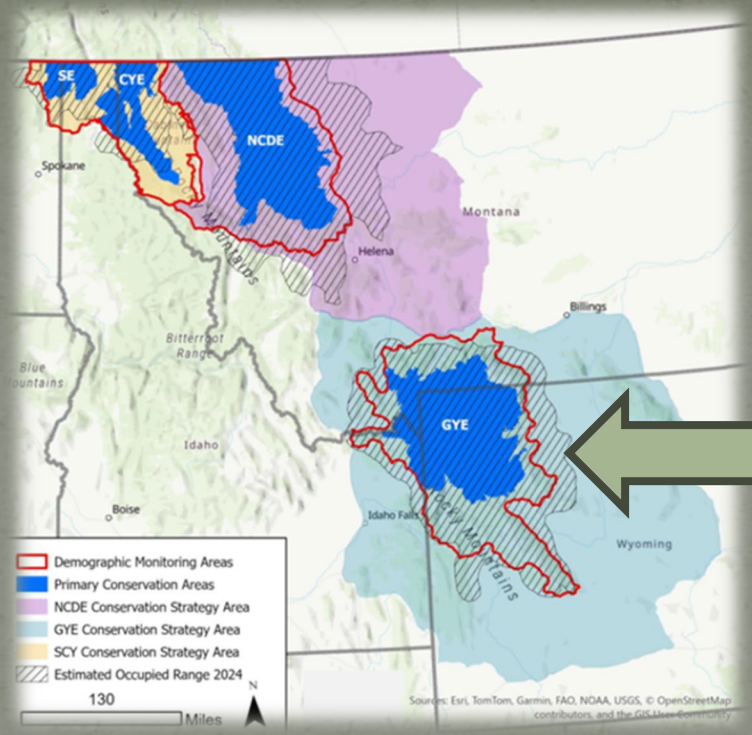


Greater Yellowstone

Yellowstone Conservation Strategy

Dan Thompson, Wyoming Game and Fish Department

Dan Tyers / Andy Pils, US Forest Service

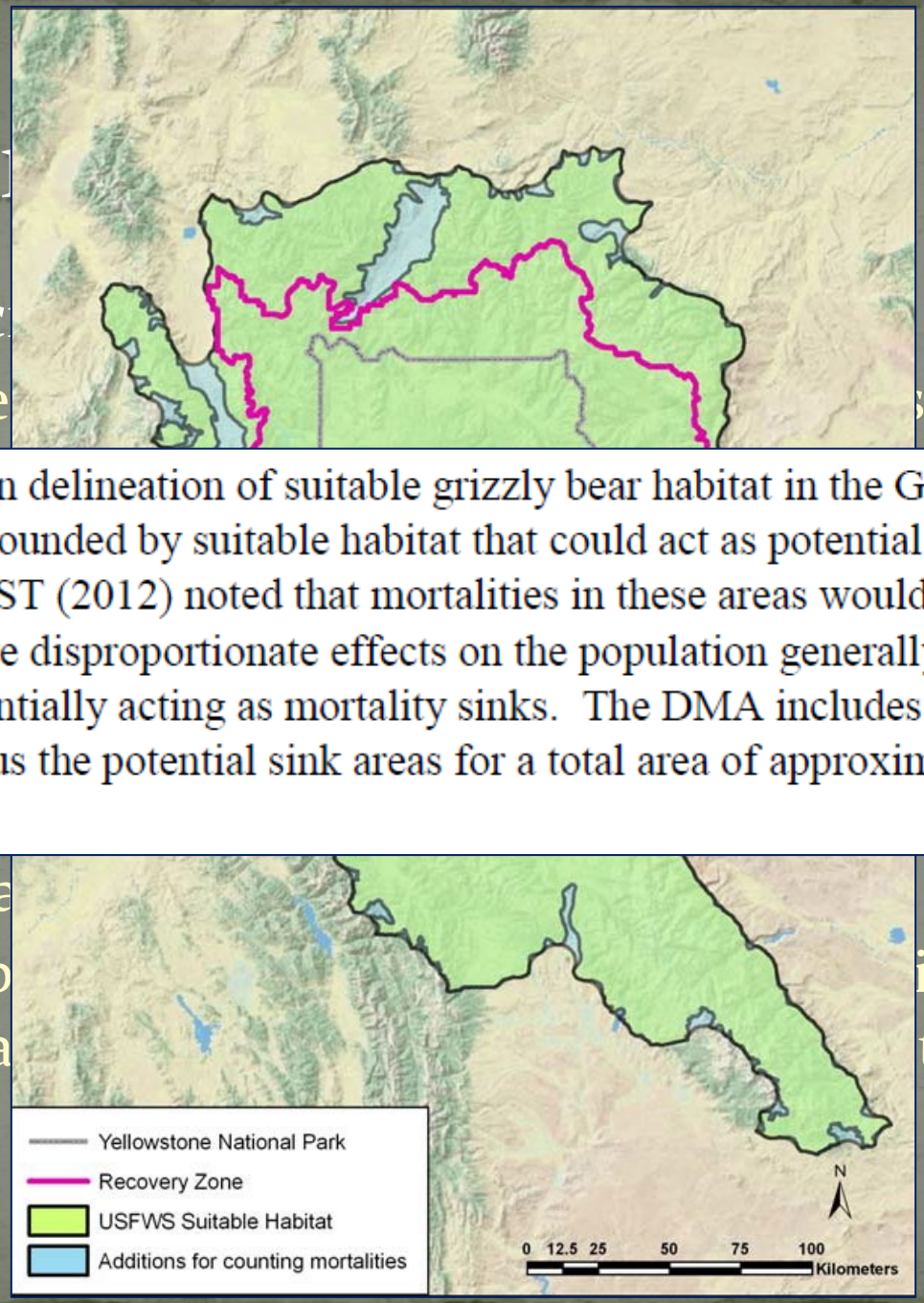
2016 – Incorporating a "Demographic Monitoring Area"

Chapter 2 Population Standards and Monitoring

To maintain a healthy (recovered) grizzly bear population in the GYE, it is necessary to have adequate numbers of bears that are widely distributed with a balance between reproduction and mortality. This section details the population criteria in the *Recovery Plan* that were necessary to achieve recovery, and the population standards necessary to maintain it (USFWS 2017). The Conservation Strategy will continue to assess demographic recovery criteria within the Demographic Monitoring Area (DMA) created by the *Recovery Plan*. Because grizzly bears are a difficult species to monitor and manage, multiple standards with additional monitoring items are identified to provide sufficient information upon which to base management decisions. It is the goal of the agencies implementing this Conservation Strategy to manage the GYE grizzly bear population within the area called the DMA, to ensure a recovered population in accordance with the established Recovery Criteria.

DMA and Sou

- Deriving the DMA c
  - IGBST evaluated re se and suggested
    inc
    inc ted
    int
- GYE g
  - Monitor the popula
  - Emphasize the imp ionship to conflict
    potential/private la table habitat



The DMA is based on delineation of suitable grizzly bear habitat in the GYE, along with narrow areas along valleys bounded by suitable habitat that could act as potential mortality sinks (IGBST 2012). IGBST (2012) noted that mortalities in these areas would be outside suitable habitat but could have disproportionate effects on the population generally contained within suitable habitat, potentially acting as mortality sinks. The DMA includes suitable habitat (46,035 km^2; 17,774 mi^2), plus the potential sink areas for a total area of approximately 49,928 km^2; 19,279 mi^2).

Chapter 2 Post-Delisting Demographic Criteria and Monitoring

Introduction

To maintain a healthy (recovered) grizzly bear population in the GYE, it is necessary to have adequate numbers of bears that are widely distributed with a balance between reproduction and mortality. Because grizzly bears are a difficult species to monitor and manage, this Chapter identifies multiple criteria to provide sufficient information upon which to base management decisions after delisting, and describes monitoring that will occur during—and after—the ESA-required post-delisting monitoring period. The agencies are committed to be responsive to the needs of grizzly bears through adaptive management based on the results of detailed annual population and habitat monitoring.

Post-Delisting Demographic Criteria

- Based on feedback regarding previous recovery/demographic criteria and current proposed management framework, we revised to Demographic Criterion 1 and 2:

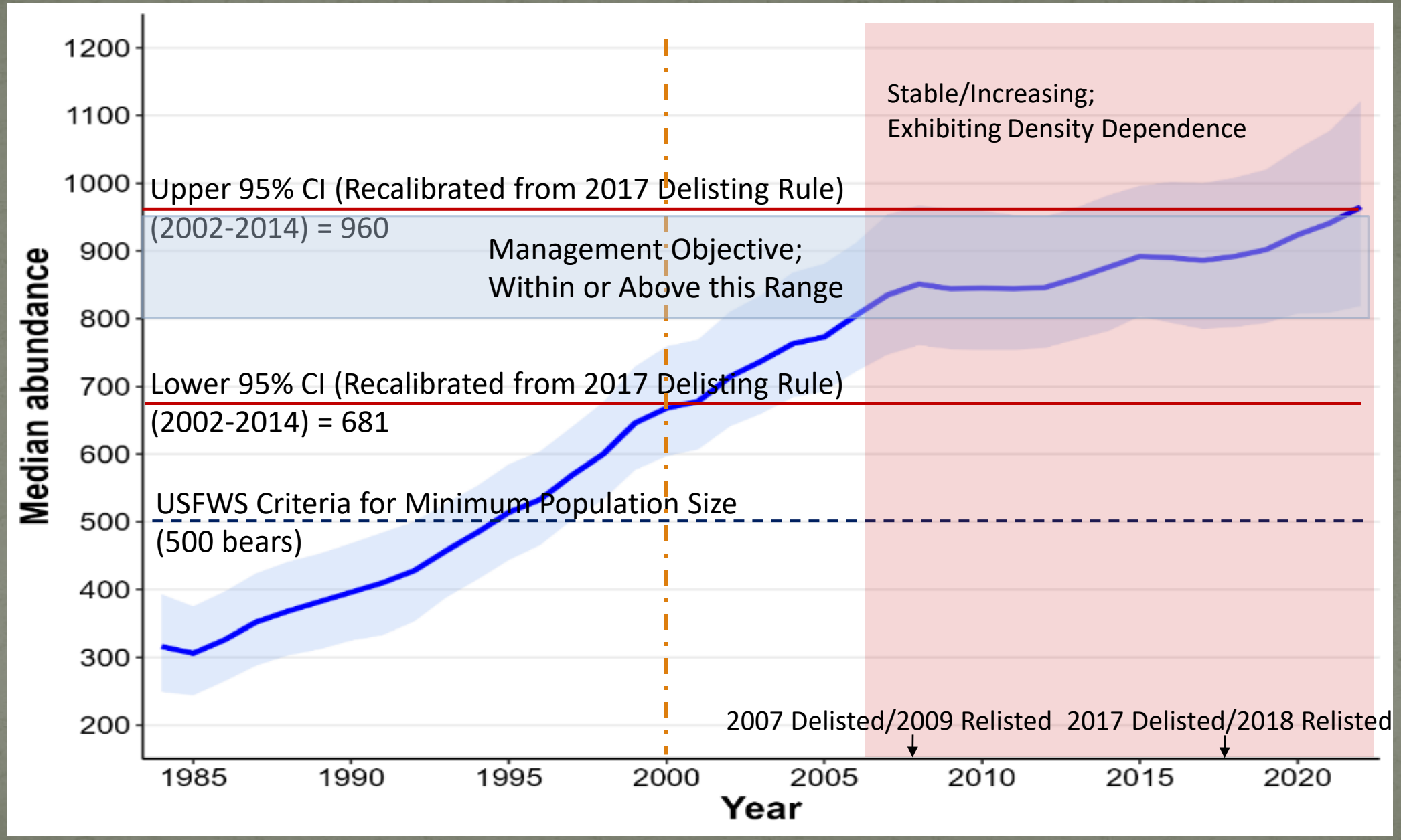
- *Demographic Criterion 1* —Maintain the population within the DMA to within or above a range of 800 to 950 grizzly bears (applying the IPM population size estimate) by determining and applying annual mortality thresholds for independent females and independent males (≥ 2 years old), according to the management framework in Table 2 (see Appendix O).

- *Demographic Criterion 2*—Sixteen of 18 bear management units within the PCA (Figure 2) must be occupied by females with young, with no two adjacent bear management units unoccupied, during a 6-year sum of observations. This criterion is important as it ensures that reproductive females occupy the majority of the PCA and are not concentrated in only one portion of the ecosystem.

Table 2. **Management Framework based on DMA Population Size**
(IPM Population Size Estimate)
(See Appendix O, Tri-State MOA)

800* – 950	> 950
➢ Manage to maintain the population within or above this range. ➢ Use IPM to determine mortality limits for population stability, slight increase, or slight decrease, remaining within or above the population range: $0.98 \leq \lambda \leq 1.02$ ➢ Manage conflicts and authorize hunting at individual agency discretion, based on allocated mortality limits.	➢ Manage to maintain/reduce population. ➢ Use IPM to determine mortality limits for population stability or decrease. $0.95 \leq \lambda \leq 1.00$ *If mortality limits are determined for a population decrease, the decrease will not exceed* 5% ($\lambda \geq 0.95$). ➢ Manage conflicts and authorize hunting at individual agency discretion, based on allocated mortality limits.

* See below for management strategies if the population falls below 800.
Note: Lambda (λ) denotes the change in population size from one year to the next: $\lambda = 1.0$ represents no change in population size between two years: $\lambda > 1.0$ indicates population increase and $\lambda < 1.0$ indicates population decrease.


Median abundance
1200
1100
1000
900
800
700
600
500
400
300
200
1985
1990
1995
2000
2005
2010
2015
2020
Year
Stable/Increasing;
Exhibiting Density Dependence
Upper 95% CI (Recalibrated from 2017 Delisting Rule)
(2002-2014) = 960
Management Objective;
Within or Above this Range
Lower 95% CI (Recalibrated from 2017 Delisting Rule)
(2002-2014) = 681
USFWS Criteria for Minimum Population Size
(500 bears)
2007 Delisted/2009 Relisted
2017 Delisted/2018 Relisted

Relationship of Chapter 2 to Tri-State MOA

Feedback included comments about Chapter 2 references to the Tri-State MOA (Appendix O to the Strategy) and sequence of updates among agency documents. The relationship between the processes for updating the Conservation Strategy and the Tri-State MOA was described at the November 2023 YES meeting. Proposed updates to the Conservation Strategy, primarily for Chapter 2, were developed by a drafting review team previously identified by YES members.

Revisions to the Tri-State MOA are addressed via parallel individual state administrative processes (Idaho, Montana, and Wyoming), as coordinated by state representatives to YES. As of April 1, 2024, the Wyoming Game and Fish Commission and the Idaho Fish and Game Commission have discussed and approved revisions to the Tri-State MOA, which included state agency review of comments received by YES and additional comments received during the state administrative process.

Chapter 3 Habitat Standards and Monitoring

Background

Habitat standards and monitoring protocol in this Conservation Strategy identify provisions that Federal and State land managers throughout the GYE are committed to for habitat preservation of a recovered GYE grizzly bear population. Between 1986 and the initial 2007 delisting of the GYE grizzly bear population, grizzly bear habitat in the GYE was managed under standards and guidelines established by the Interagency Grizzly Bear Committee (IGBC 1986) and specified in National Forest and National Park management plans. Acknowledging that humans are the primary agent of grizzly bear mortalities, a principal objective of the IGBC was to improve survival rates by implementing management strategies that minimized anthropogenic influences and grizzly bear-human conflicts. The IGBC measures implemented inside the Grizzly Bear Recovery Zone (GBRZ) led to improved management of garbage and food attractants, reduced sheep grazing, and restrictions on motorized access and human development. These standards and guidelines that were imposed upon public lands were instrumental in the recovery of the grizzly bear in the GYE throughout the mid-1980s and into the 1990s.

Habitat Standards



Standards apply to 18 Bear Management Units in the PCA

- **Three Habitat Standards:**
  1. **Secure Habitat**
  2. **Developed Sites**
  3. **Livestock Grazing Allotments**



Reduce human-caused mortalities

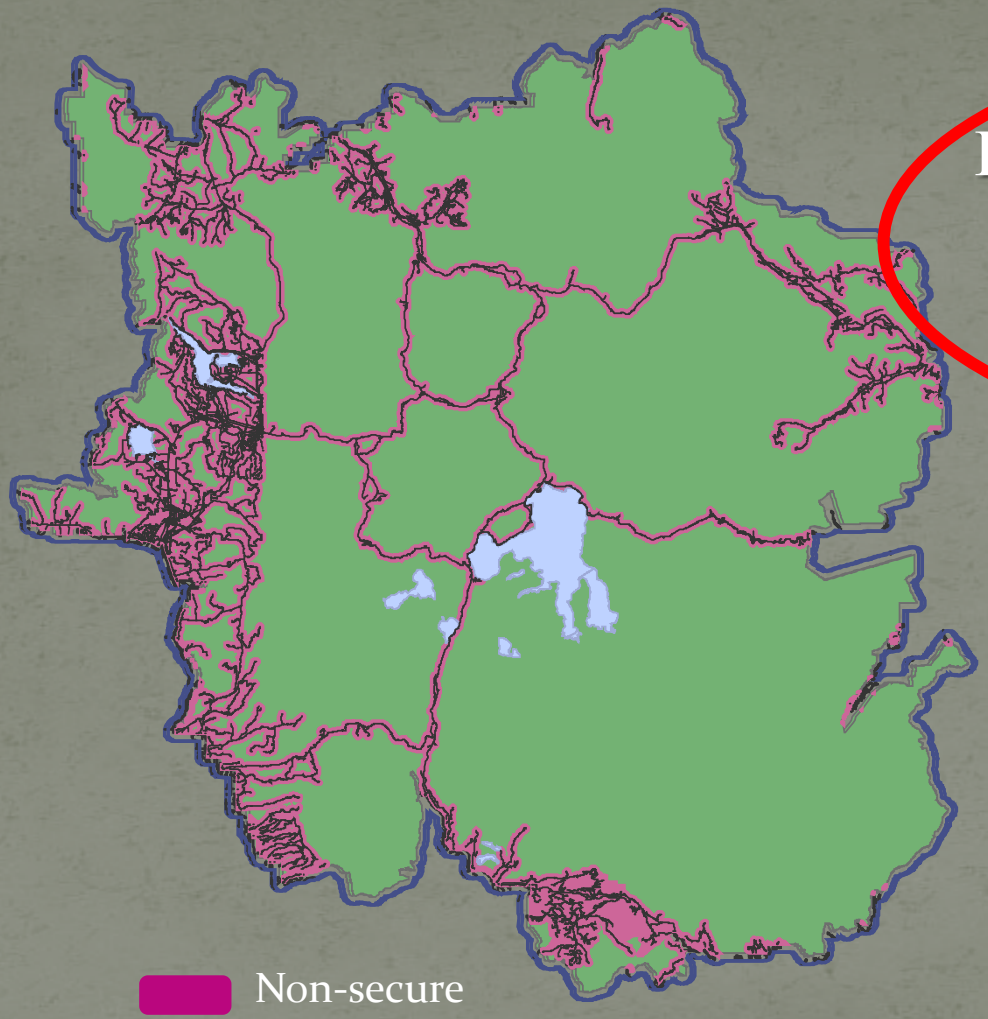
- **Measured against 1998 Baseline**
  - **Maintain or improve upon 1998 habitat conditions**
  - **Rationale: 4-7% growth rate (mid 1980s – 1990s)**

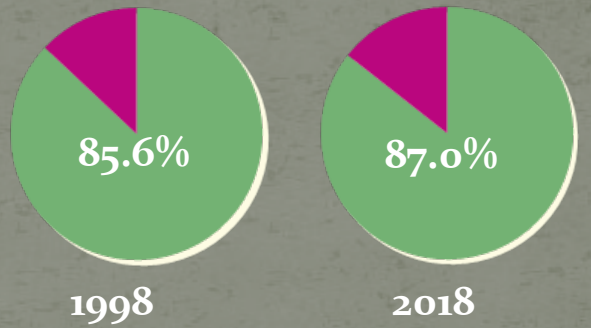
Habitat Standards – 1. Secure Habitat

Metric for Human Presence

Definition of Secure Habitat:

Area ≥ 10 acres and more than 500 meters from motorized route





Buffer open & gated motorized routes

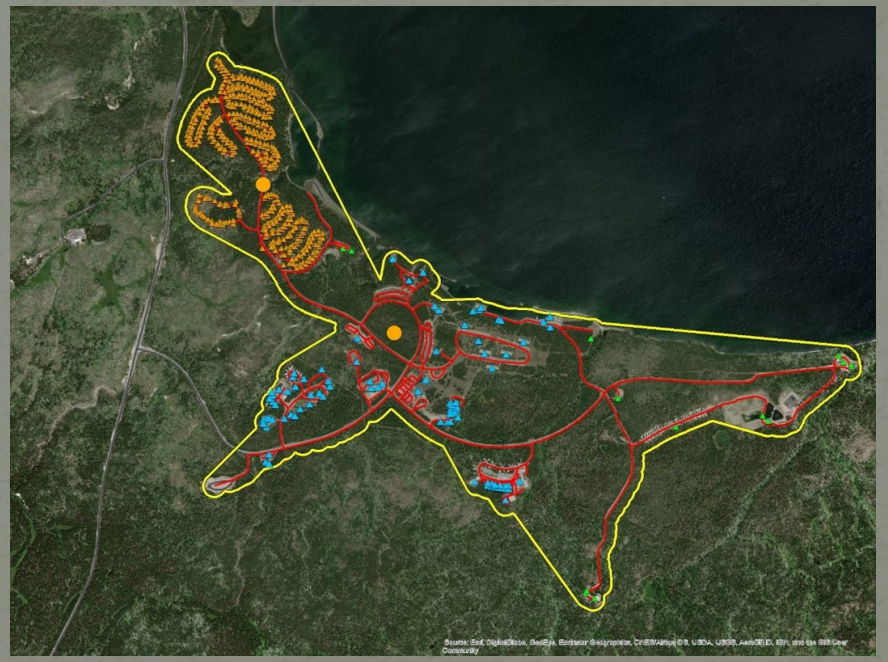
Habitat Standards – 2. Developed Sites

Developed Sites Standard

Use footprint approach to maintain number and capacity for human use **at or below 1998 levels**



Old Faithful Lodge



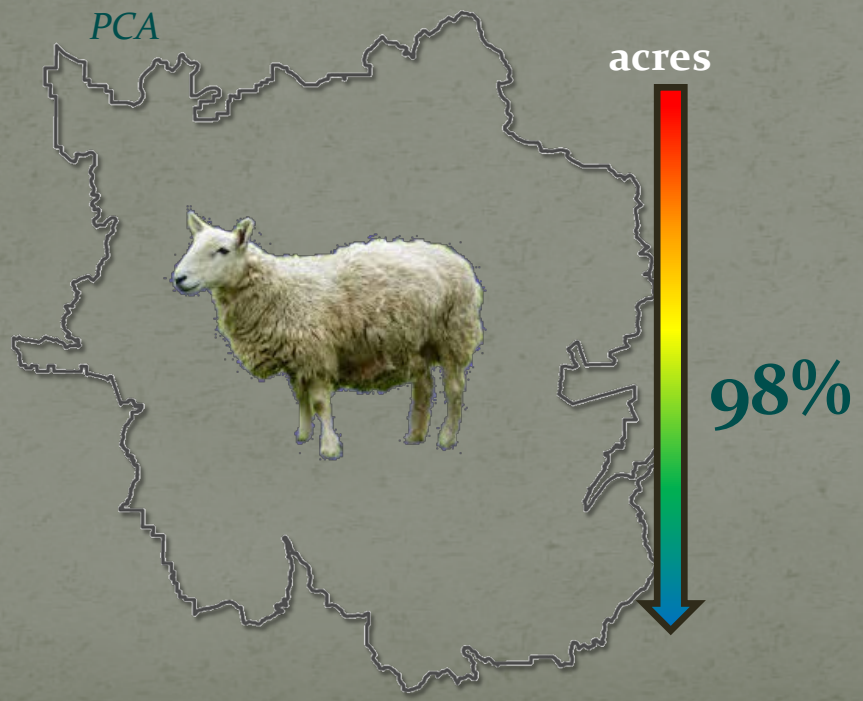


Blackrock Ranger Station

Habitat Standards – 3. Cattle & Sheep Allotments

Livestock Grazing Allotment Standard:

- Maintain number / acreage at or below 1998 levels
- Recommends phase out existing sheep allotments





In Closing….

- Multi-year interagency cooperative and collaborative effort
- Adopts and incorporates the best available science to evaluate and conserve the GYE grizzly bear population
- Addresses court ruling on the 2017 Delisting Rule
  - Recalibration with adoption of a new estimator
  - Genetic management
- **Ensures the long-term viability of grizzly bears in the GYE post-delisting**