

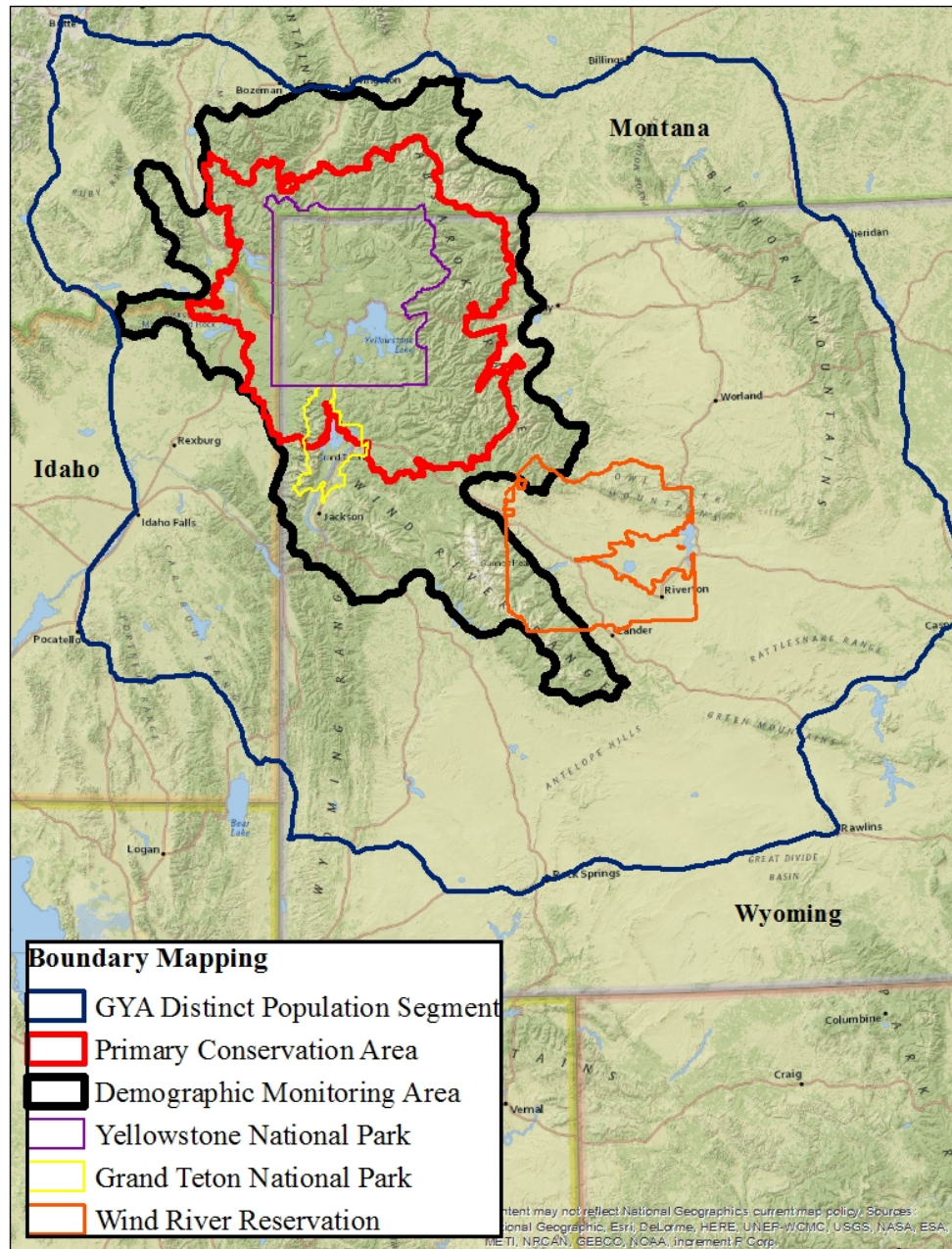
GYE Grizzly Bear

2017 Population – Mortality Update



January 10, 2018

Relevant Boundaries



Outline

- Stepwise progression through Tri-State Memorandum of Agreement (2016 Conservation Strategy, Appendix O) to determine potential allocation of harvest mortality within the DMA
- 5 Step Process:
 1. Calculate 2017 DMA grizzly bear population estimate
 2. Determine maximum allowable mortality limit
 3. Calculate total mortality for 2017
 4. Compare 2017 *total mortality* with 2017 *mortality limit*
 5. Allocate mortality potentially available for harvest by state

Step 1:

Calculate 2017 DMA population estimate (Chao2 estimator)

Population segment	Estimate	95% confidence interval	
		Lower	Upper
Independent females (≥ 2 yrs old)	250	199	301
Independent males (≥ 2 yrs old)	250	195	305
Dependent young (cubs and yearlings)	217	196	234
Total	718	640	796

Step 2:

Determine Maximum Allowable Mortality Limits (2016 Conservation Strategy, Table 2)

- 2017 DMA Estimate = 718 grizzly bears



	Total Grizzly Bear Population Estimate		
	≤674	675-747	>747
Total mortality rate for independent <u>FEMALES.</u>	<7.6%	9%	10%
Total mortality rate for independent <u>MALES.</u>	15%	20%	22%
Total mortality rate for dependent young.	<7.6%	9%	10%

Step 3:

Calculate Total 2017 DMA Grizzly Bear Mortality Estimate

Cohort	2017 Population Estimate	Known/Probable Mortalities ^a	Unknown/Unreported Mortalities ^b	Estimated Total Mortality (a + b)
Independent Aged Females	250	11	9	20
Independent Aged Males	250	20	13	33

Step 4:

Compare 2017 Mortality to 2017 Mortality Limits

Cohort	2017 Population Estimate	Known/Probable Mortalities ^a	Unknown/Unreported Mortalities ^b	Estimated Total Mortality (a + b)	Mortality Limit	Mortality Threshold
Independent Aged Females	250	11	9	20	22.5	BELOW
Independent Aged Males	250	20	13	33	50.0	BELOW

Step 5 (including Steps 1-4): Allocate potential harvest mortality available by State

	<u>2017 DMA Population Estimate</u>	<u>2017 DMA Mortality Thresholds</u>
Independent males	250	50.0
Independent females	250	22.5
Dependent young	217	20
Total	718	

	<u>2017 DMA Grizzly Bear Mortality</u>	<u>2018 Available DMA Harvest Limits</u>
Independent males	33	17
Independent females	20	2.5
Dependent young	12	N/A

	<u>Wyoming (58% of DMA)</u>	<u>Montana (34% of DMA)</u>	<u>Idaho (8% of DMA)</u>
Independent males	9.9	5.8	1.4
Independent females	1.5	0.9	0.2

Discussion

