Grand Teton National Park

Science and Resource Management

2008 Wildlife Monitoring: Grizzly Bears

BACKGROUND

Grizzly bear (*Ursus arctos*) status in Grand Teton National Park (GRTE) is evaluated as part of the larger Yellowstone ecosystem population. The USGS Interagency Grizzly Bear Study Team (IGBST) is charged with monitoring this population of grizzly bears and evaluating its status annually. GRTE contributes to the monitoring program each year by gathering and submitting a variety of demographic information from park grizzly bears. Data included in this report are courtesy of the IGBST. Their full 2008 and earlier year annual reports can be found at http://www.nrmsc.usgs.gov/research/igbst-home.htm.

POPULATION ESTIMATE

The annual population estimate is derived from the number of unduplicated females with cubs of the year (COY) observed (Fig. 1). Observation data come from a variety of sources, including a standard array of aerial observation flights from fixed-wing aircraft and ground observations. In 2008, 44 unduplicated sows with COY were observed, resulting in a point estimate of 596 bears for the ecosystem – more than twice the number estimated 20 years ago. Statistical models suggest the population is growing at about 5% annually.

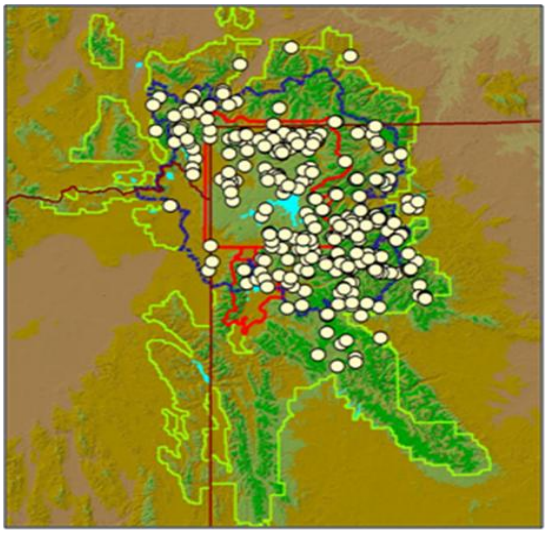

Figure 1. Locations of grizzly bear females with COY in the Yellowstone ecosystem, 2000-2008.

MORTALITY

Grizzly bear mortality was unusually high in 2008, exceeding both male and female limits established in the Final Conservation Strategy for Grizzly Bears in the Greater Yellowstone Area. Forty-eight known and probable bear deaths were documented, including 37 human-caused, 7 natural, and 4 of undetermined causes (Fig. 2). The loss of an adult female, grizzly bear #412, occurred in the John D. Rockefeller, Jr. Memorial Parkway. The bear's remains were found not far from the Glade Creek trail in August, with evidence of both wolves and other bears at the site. Cause of death was undetermined. Overall, human-caused mortalities related to conflicts between bears and ungulate-hunters topped the list of deaths in the ecosystem.

CAPTURES

A total of 79 grizzly bear captures occurred in the ecosystem in 2008, 39 for research and 40 for management (Fig. 3). Of the 66 individuals captured, 19 were female, 47 were male; 32 were new bears with

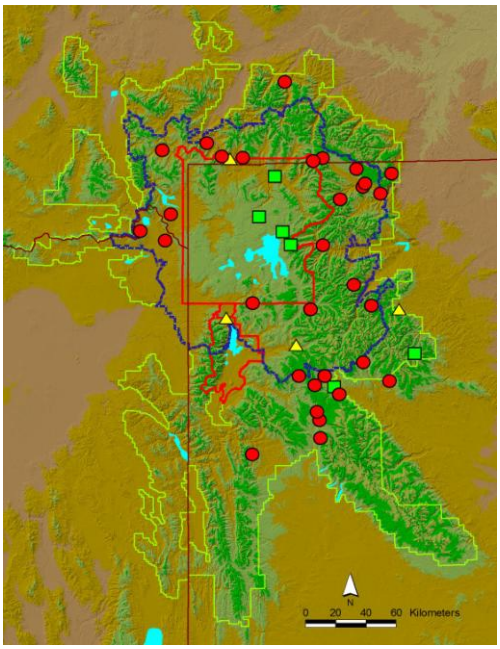

Figure 2. 2008 grizzly mortalities (causes: dots -human, squares-natural, triangles-undetermined).

no previous capture history. The IGBST conducts research trapping each year to maintain 25 or more radio-collared adult females, the minimum number necessary for long-term demographic monitoring. Males are also monitored for tracking sex-specific attributes of the population.

This year the study team monitored 87 individual bears for all or part of the year, including 30 females. Fifty one bears entered winter dens wearing active radio collars. Both VHF and GPS collars are used, which address different objectives. VHF collars, which have a longer battery life, are often used on adult females for long-term demographic monitoring. GPS collars are used when objectives call for more intensive sampling and high spatial accuracy, such as in studies of habitat use.

Twenty-eight bears (10 females, 18 males) were relocated after being trapped in conflict situations. These included a subadult male bear, possibly one of grizzly bear 399's newly independent 2-year-old cubs, caught in the Pacific Creek subdivision on GRTE's border in June. Labeled number 587, this bear was relocated to the west end of the Grassy Lake Road in a pre-emptive move. It remained on the west side of the Tetons for several weeks before moving to the west side of Jackson Lake where in September it shed its collar.

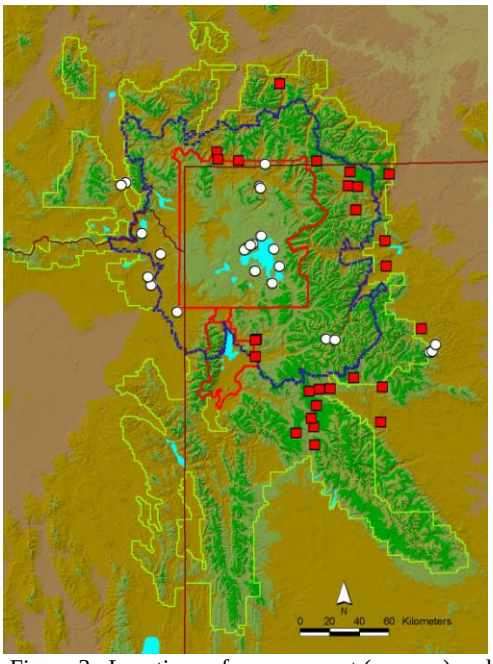

Figure 3. Locations of management (squares) and research (circles) grizzly bear captures in 2008.

WHITEBARK PINE

Because of the importance of whitebark pine nuts to bears, the IGBST monitors cone production on a series of 23 transecsts spread throughout the ecosystem. 2008 was a mediocre year for whitebark pine cone production, with 8.6 cones/tree observed. In high production years, 20 or more cones per tree is not uncommon. Cone production in GRTE was lower than in other parts of the ecosystem, and few bears were observed using whitebark pine during August and September, when seeds are typically available. Fortunately for the bears, the park saw the best berry crop in at least 20 years during 2008, and bears foraged on the several species that occur in GRTE extensively during this time.

The study team also monitors tree mortality along these transects, and the rate of whitebark pine mortality documented is somewhat alarming. Since 2002, 56.8% (108 of 190 transect trees) of the trees monitored have died, primarily from mountain pine beetle infestation. Mountain pine beetles have been prolific for several years in a row, possibly exacerbated by climate change, and have caused widespread mortality in trees throughout the ecosystem. Yellowstone grizzly cub production and fall nuisance bear management actions have been tied to low whitebark pine cone years in the past. How bears will respond to continued declines in number of live trees is unknown.

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Grizzly bear #399 in Grand Teton National Park, fall 2008.