly fragmented
- Area ~51 thousand mi<sup>2</sup> or ~132 thousand km<sup>2</sup>
- Population size ~800

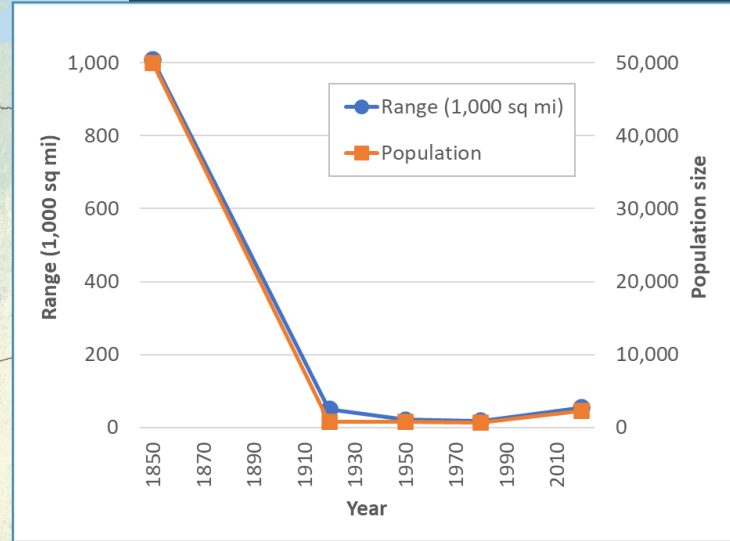
Merriam, C. Hart. 1922. Distribution of grizzly bears in the U.S. *Outdoor Life* 50: 405-406.



- Eliminated from another 6 states
- Area ~58 thousand mi<sup>2</sup> or ~150 thousand km<sup>2</sup>
- Population size ~800



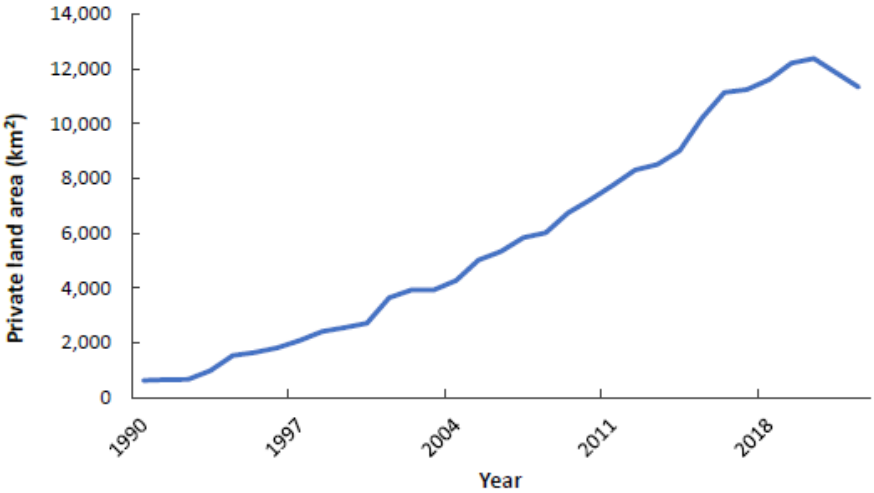
- Eliminated from 1 more state
- Area ~19 thousand mi<sup>2</sup> or ~49 thousand km<sup>2</sup>
- Population size ~700



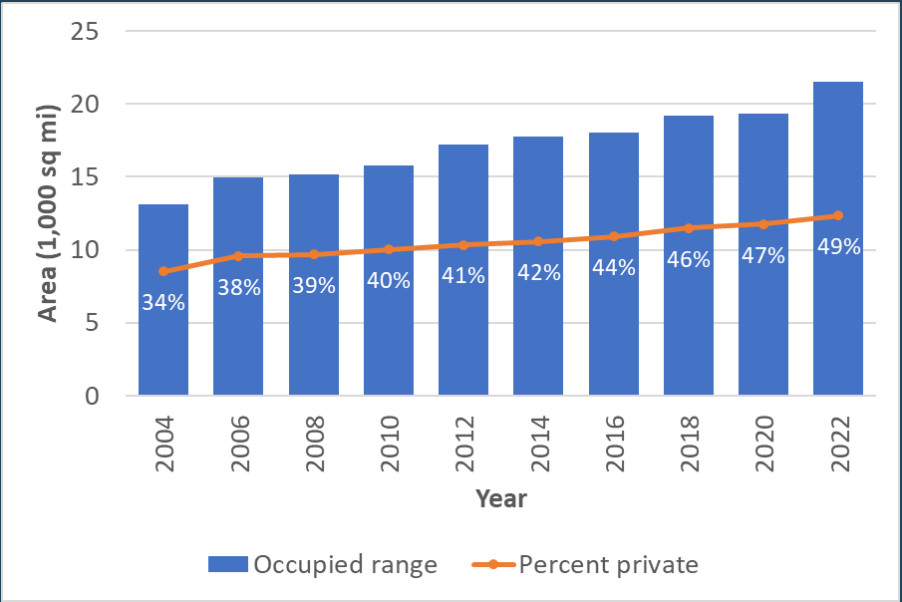
- Expansion and growth
- Area  $\sim 55$  thousand  $\text{mi}^2$  or  $\sim 142$  thousand  $\text{km}^2$
- Population size  $\sim 2,300$

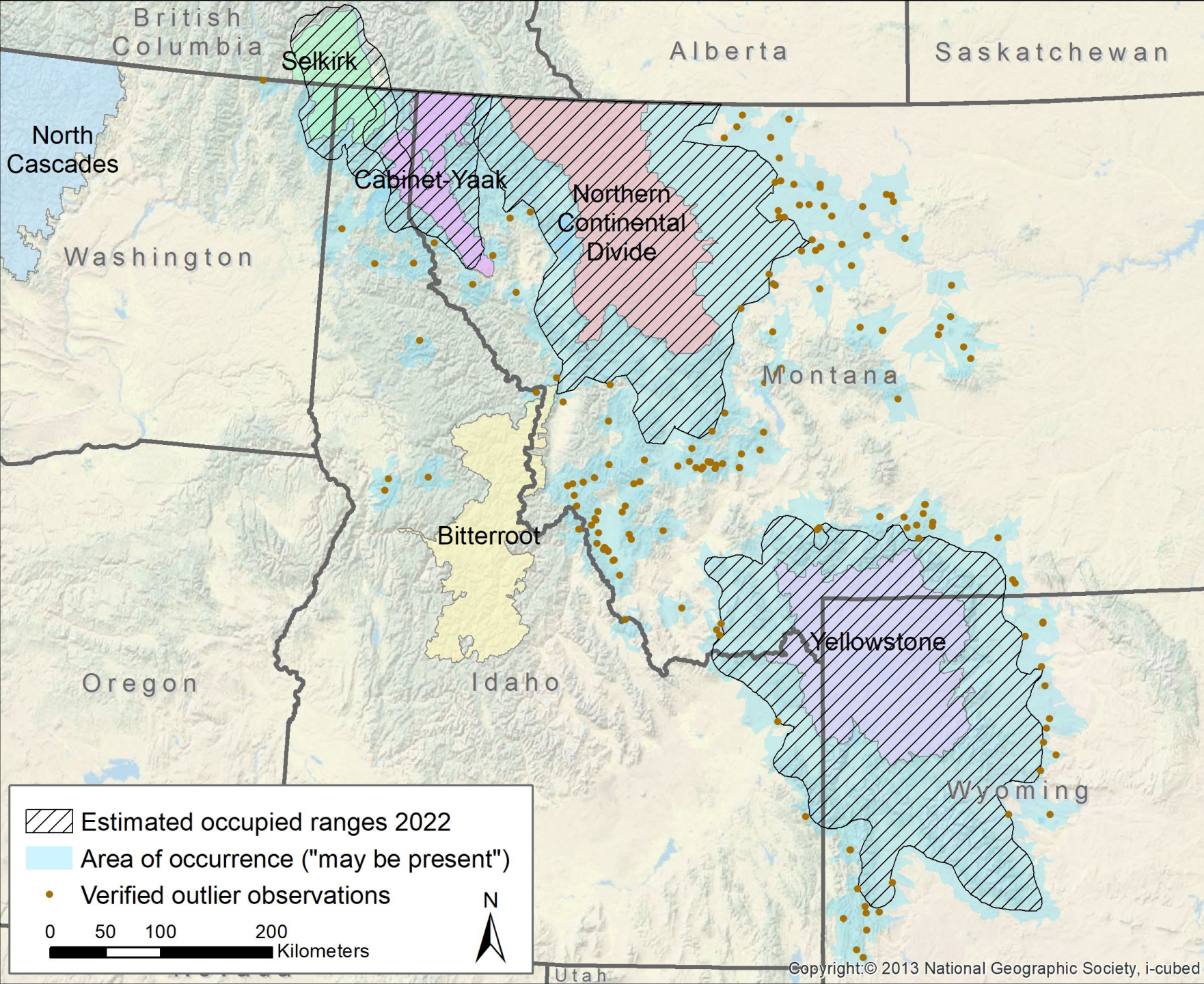


# Occupied range expansion Greater Yellowstone Ecosystem 1990-2022



# Occupied range expansion Northern Continental Divide Ecosystem 2004-2022

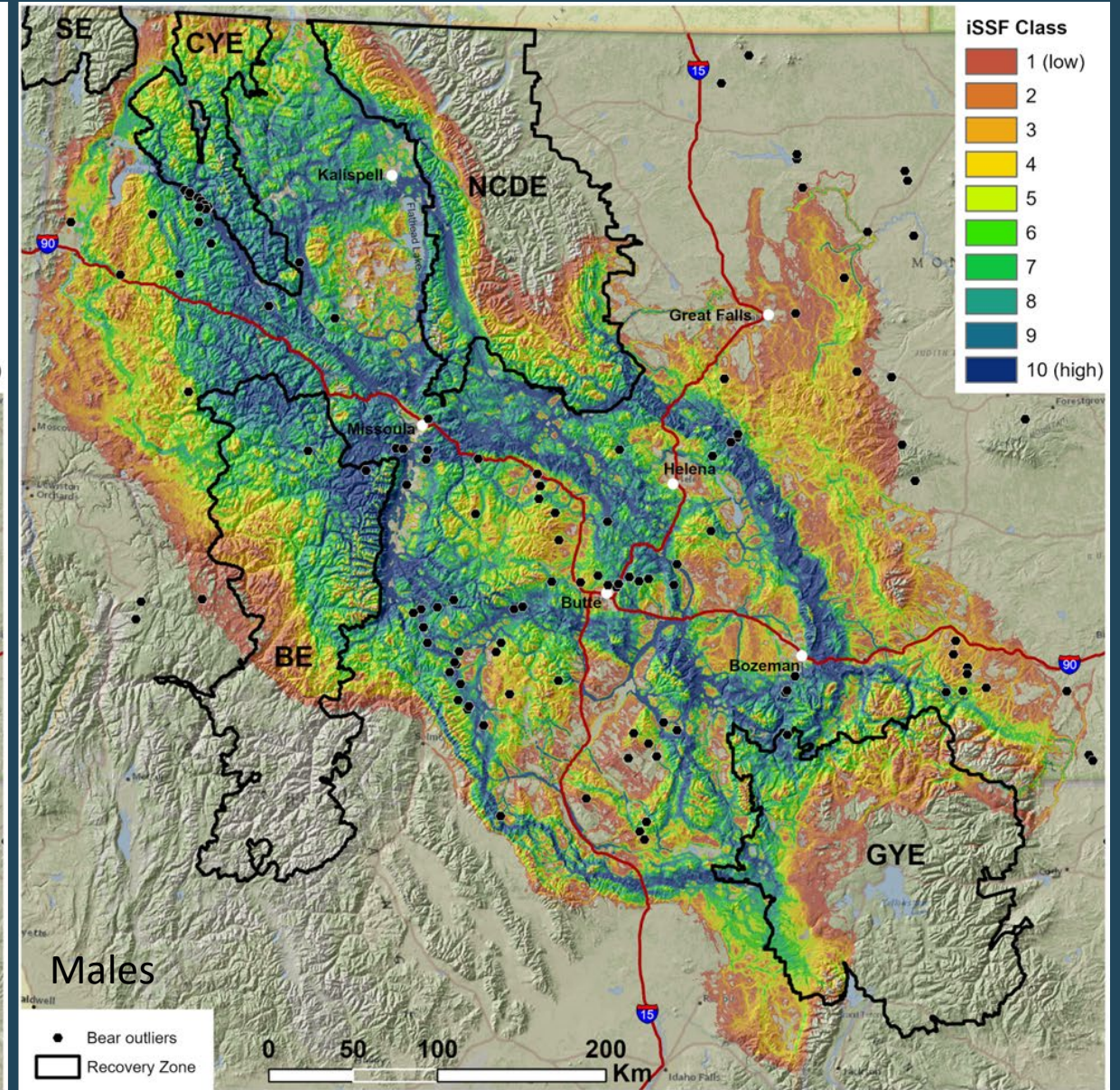
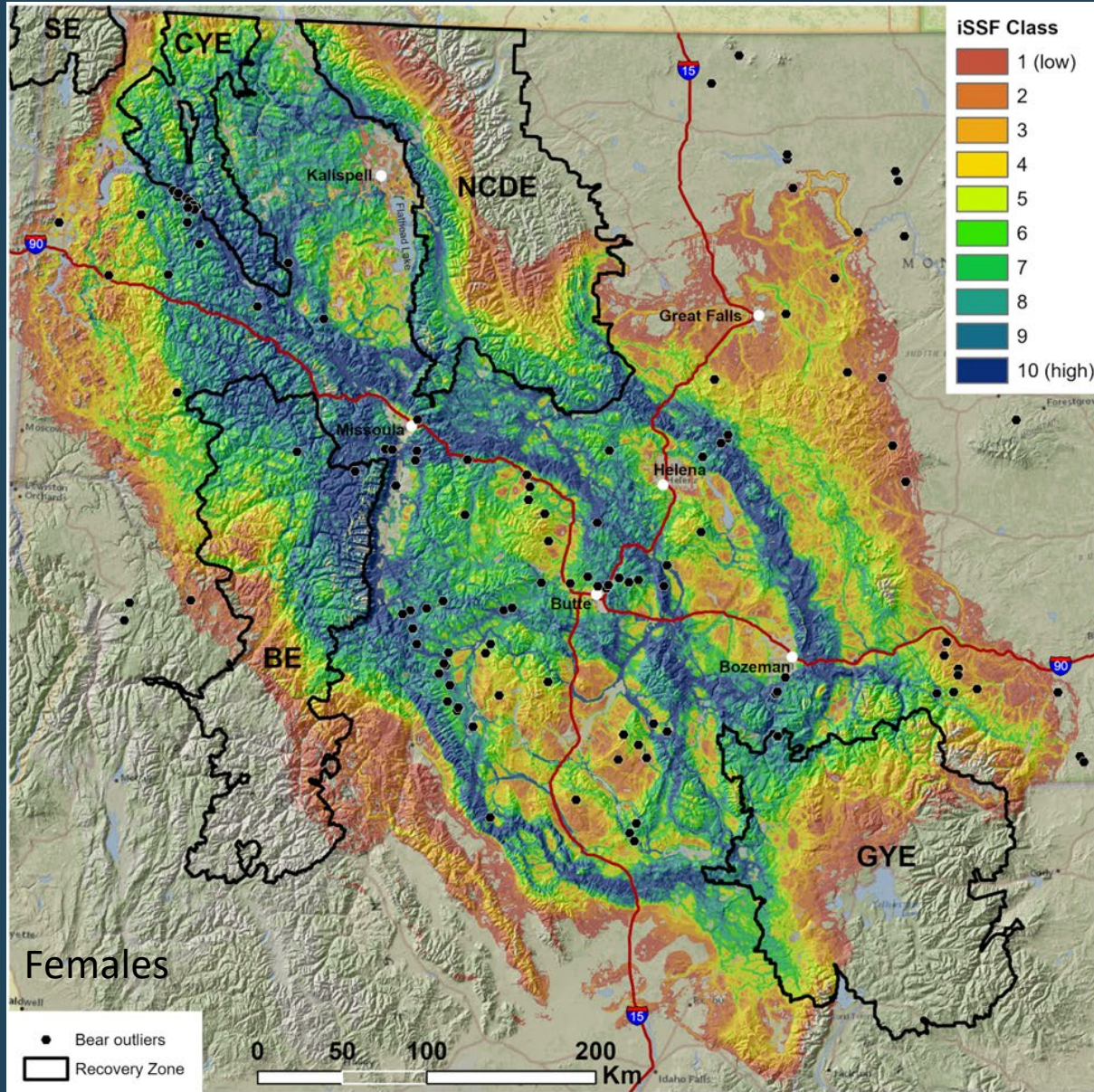




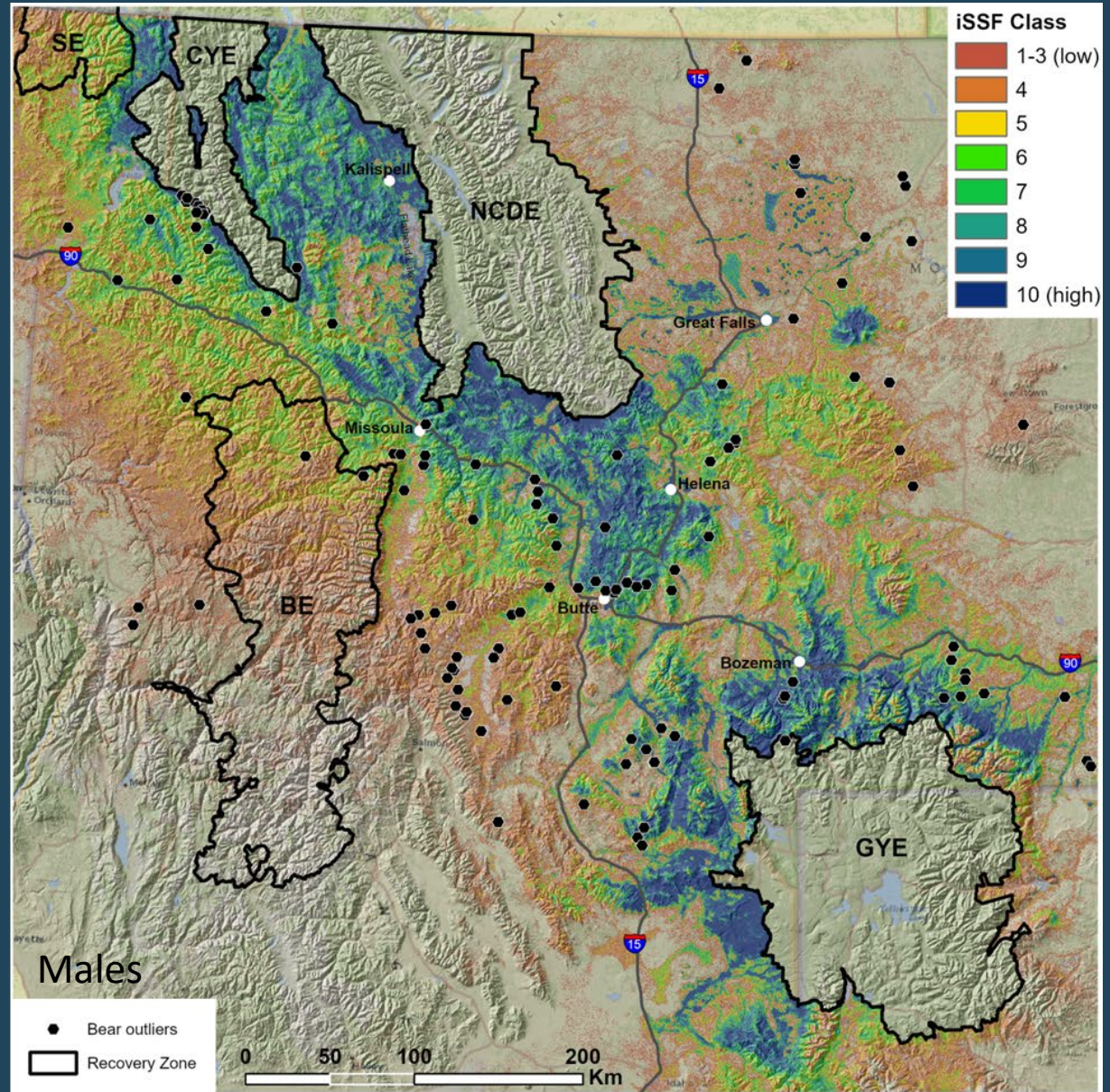
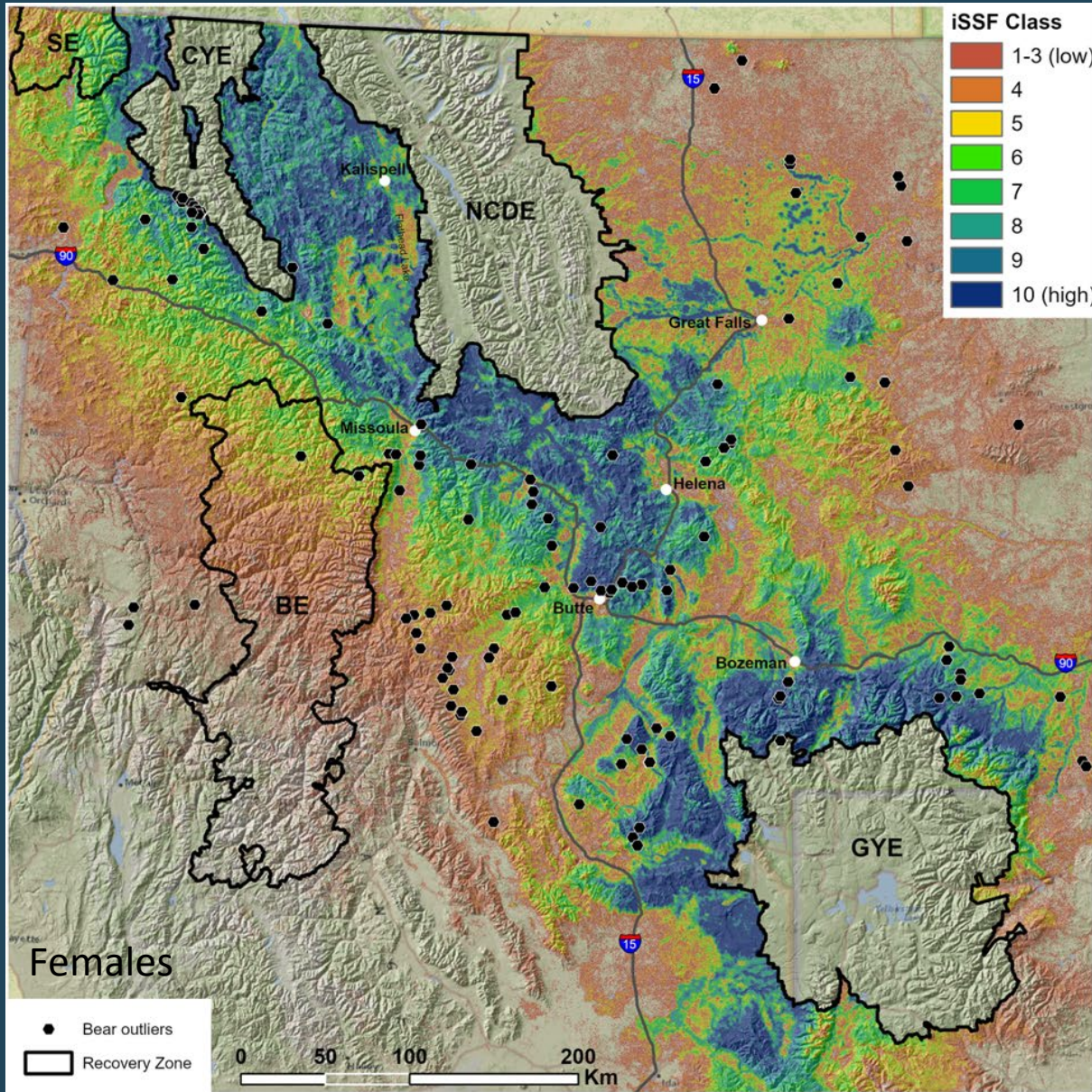
2022

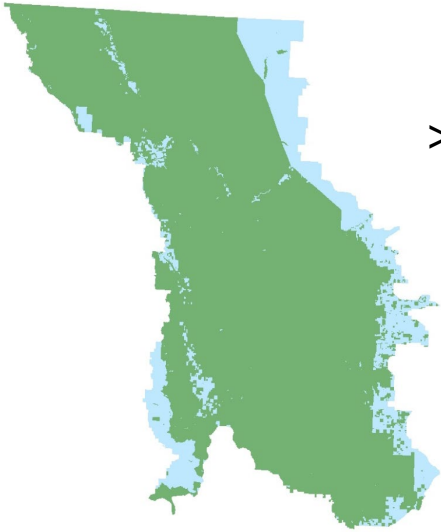
- Occupied Range  
Lower-48 Populations
- Area of Occurrence  
“may be present”
- Outliers

# Predicted Connectivity – Directed Paths

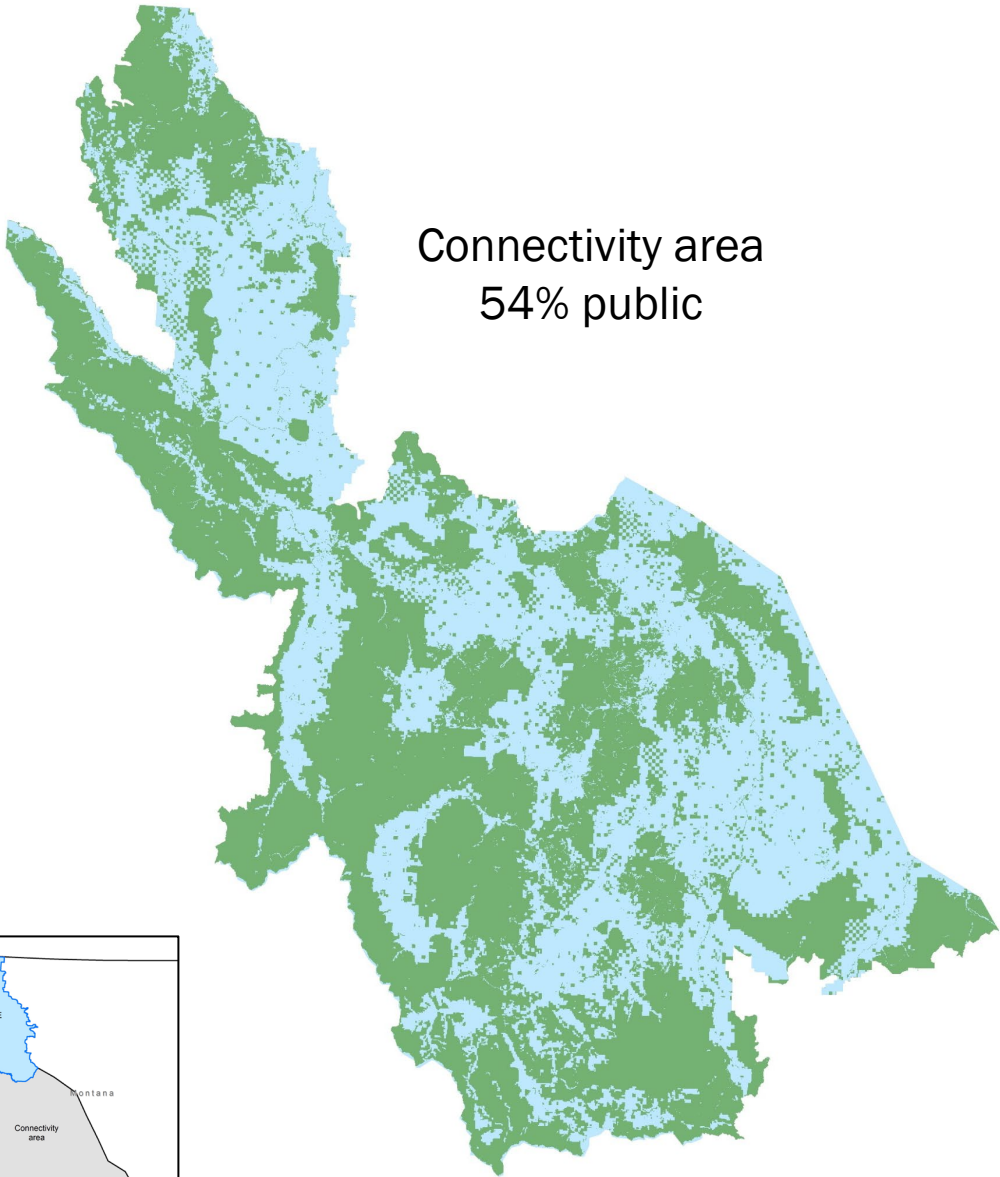


# Predicted Connectivity – Undirected Paths

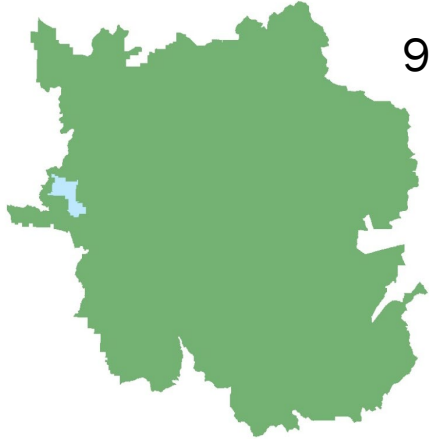




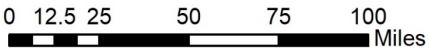
NCDE  
>84% public

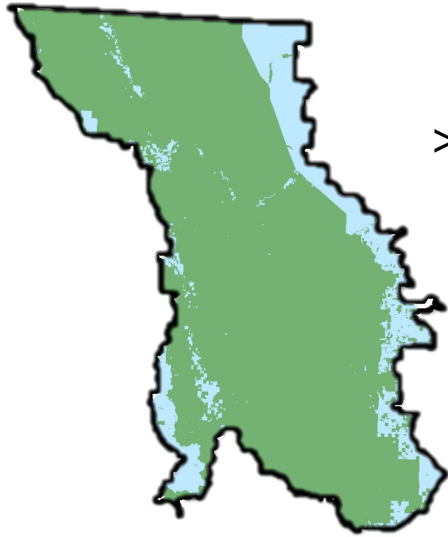


Connectivity area  
54% public

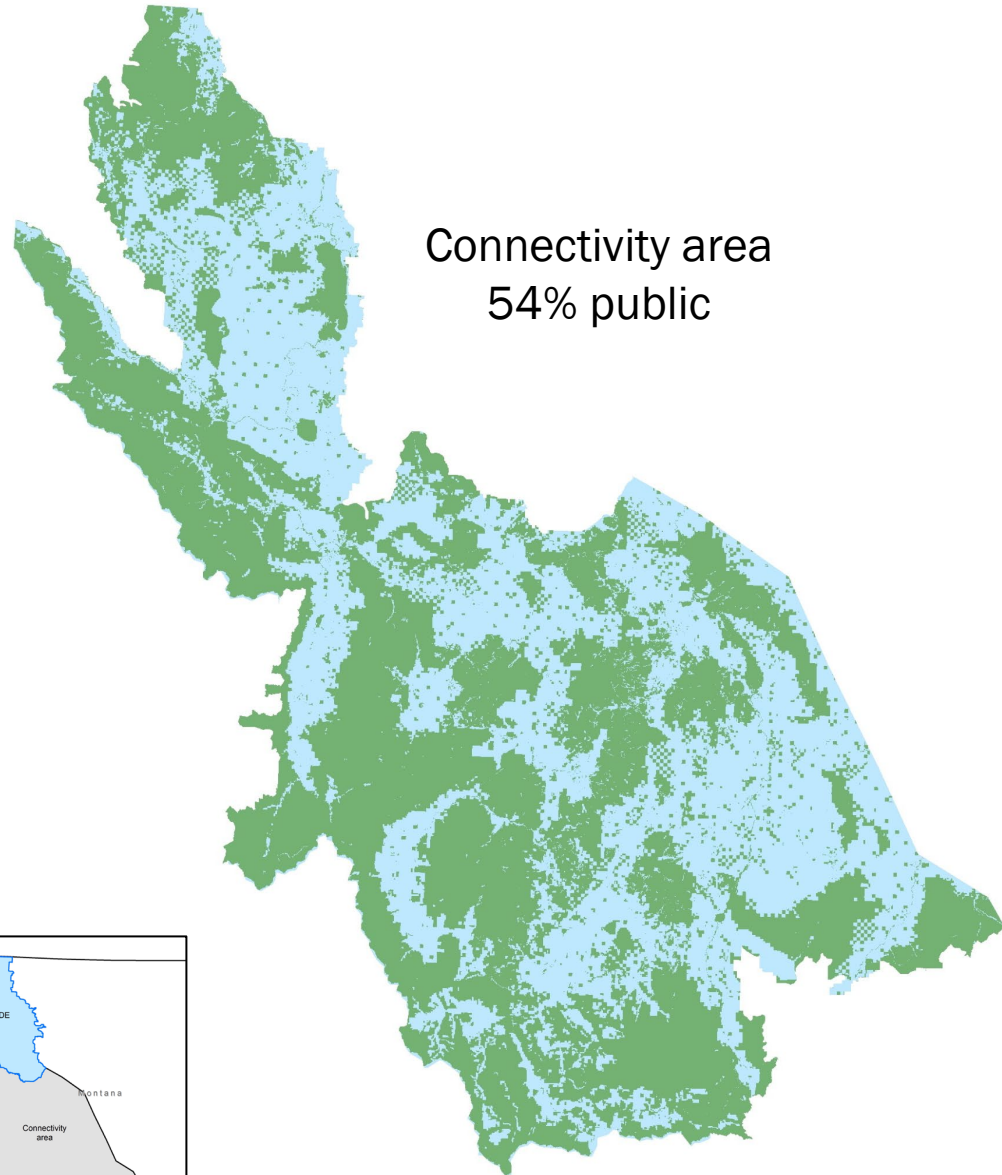


GYE  
98% public

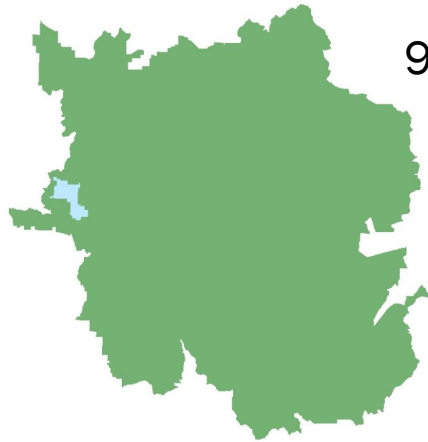




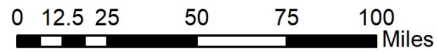
NCDE  
>84% public

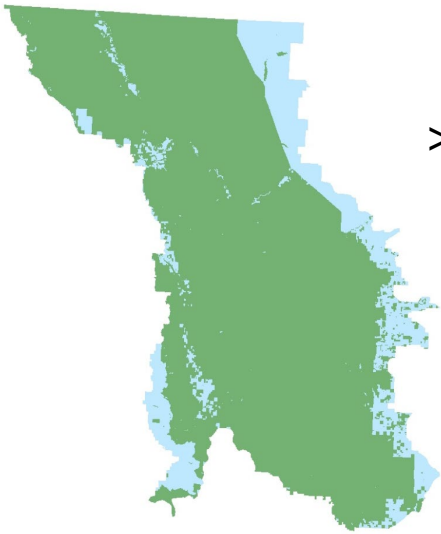


Connectivity area  
54% public

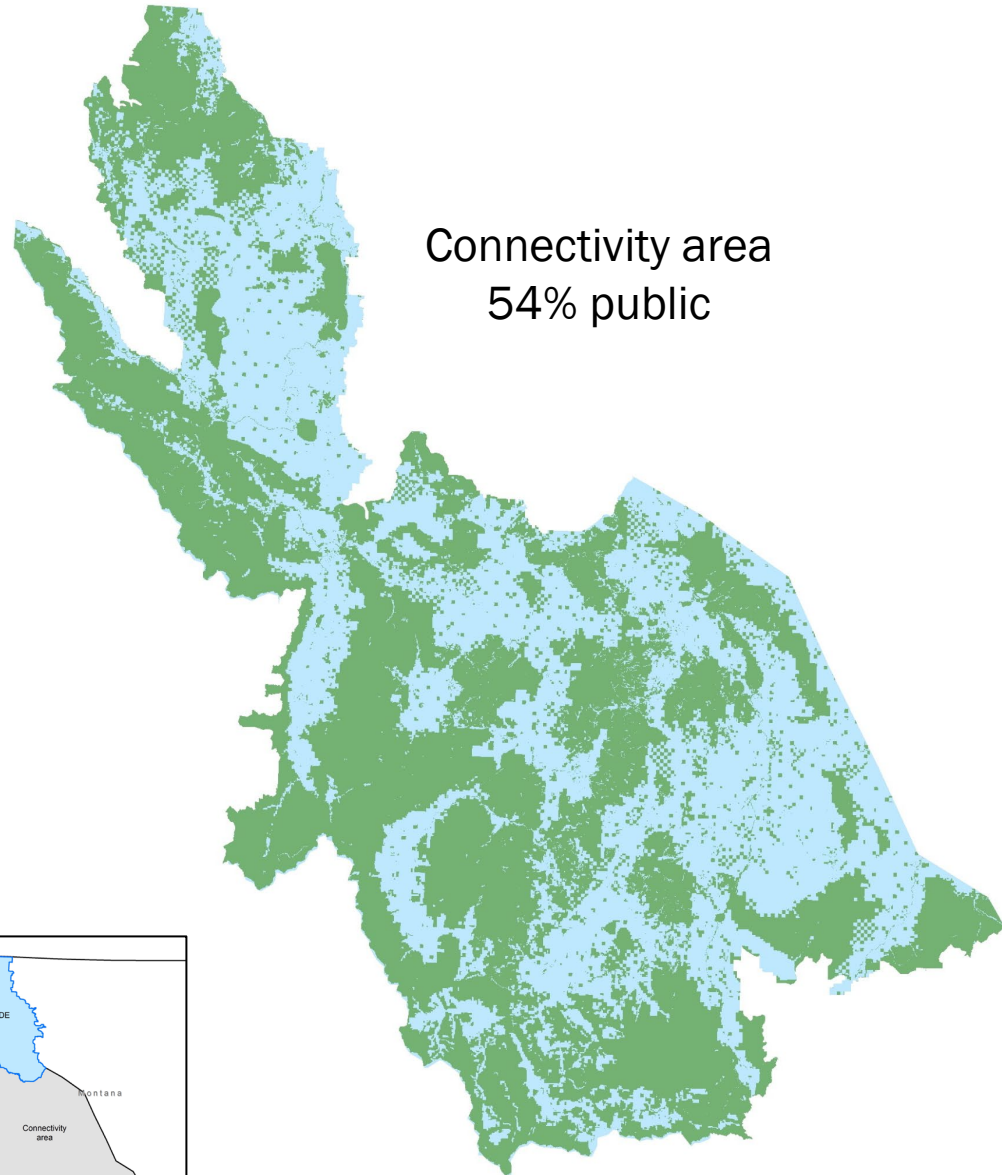


GYE  
98% public

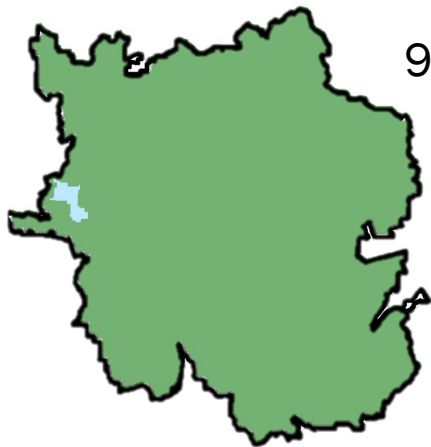




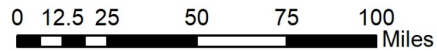
NCDE  
>84% public



Connectivity area  
54% public

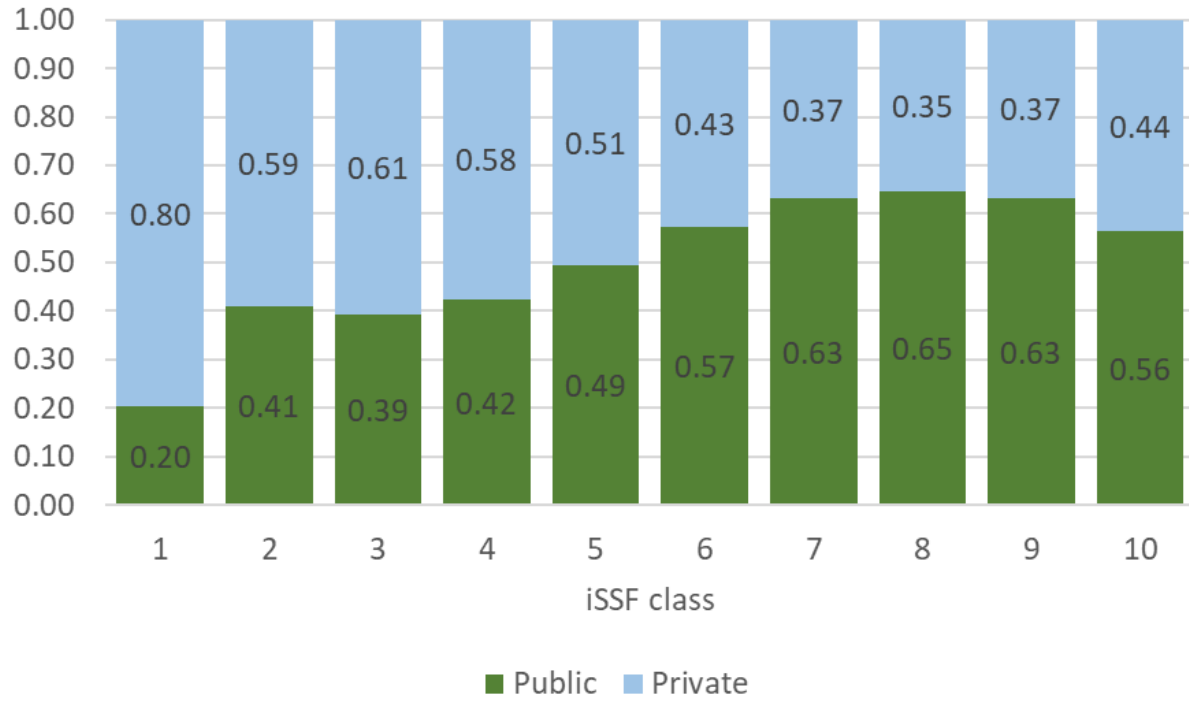


GYE  
98% public

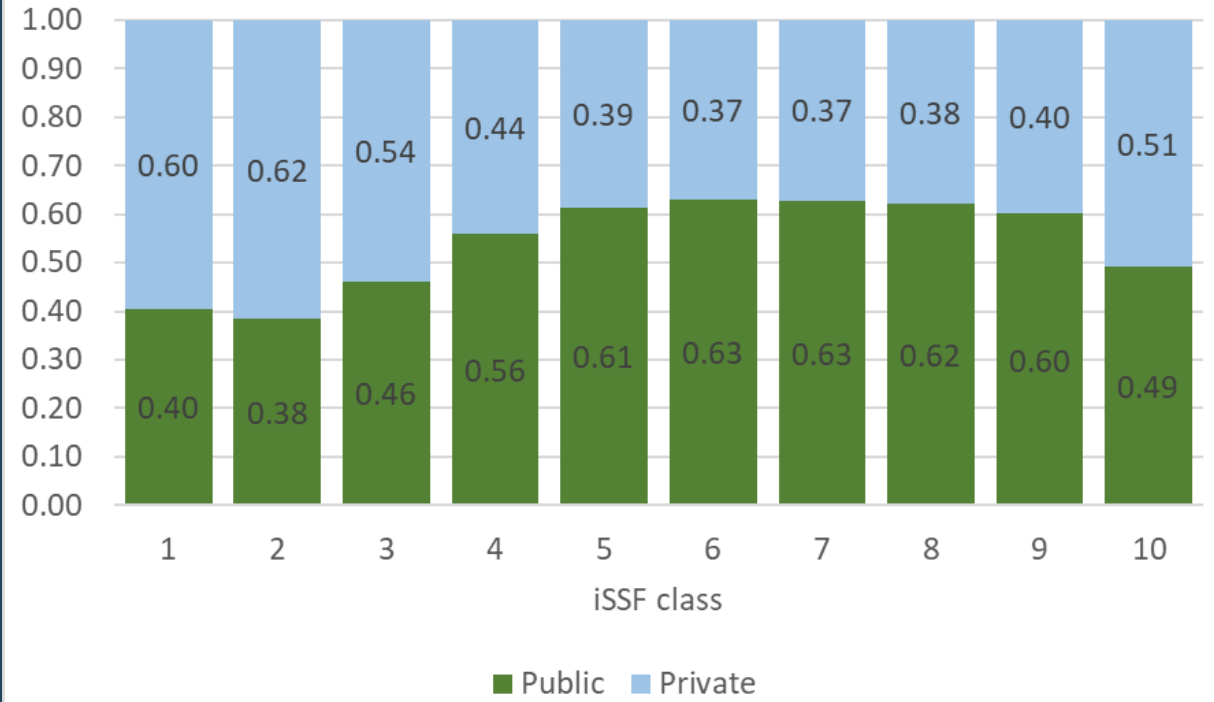




Female



Male



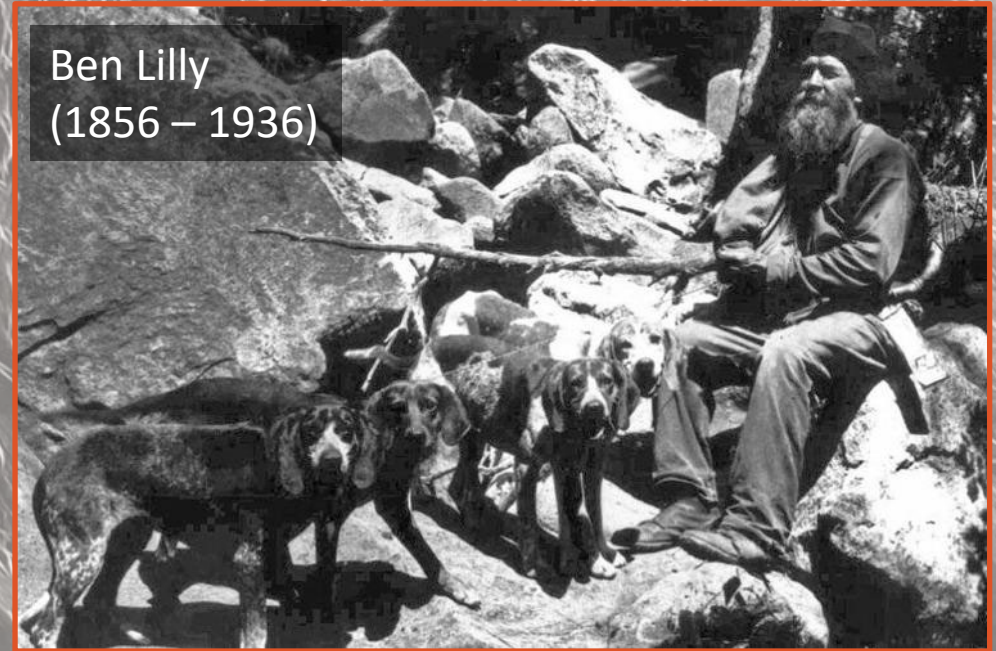
Engagement Deterrents  
*Livestock compensation* Bear safety workshops  
Private land conservation easements  
Mortality management **Education**  
Public habitat management  
Homeowner outreach *Management removals* *Temporary closures*  
*Carcass composting*  
Conflict response *Incentive programs* Hunter education  
*Bear resistant infrastructure*  
Securing attractants  
Garbage management  
Monitoring and science *Law enforcement*  
*Bear spray training* *Hunter bear ID training*  
Relocation **Food storage orders**  
*Bear Smart Communities* **Electric fencing**  
Highway crossings *Ordinances*  
*Carcass removal*



## Themes

- Eradication
- Separation
- Responsibility

# Total Eradication

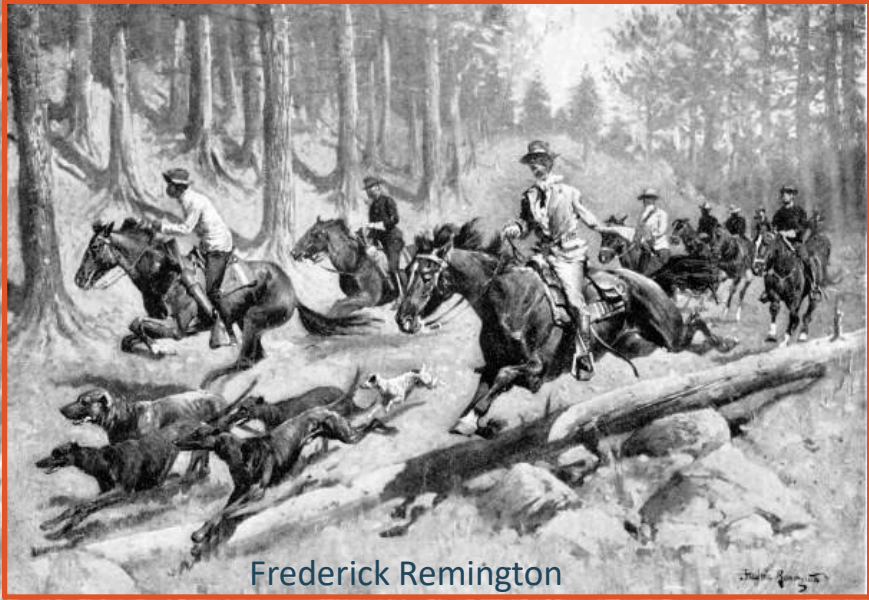


Ben Lilly  
(1856 – 1936)

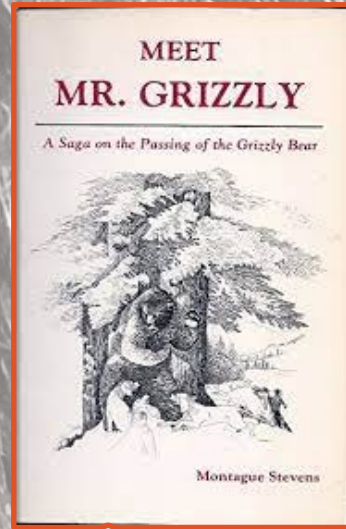
“The destruction of these grizzlies is absolutely necessary before the stock business in the region could be maintained on a profitable basis.”

Vic Culberson, GOS Ranch, New Mexico  
1931

# Total Eradication



Frederick Remington

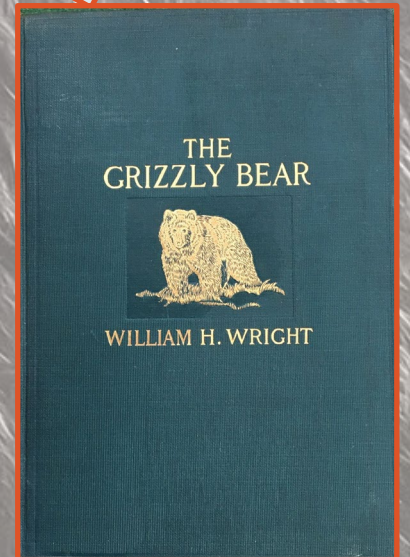


...I derived some consolation from the fact that there were few grizzlies left to hunt...and I had already had my full share of them...I became a zealous convert to their preservation, to prevent so noble an animal becoming extinct."

Montague Stevens  
Meet Mr. Grizzly, 1943

"I had studied the grizzly to hunt him...I came to hunt him in order to study him...I laid aside my rifle...and undertook to photograph him."

William H. Wright  
The Grizzly Bear , 1909



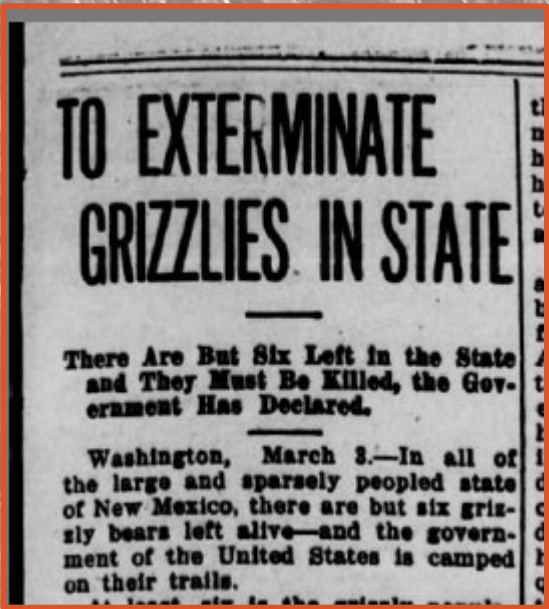
# Total Eradication



“They had no rest and no peace and now they have faded from the picture. Hail the White Man! The King of Killers.”

Samuel Hubbard  
 Oakland Tribune, 1928

Granted game status :  
 Montana 1923  
 New Mexico 1927



100	
11	Extinction Of Grizzlies Feared
11	
64	By Foresters
440	
158	
6	MISSOULA, Mont. (AP) —Most people who have met a grizzly bear on a mountain trail, and lived to tell about it, agree that the animal is perfectly capable of taking care of itself.
67	
195	The United States forest service has reported otherwise. Fearing extinction of grizzlies, service officials have suggested that 300,000 acres of uninhabited primitive country northeast of Missoula be set aside as a grizzly sanctuary.
270	
65	
80	
3	
5	
29	
19	
207	
32	
3	
11	
115	
11	A recent census of grizzlies

# Total Eradication

“Grizzly bears should be removed from parks such as Yellowstone and Glacier which are unsurpassed in eminence as part of our heritage of natural wonders and are ideal for the family hiking and comparing which are traditional in them.”

Gairdner B. Moment  
BioScience, 1969

# Total Eradication

- *I think grizzly bears should not be anywhere in Montana*  
(3% agreed/strongly agreed)
- *Grizzly bears have a right to exist in Montana*  
(4% disagreed/strongly disagreed)
- *I think grizzly bears do not belong where people recreate*  
(17% agreed/strongly agreed)





# Montanans showed positive attitudes about grizzly bears

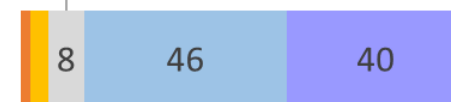
- ▶ *Grizzly bears have a right to exist in Montana* (92% agreed/strongly agreed)
- ▶ *Grizzly bears are beautiful animals* (89% agreed/strongly agreed)
- ▶ *Grizzly bears are part of what makes Montana special* (85% agreed/strongly agreed)
- ▶ *It is important to maintain a self-sustaining grizzly bear population in MT* (75% agreed/strongly agreed)



# Separation between Humans and Grizzly Bears

*How acceptable or unacceptable is it to you to have grizzly bears living in the following areas in Montana?*

Primarily forested areas that are mostly publicly owned



Areas with a mix of forest, open land, agriculture and small towns



Areas that are mostly agriculture with small towns



Rural areas on fringes of suburban development



Suburban and urban residential areas



Anywhere grizzly bears become established on their own



Percent of Montanans

Very unacceptable   Unacceptable   Neither   Acceptable   Very acceptable

Note: 5-9% of responses = *I don't know*

# Separation between Humans and Grizzly Bears

“In communities which were settled by stock raisers it was right that the grizzly should be exterminated, but in our millions of acres of *mountain country* there is room for more of these interesting animals.”

William Rush

Montana Wildlife, 1930

“...we must admit that valuable as the grizzly bear is, it cannot be perpetuated in substantial numbers in close proximity with important agricultural activities...its future...will depend upon...a reasonable amount of *wilderness range*.”

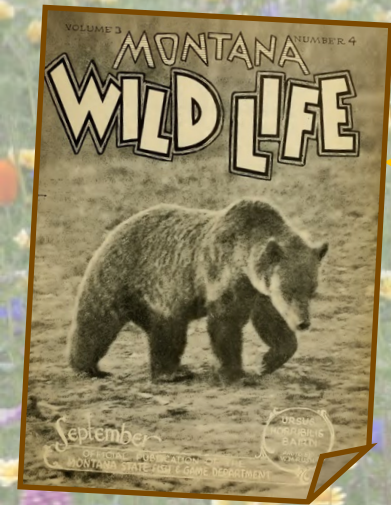
Robert F. Cooney, State Wildlife Restoration Director

1956

“...neither species [humans or grizzly bears] will long endure the other in close proximity.”

Grizzly Bear Recovery Plan

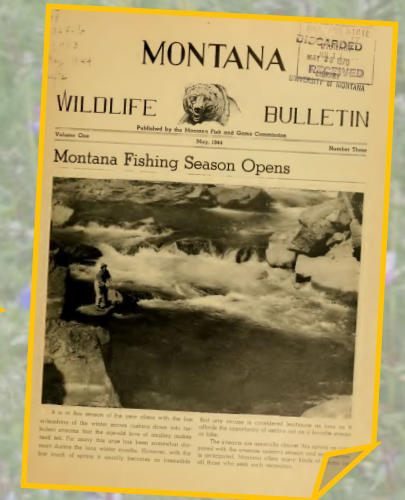
1982



# Separation between Humans and Grizzly Bears

“Quite in contrast to the relatively abundant black bear, the grizzlies tend to *shun man* and his activities.”

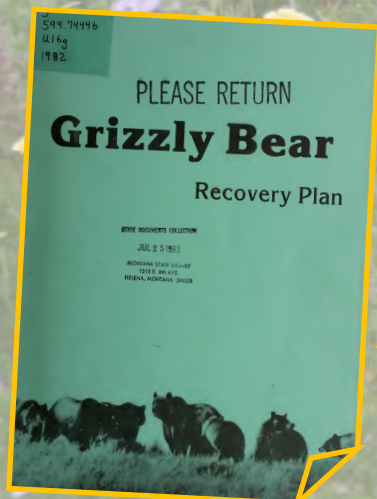
Montana Wildlife Bulletin, 1944

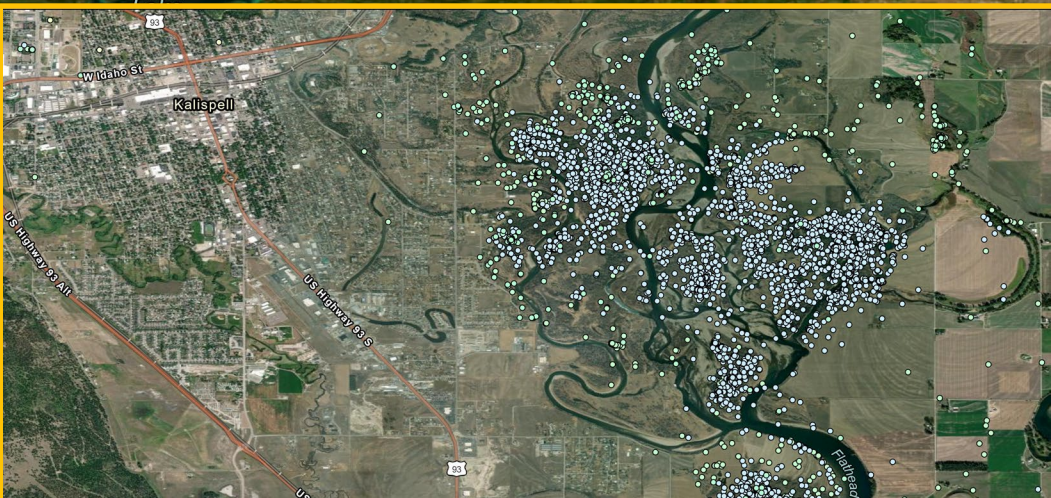
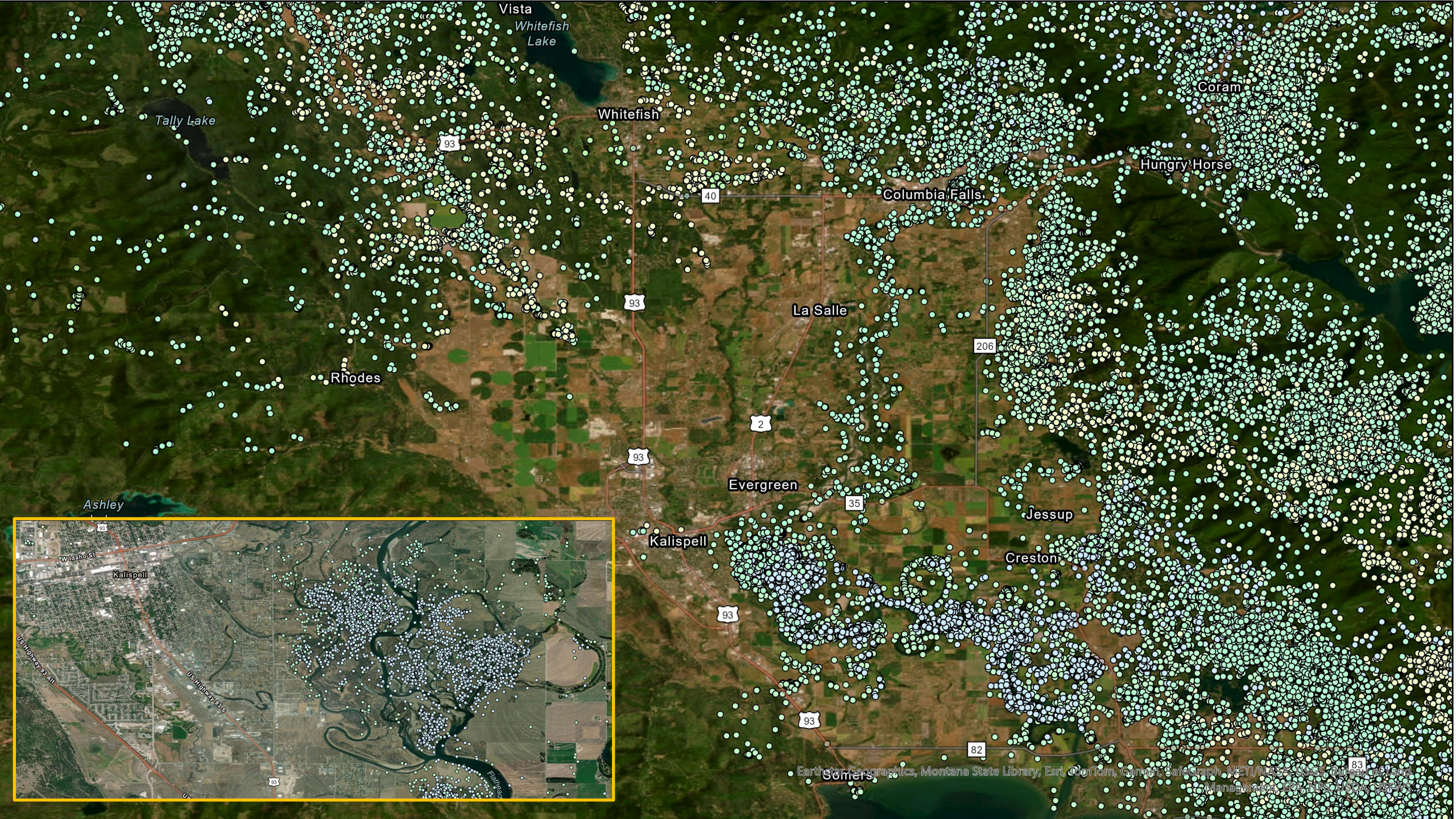


“The grizzly bear is a symbol and living embodiment of wild nature uncontrolled by man. Entering into *grizzly country* presents a unique opportunity – to be part of an ecosystem in which man is not necessarily the dominant species.”

Stephen Herrero  
BioScience, 1970

(& quoted in preface to 1982 Recovery Plan)

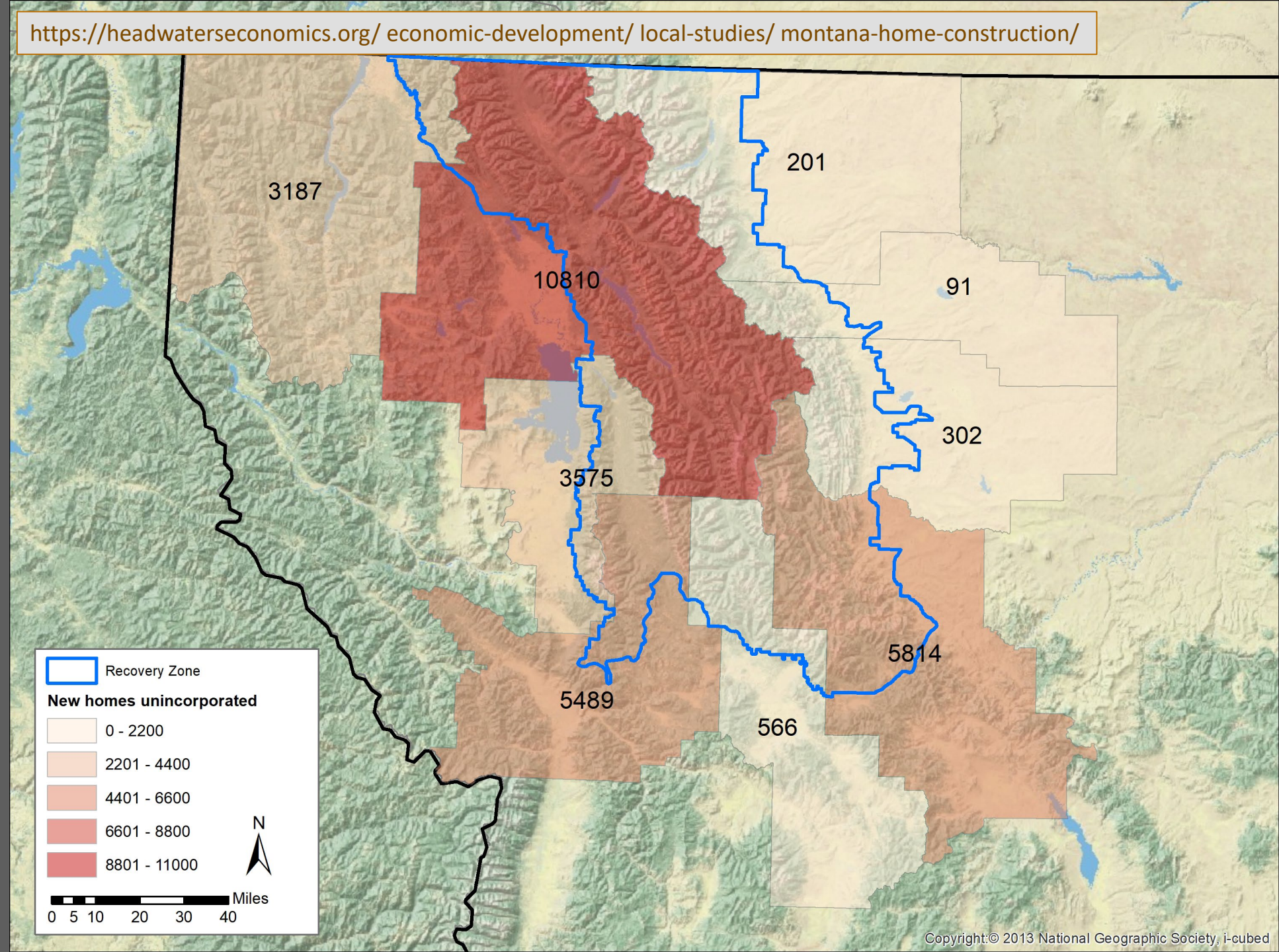




# Losing open space & adding rural residents

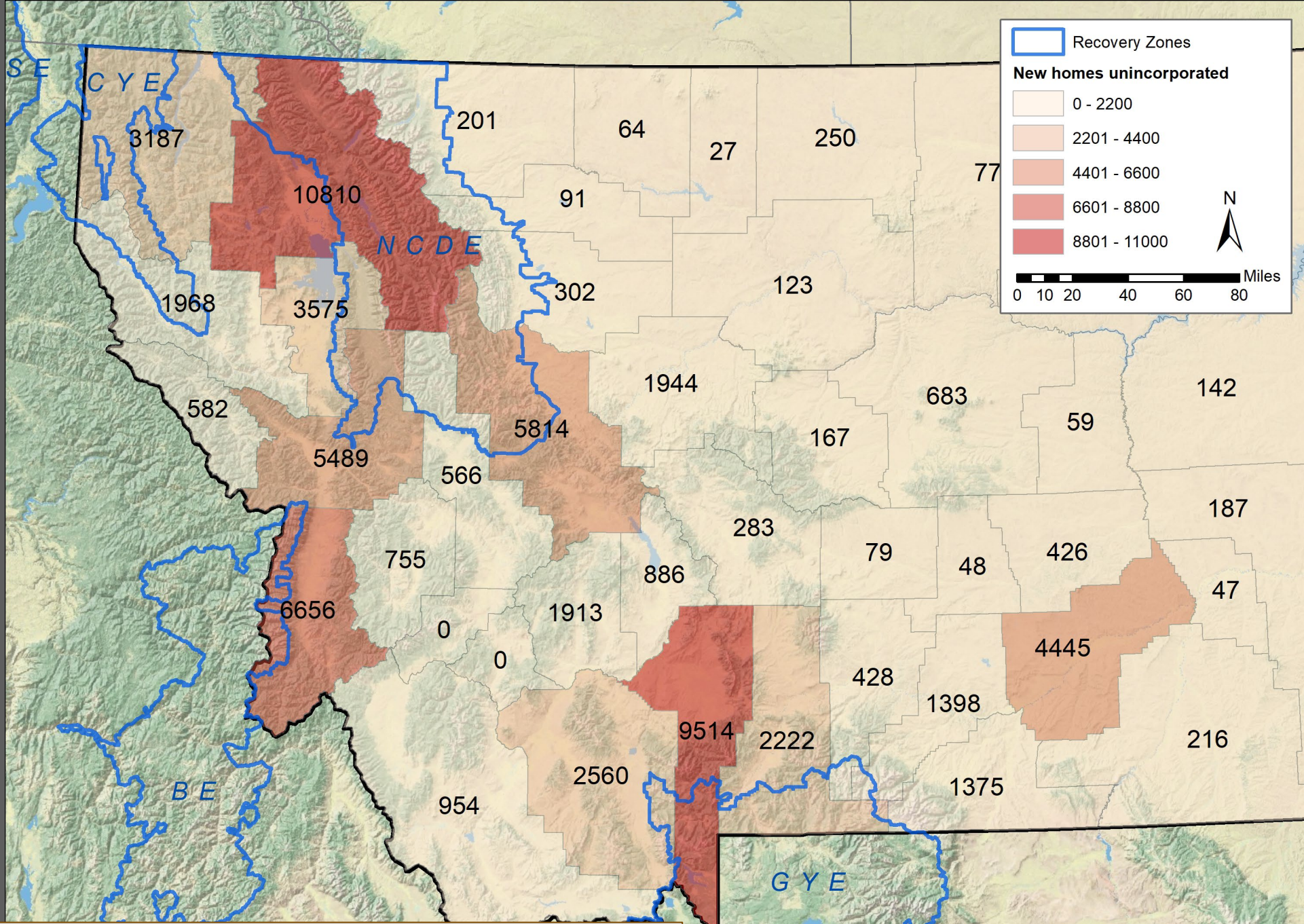
1990 to 2016, in 9 counties surrounding NCDE Recovery Zone:

- ~300,000 acres of open space converted to housing
- ~ 30,000 new homes built outside of incorporated city boundaries



Losing open space & adding rural residents

New housing development highest in many counties important for connectivity



# Who is responsible for conflict?



35 mortality records described as “marauders”  
1971 – 1999

*“to roam in search of things to steal or people to attack”*

- killing sheep, goats, or cattle
- camps, campgrounds, break-ins, developed areas
- chasing/charging people, human fatalities
- no definition
- “...feeding on a sheep killed by coyotes...”
- “...marauding back yard...”

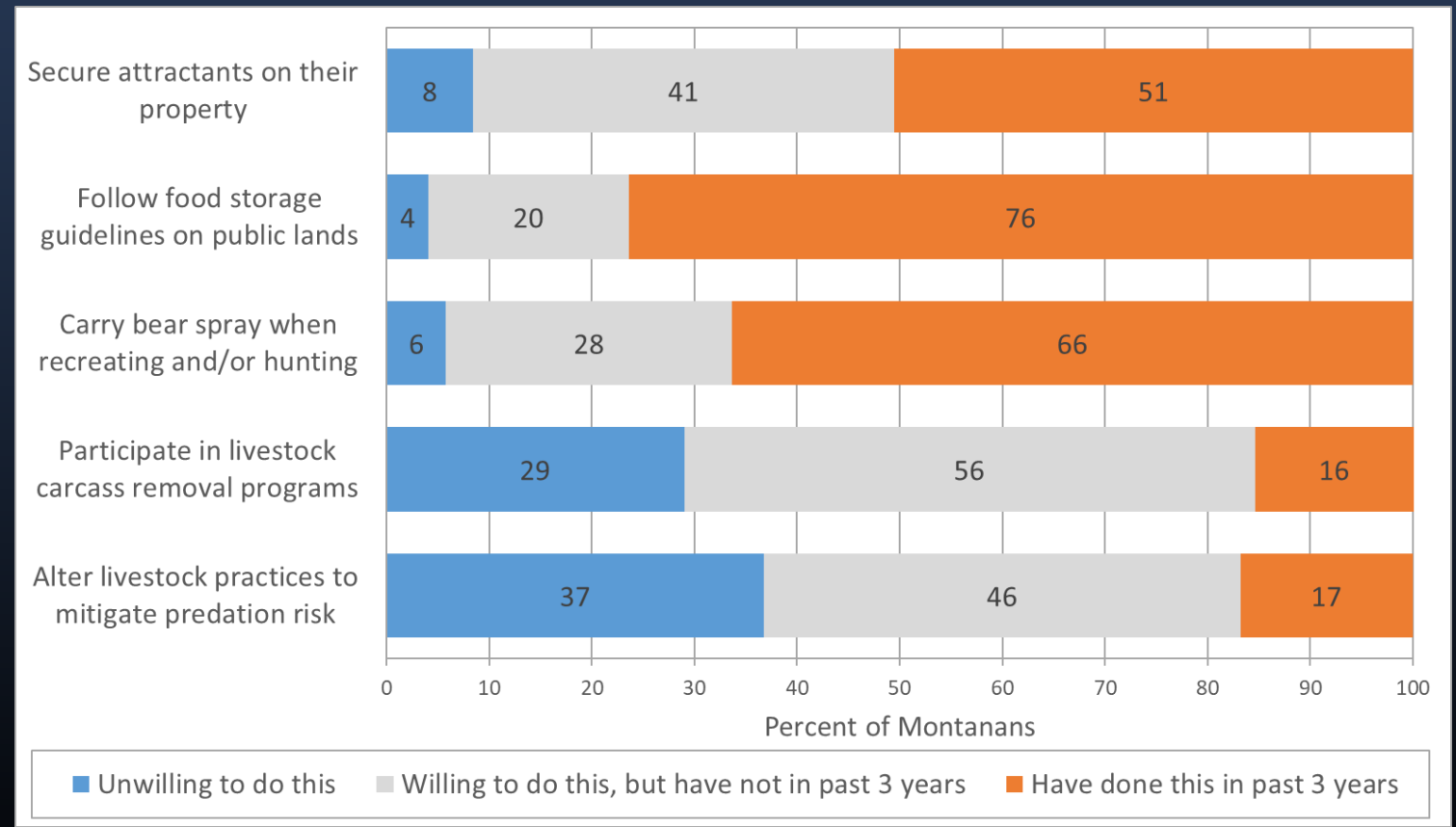


# Who is responsible for conflict?

► A majority (60%) of Montanans agreed/agreed strongly that *people should learn to live with grizzly bears near their home*

- Still, 20% disagreed/disagreed strongly with the statement

► Indicate *previous actions or willingness to take actions to reduce potential for grizzly bear-human conflict...*



# Who is responsible for conflict?



Habituated

Food-conditioned

Attractants, attractant management

# Who is responsible for conflict?



Innovations in tool have also been important





How far have we  
come?

Where do we need  
to go?

# IE&O

Conservation of grizzly bears forces us to contemplate the big questions and the long perspective

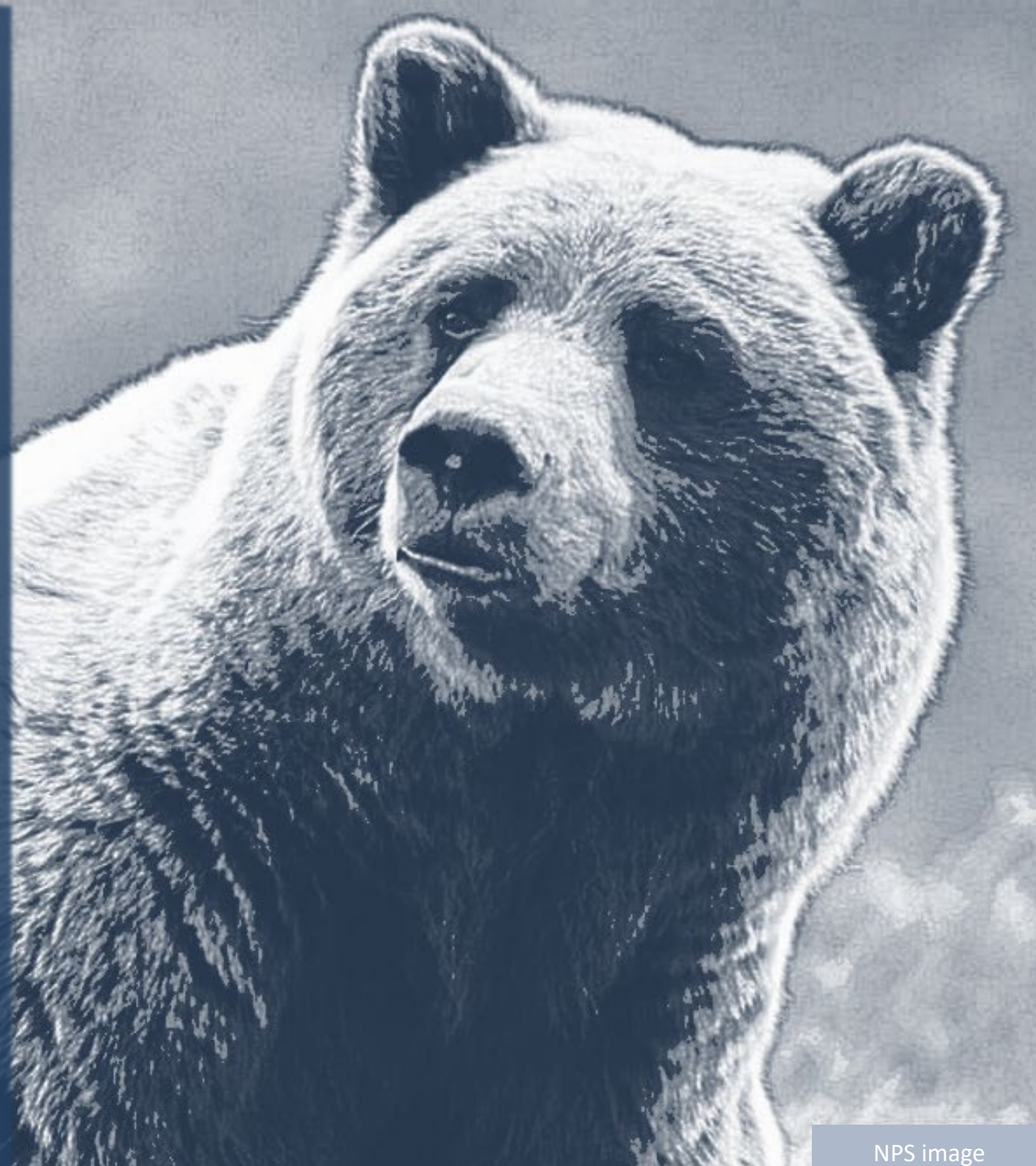
- Why should we live with grizzly bears?



Humans are a part of the ecosphere,  
not separate from it

“Ingrained in each Salish community then is the idea – even older than our indigenous languages – that the people are of the land and the land is of the people. These kindred spirits are alive and inseparable.”

Julian Brave NoiseCat  
The Guardian, 2017



# Questions

