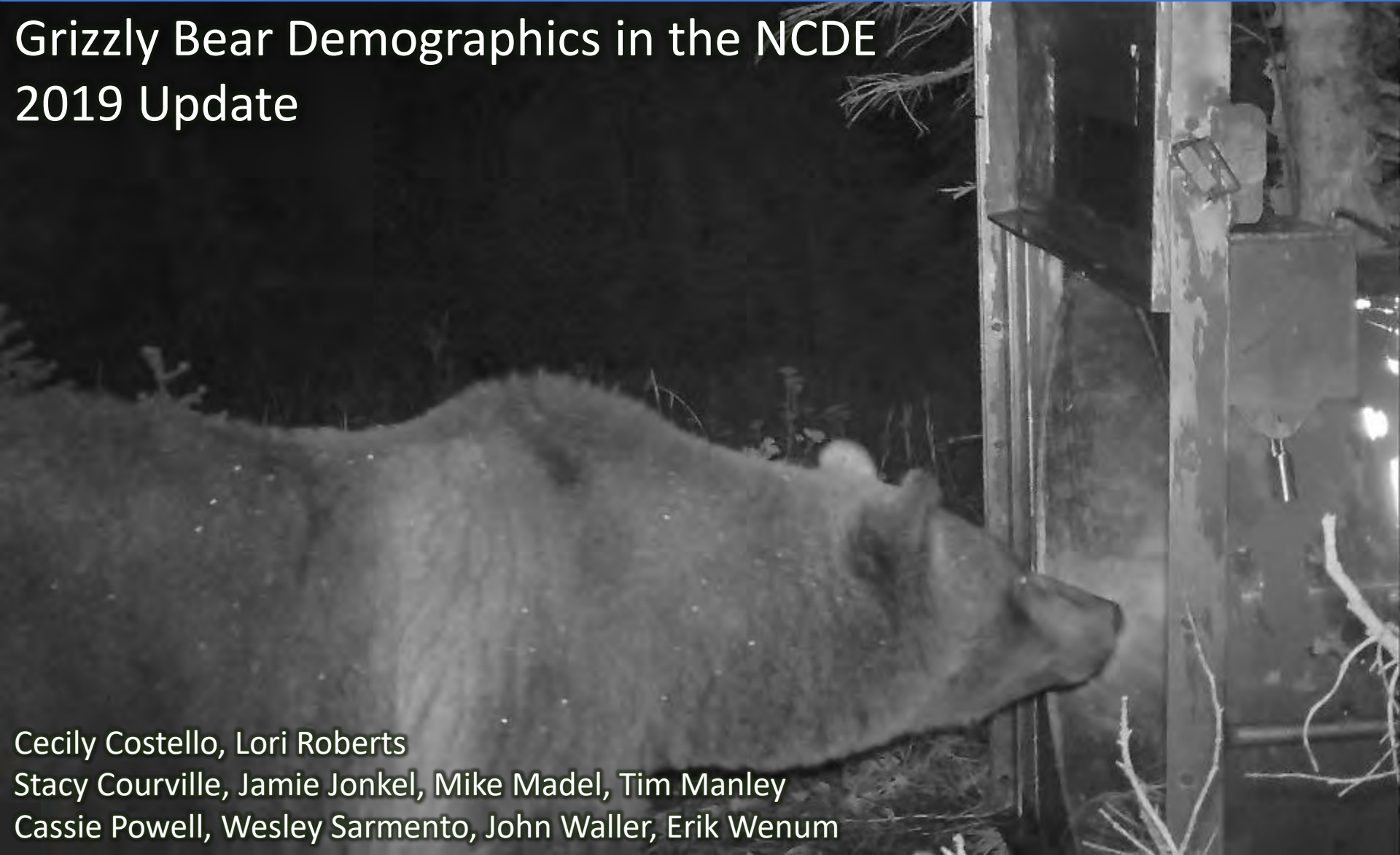




# Grizzly Bear Demographics in the NCDE 2019 Update

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### Wildlife Research

Wildlife research staff conducts rigorous, reliable, relevant, and collaborative science to inform decisions for priority wildlife conservation issues in Montana. We produce credible, sustainable results that are valued by our FWP wildlife conservation team, external colleagues, and the public over the long term.

Research projects that require FWP wildlife resources including data collected by FWP staff must go through a permit/writing review process prior to an exchange of data. Please review the Research Project Approval Policy (RPP) and contact NWFP at [Research@mt.gov](mailto:Research@mt.gov) to request more information and to begin correspondence with the appropriate staff.

Antelope



Grizzly Bear



Beaver



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### Grizzly Bear Research

#### Current Research

- Grizzly Bear Population Monitoring



## Annual report available online

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### Grizzly Bear Population Monitoring

#### Northern Continental Divide Ecosystem

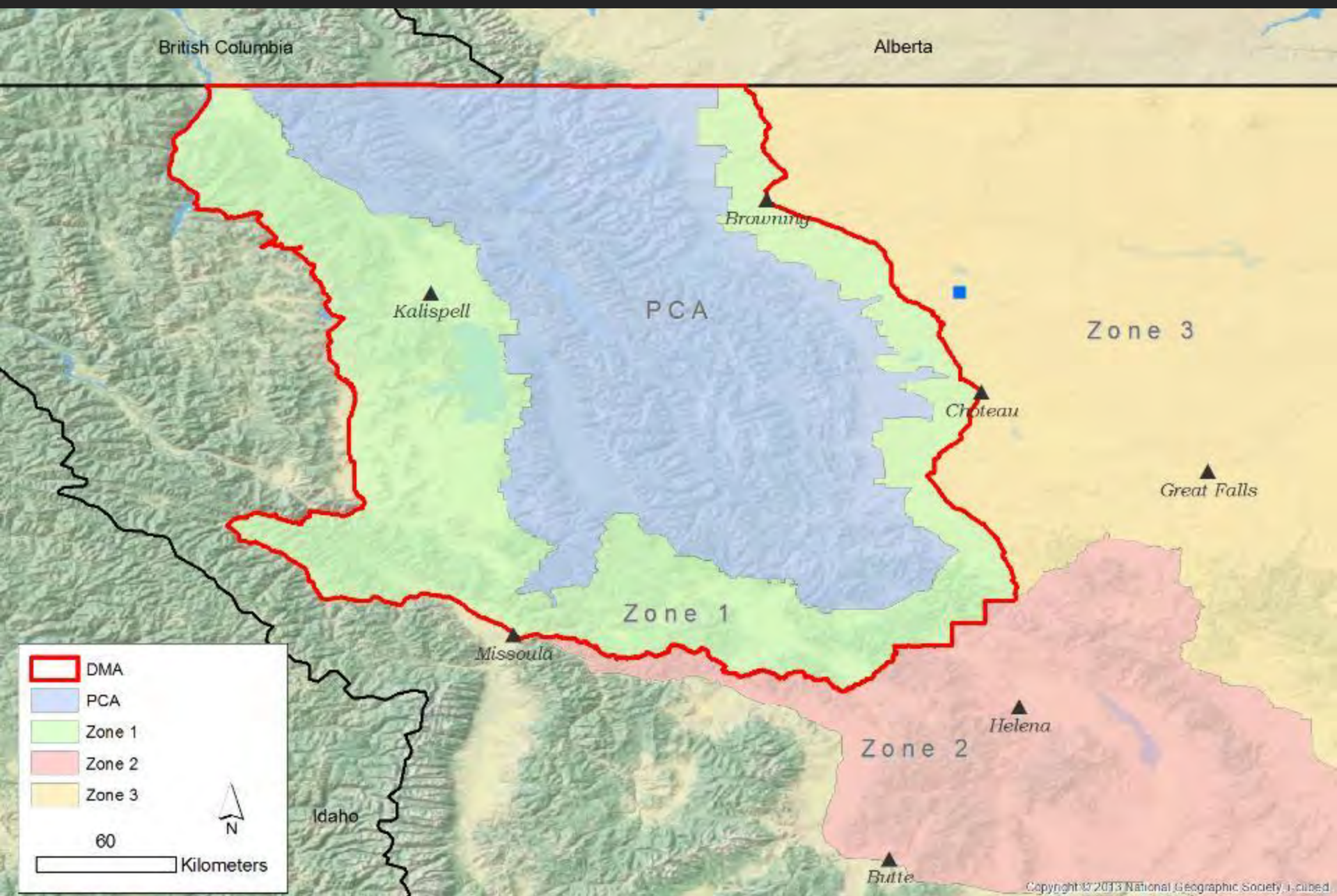
The grizzly bear (*Ursus arctos horribilis*) occupies over 6 million wilderness and non-wilderness acres in the Northern Continental Divide Ecosystem (NCDE) of western Montana. Notable regions within this ecosystem include Glacier National Park and the Bob Marshall wilderness complex. Grizzlies were listed as Threatened under the Endangered Species Act in 1975 for lack of biological information on its population status and habitat requirements. The NCDE is believed to have the largest population in the lower 48 states. It is estimated from a 2004 DNA study that there are over 700 bears in the ecosystem.



Information on both population size and trend are needed. Having estimates of size and trend will greatly improve our collective knowledge of grizzly bear ecology, and provide more measurable and precise information to judge the status of the grizzly population in the NCDE. Therefore, Montana Fish, Wildlife and Parks, in cooperation with other state and federal agencies, initiated a program in 2004 to monitor the population trend of grizzly bears in NCDE. The purpose of this long-term program is to monitor the vital population parameters of grizzly bears by assessing the survival and reproductive rates, and trend. This will be accomplished by radio-monitoring female grizzly bears.

Cooperators	▼
Objectives	▼
Study Area	▼
Methods	▼
Reports	▼
Program Oversight	▼





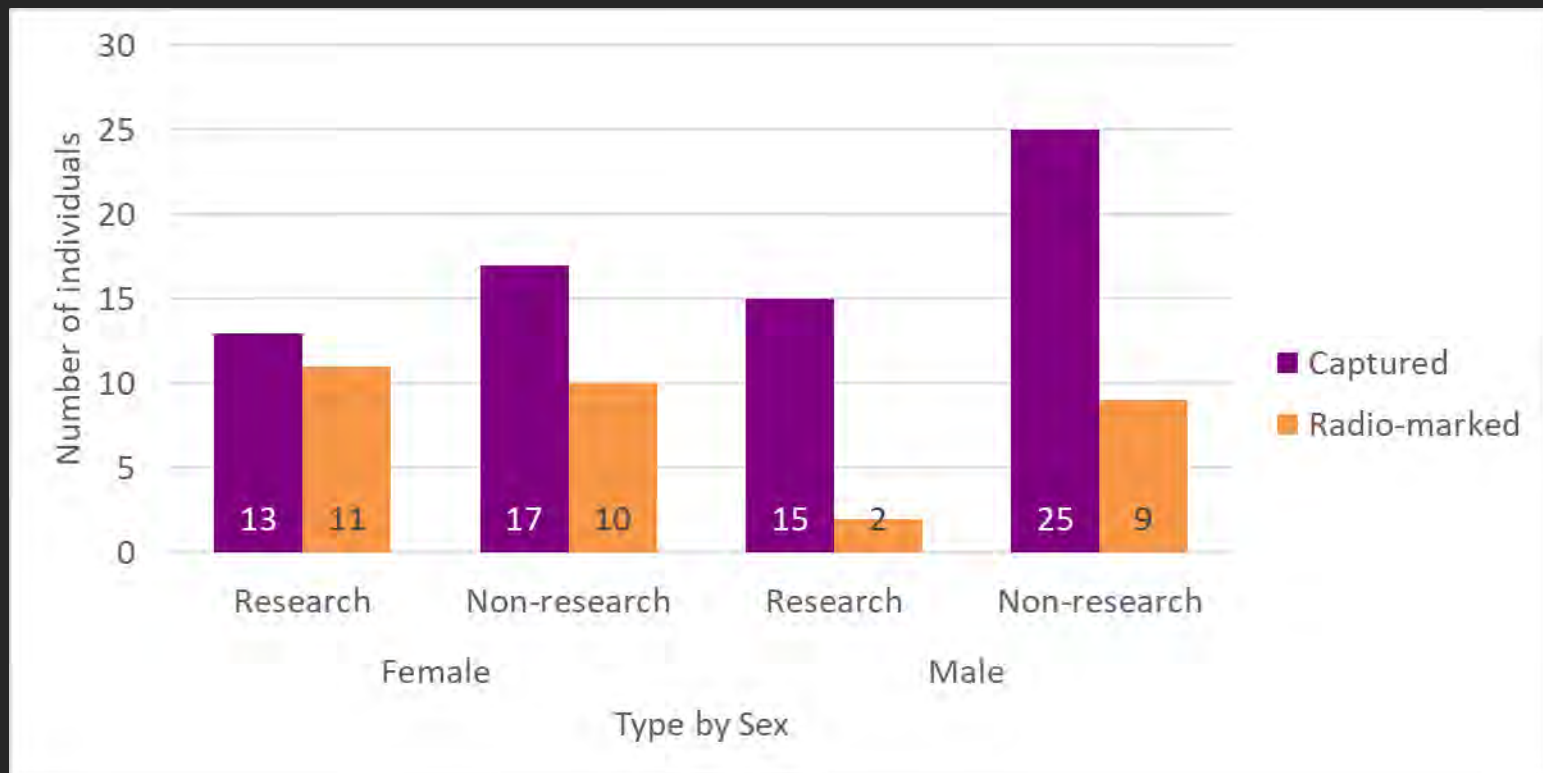
# Field results



- 🐾 Capture
- 🐾 Vital rate monitoring
- 🐾 Mortalities

# Field results

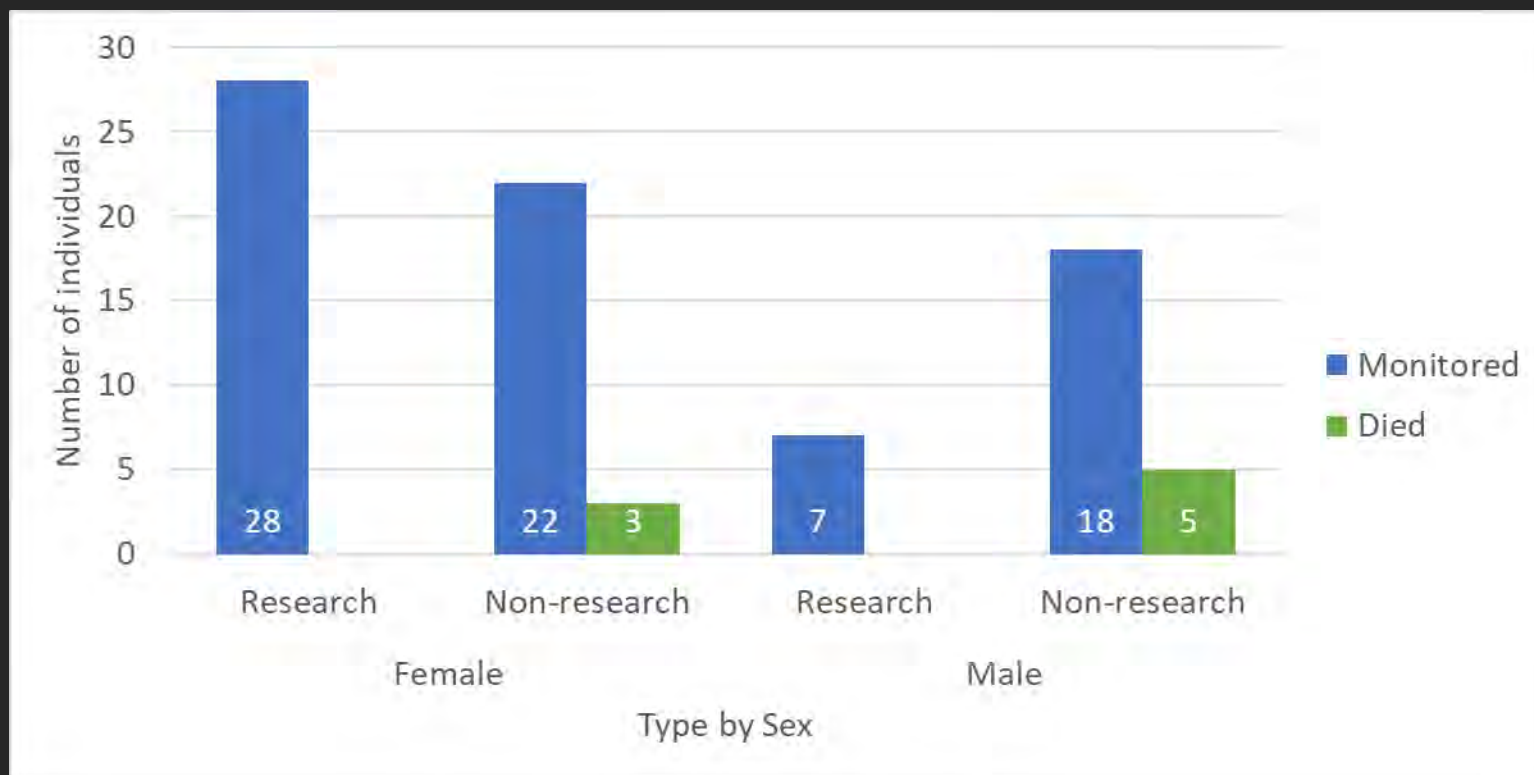
## Captures and radio-collar deployments





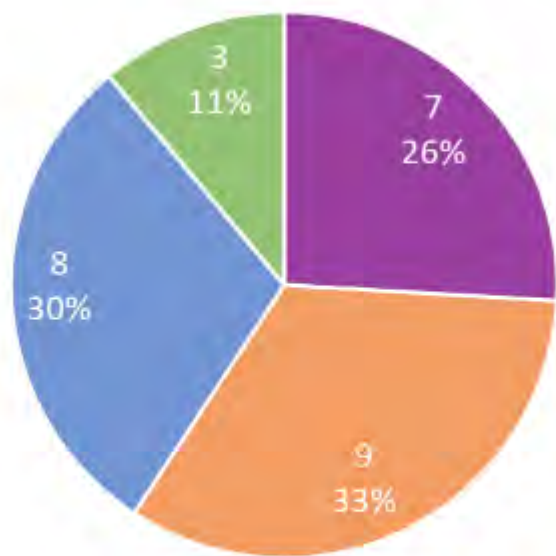
# Field results

## Independent bear survival monitoring *Radio-marked individuals*

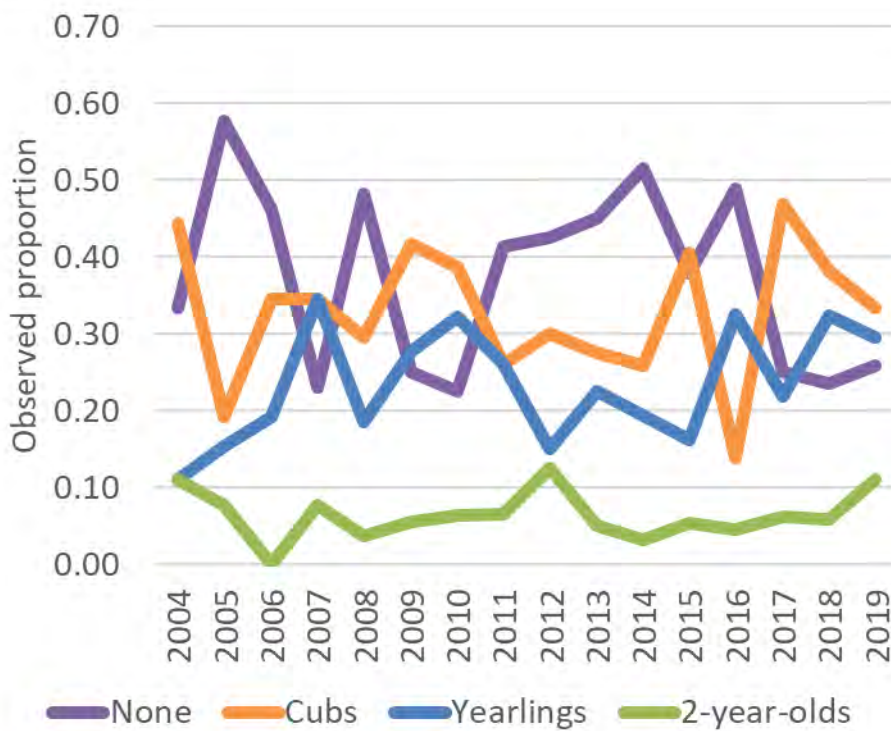


# Field results

## Reproductive status monitoring *Radio-marked individuals*

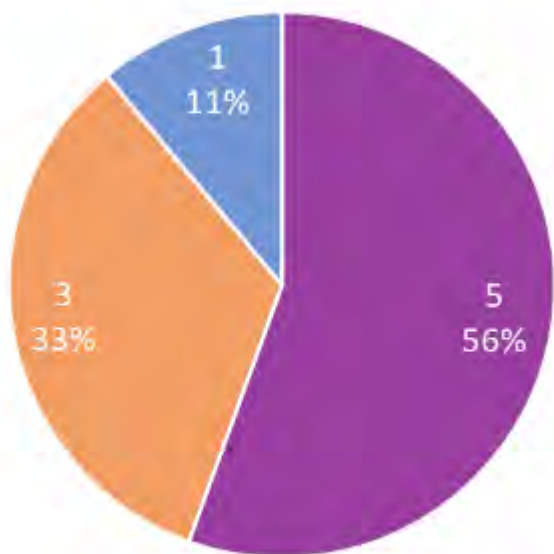


■ None ■ Cubs ■ Yearlings ■ 2-year-olds

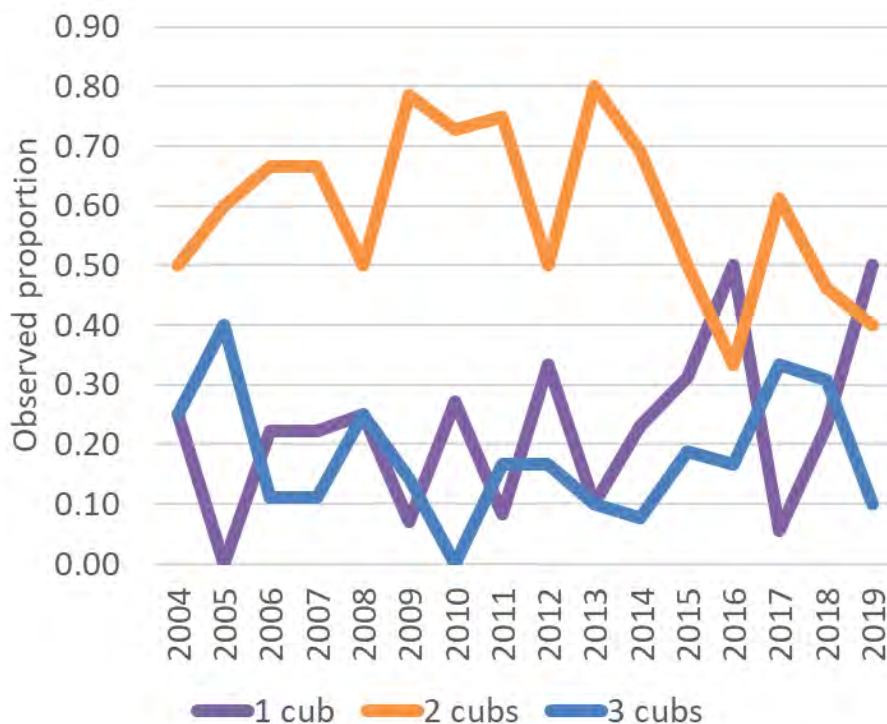


# Field results

## Cub litter size monitoring *Radio-marked individuals*



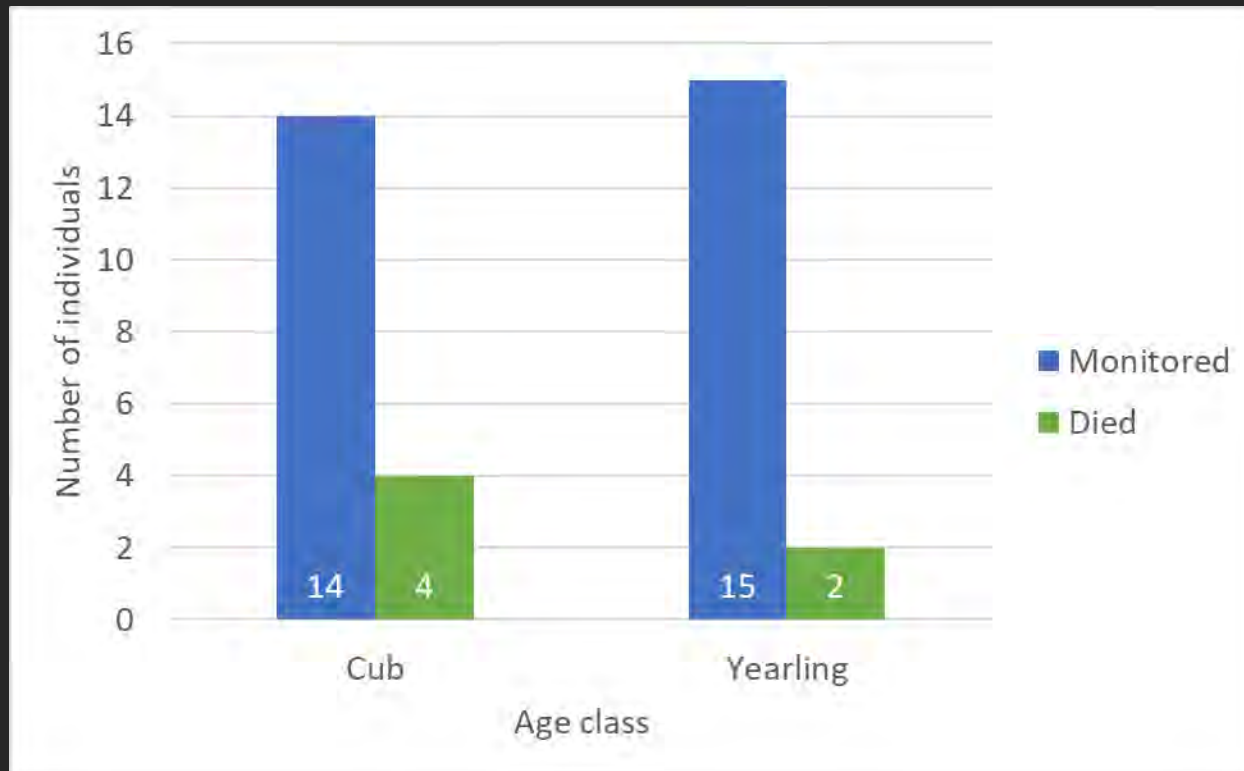
■ 1 cub ■ 2 cubs ■ 3 cubs





# Field results

## Dependent young survival monitoring *Radio-marked mothers*

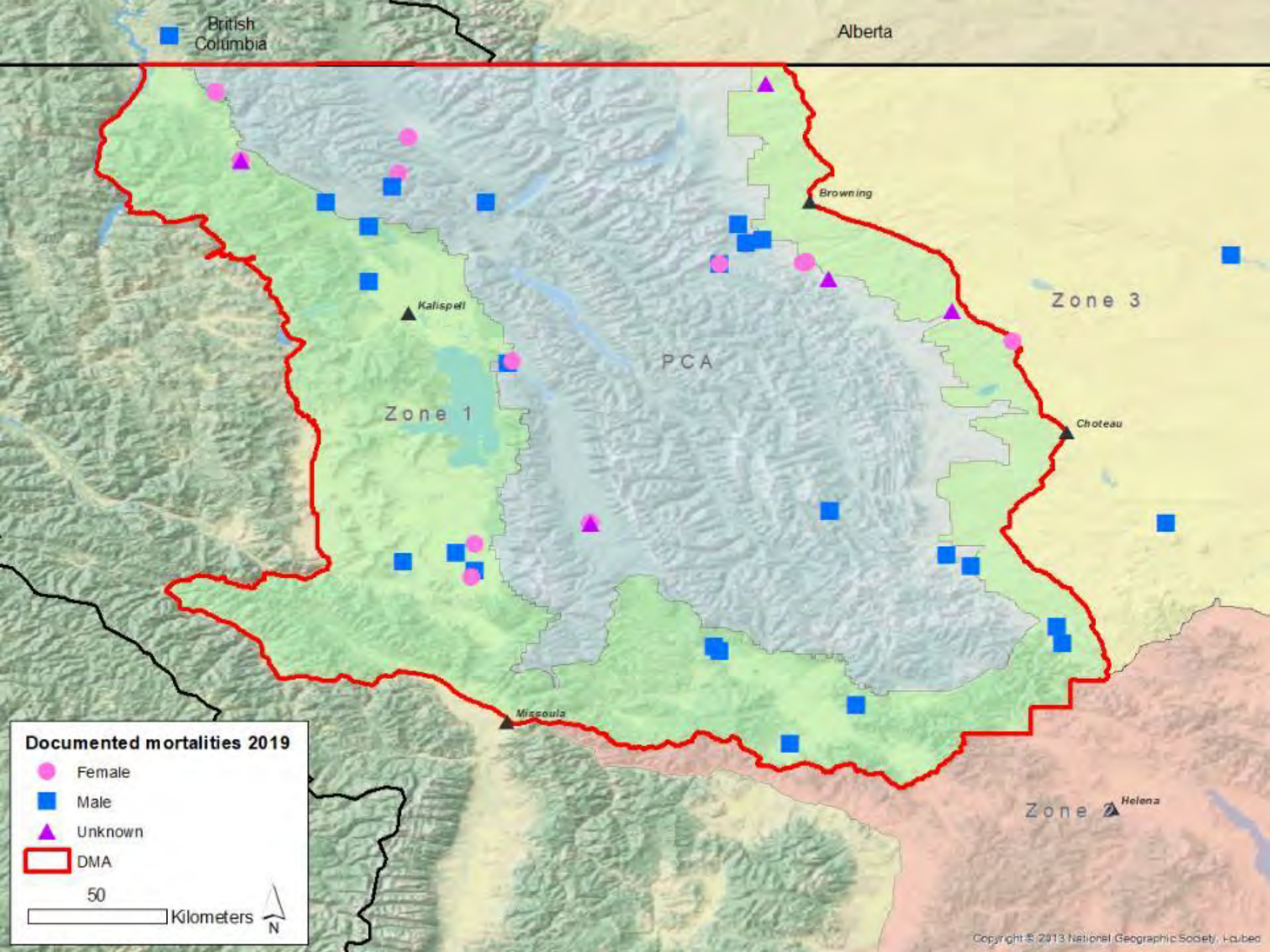


# Field results

## Known and probable mortalities *All age classes/all locations*

	Ageclass	Female	Male	Unknown	Total
Inside DMA	Dependent	7	8	2	17
	Independent	11	15	3	29
	Total	18	22	5	46
Outside DMA	Dependent	1	0	0	1
	Independent	0	4*	0	4
	Total	1	4*	0	5

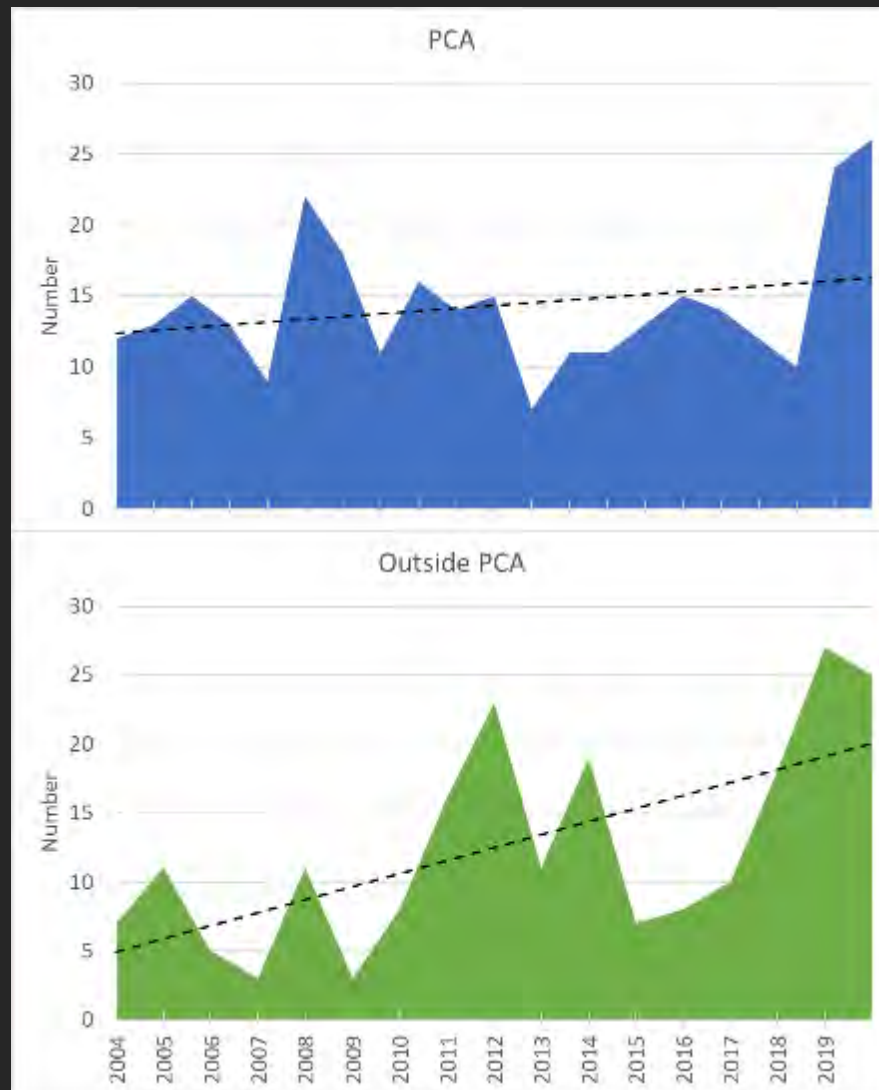
\*2 in Canada





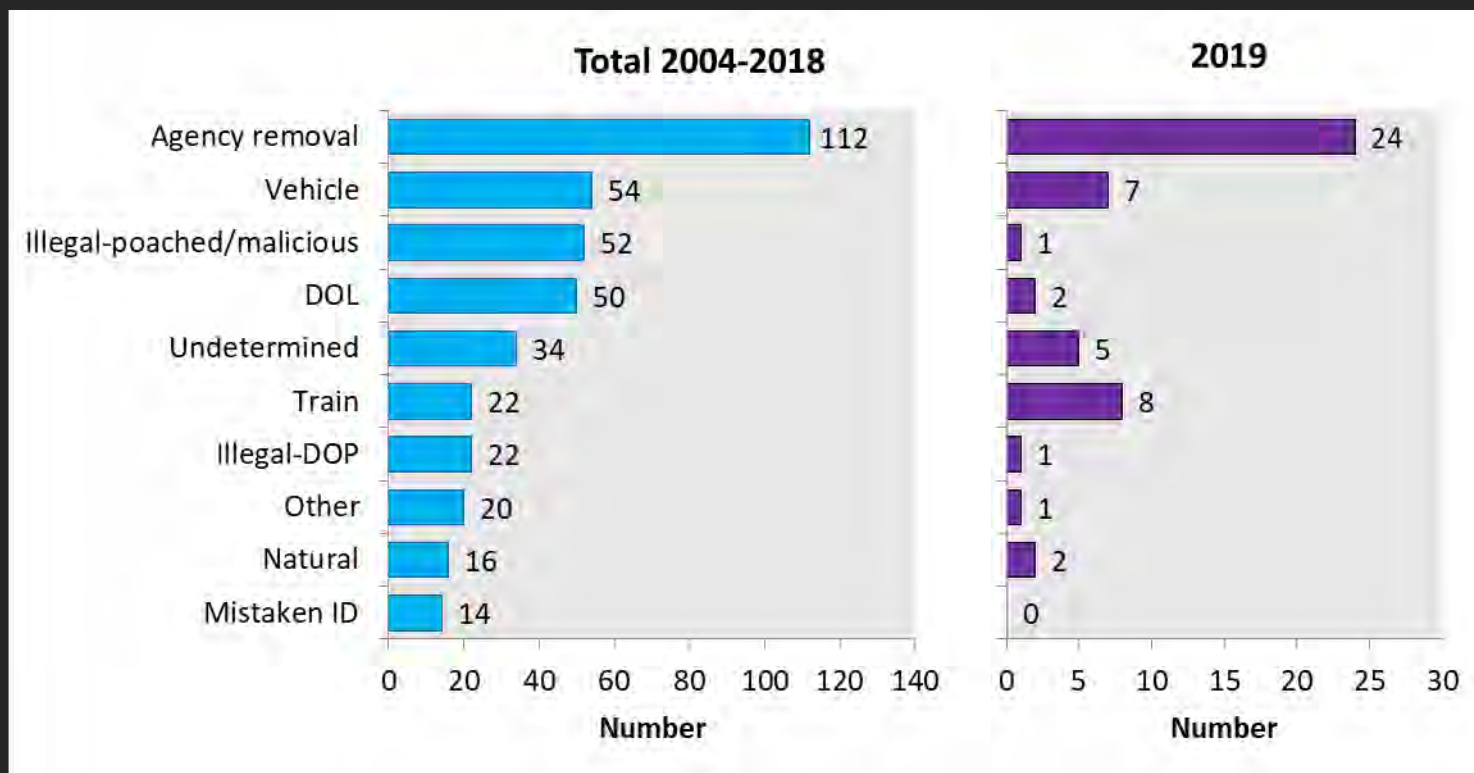
# Field results

Known and probable mortalities  
*All age classes/by zone*



# Field results

## Causes for known and probable mortalities *All ageclasses/all locations*



# Conservation Strategy Objectives



Female occupancy



Independent female survival



Independent female & male mortality



Connectivity monitoring



# Conservation Strategy Objectives

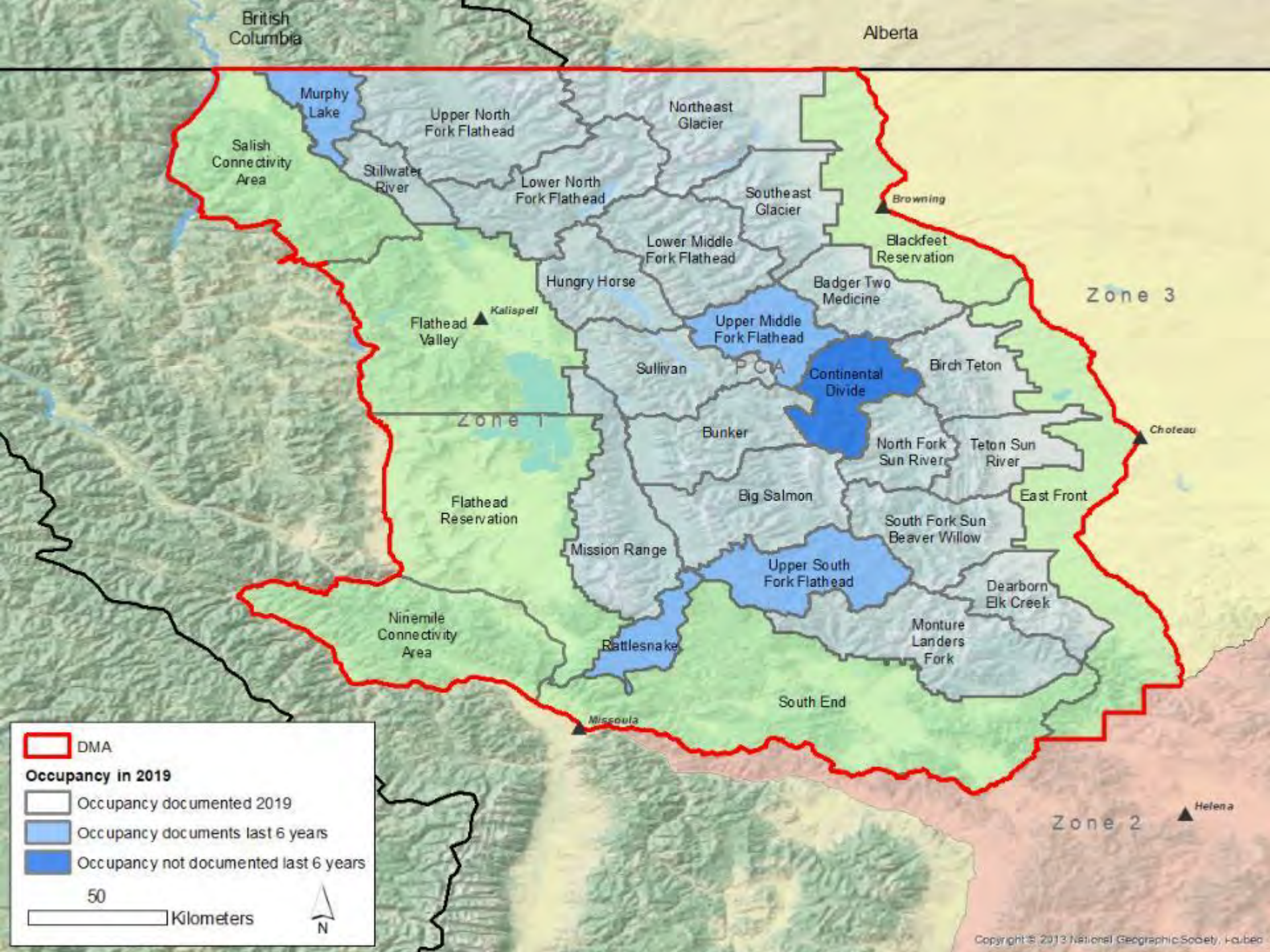
## Occupancy in Primary Conservation Area *Threshold 21 of 23 Units*

Bear Management Unit	2014	2015	2016	2017	2018	2019	6-year tally
Murphy Lake	x			x			x
Upper North Fork Flathead	x	x	x	x		x	x
Northeast Glacier	x	x	x	x	x	x	x
Stillwater River	x				x	x	x
Lower North Fork Flathead	x	x	x	x	x	x	x
Hungry Horse	x	x	x	x	x	x	x
Lower Middle Fork Flathead	x	x	x	x	x	x	x
Southeast Glacier	x	x	x	x	x	x	x
Sullivan	x	x	x	x	x	x	x
Upper Middle Fork Flathead	x	x	x	x	x		x
Badger Two Medicine	x	x	x	x	x	x	x
Mission Range	x	x	x	x	x	x	x
Bunker	x	x	x	x	x	x	x
Continental Divide							
Birch Teton		x	x	x	x	x	x
Big Salmon	x				x	x	x
North Fork Sun River				x	x	x	x
Teton Sun River	x	x		x		x	x
Rattlesnake	x		x				x
Upper South Fork Flathead	x			x			x
South Fork Sun Beaver Willow		x		x	x	x	x
Monture Landers Fork	x	x	x	x		x	x
Dearborn Elk Creek				x		x	x

# Conservation Strategy Objectives

## Occupancy in Zone 1 *Threshold 6 of 7*

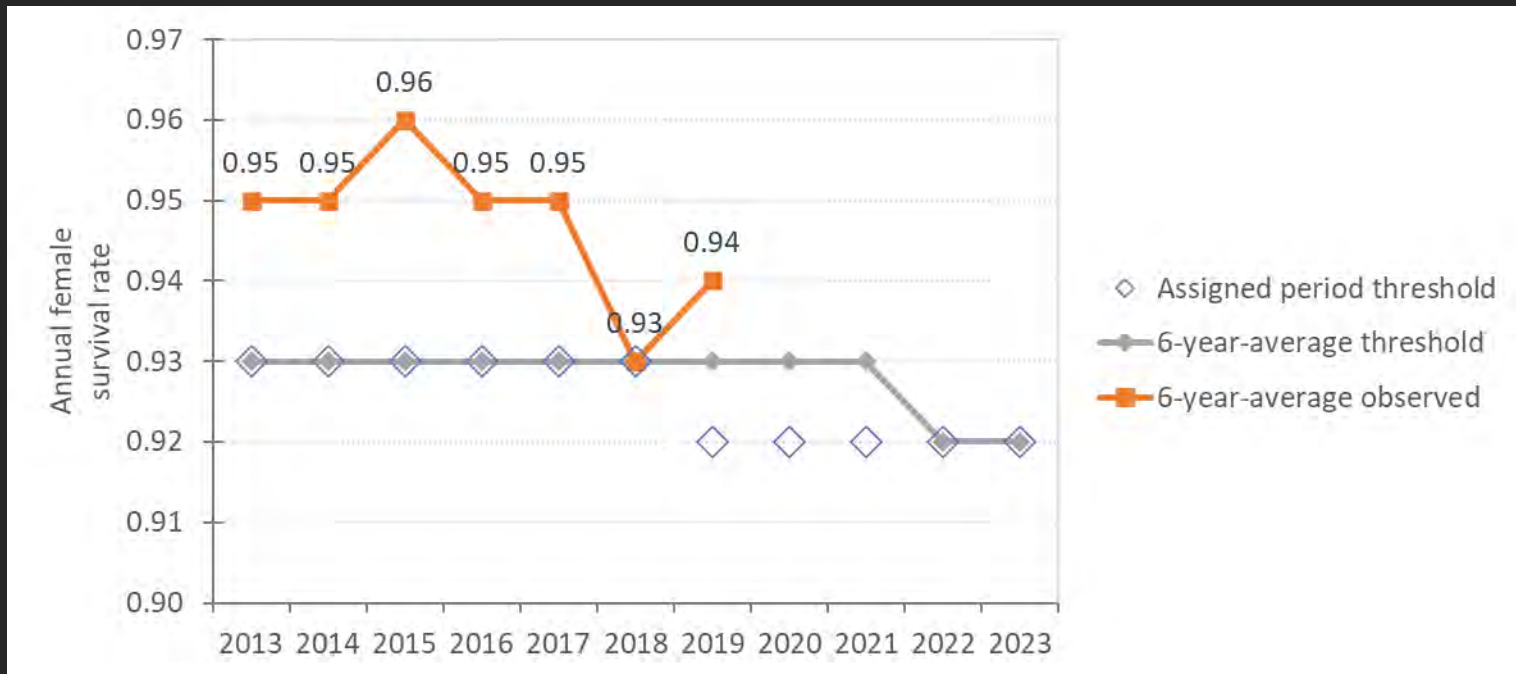
Unit name	2014	2015	2016	2017	2018	2019	6-year tally
Salish Connectivity Area	x		x	x	x	x	x
Flathead Valley	x	x	x	x	x	x	x
Flathead Reservation	x	x	x	x	x	x	x
Ninemile Connectivity Area					x	x	x
South End	x	x	x	x	x	x	x
East Front		x	x	x	x	x	x
Blackfeet Reservation	x	x	x	x	x	x	x





# Conservation Strategy Objectives

Independent female survival  
*Threshold 0.93 (6-year average)*



# Conservation Strategy Objectives

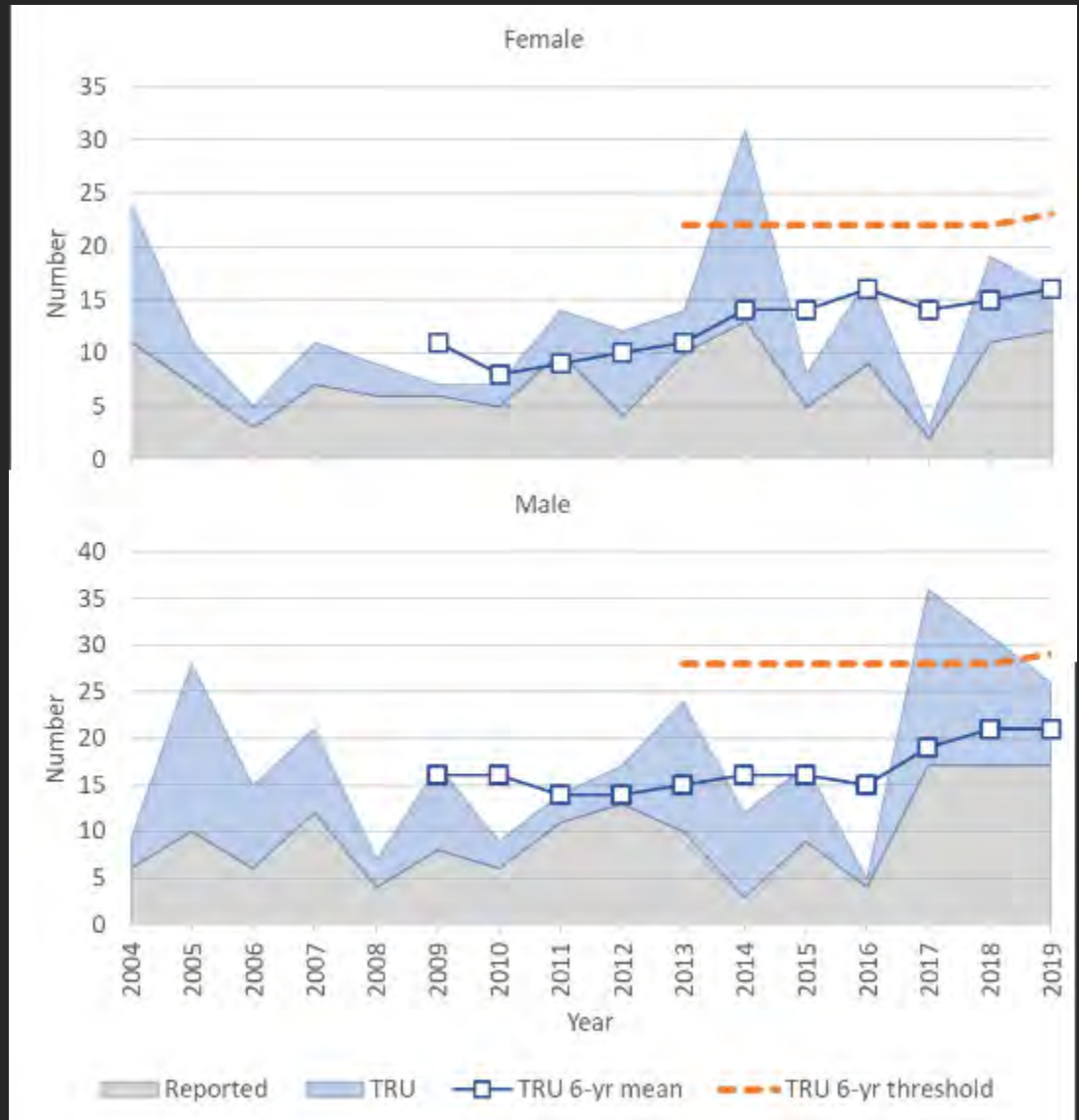
Estimated total reported and unreported mortalities 2019  
*Independent bears inside the DMA*

Sex	Agency removal (A)	Telemetry (B)	Reported	Estimated reported and unreported (C)	Estimated total mortality (A+B+C)
Female	5	1	6*	10	16
Male	11	1	5*	14	26

\*Documented mortalities of unknown sex were randomly assigned:  
1 female and 2 males

# Conservation Strategy Objectives

Independent female  
& male mortality  
*6-year average*





# Conservation Strategy Objectives

## Connectivity monitoring

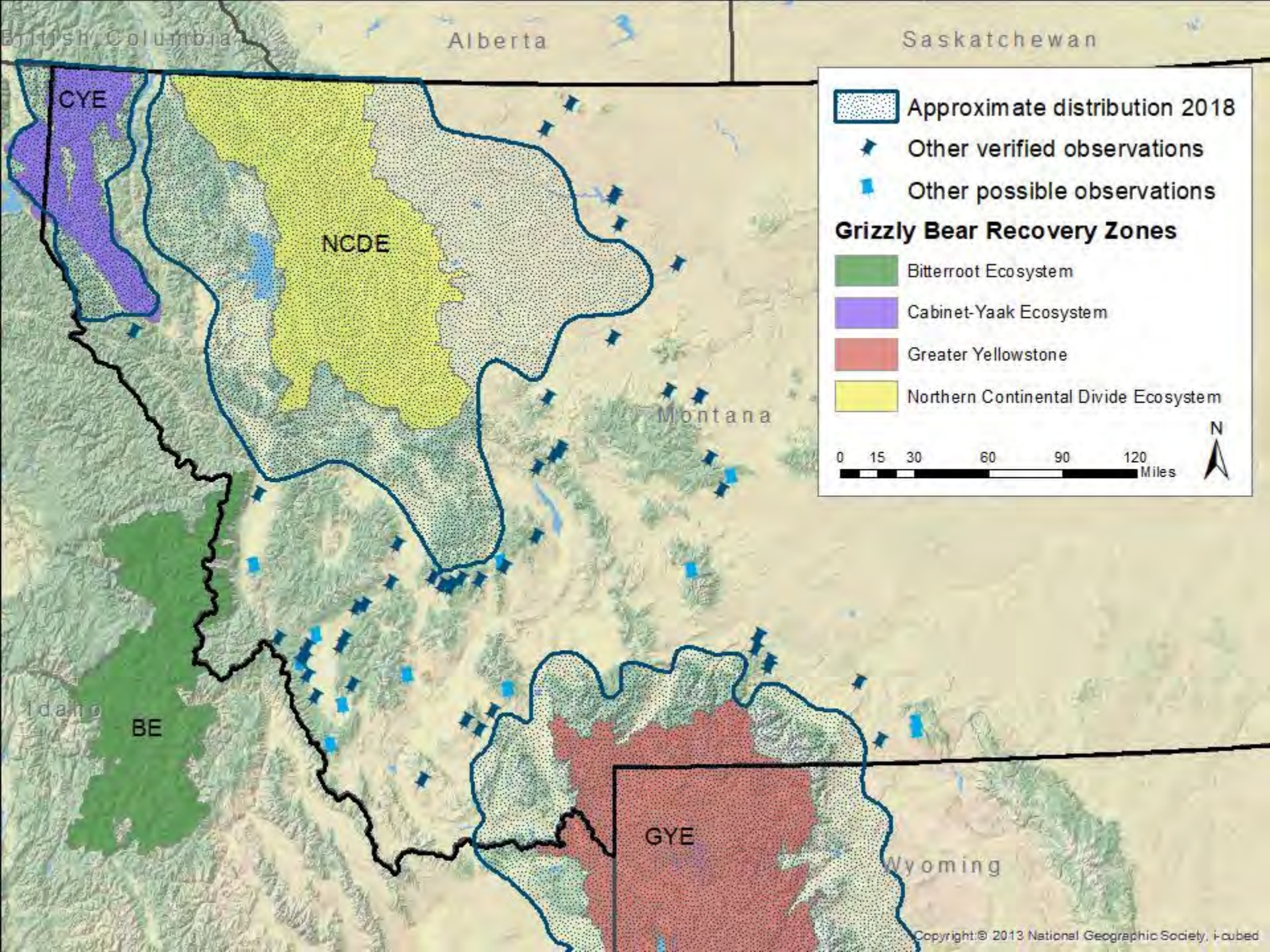


Distribution calculated in 2018, will repeat in 2020



DNA samples analyzed through 2018, no detected immigration into the NCDE from other ecosystems.











# Other Research



-  Integrated population model
-  Human attitudes survey
-  Denning chronology and parturition
-  Range expansion model





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