

Interagency Grizzly Bear Study Team



2015 Annual Report Summary

The data presented here were collected by the Interagency Grizzly Bear Study Team for the entire Greater Yellowstone Ecosystem (GYE). Data are not presented separately for administrative units. Member agencies include: U.S. Geological Survey; U.S. Fish and Wildlife Service; National Park Service; U.S. Forest Service; Wyoming Game and Fish; Idaho Fish and Game; Montana Fish, Wildlife and Parks; and the Wind River Fish and Game Departments of the Shoshone and Arapaho Tribes.



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Capturing and Collaring: Eighty-nine individual grizzly bears (*Ursus arctos*) were captured on 106 occasions during the 2015 field season. Sixty-three captures were of new individuals that had not been previously marked. There were 34 research captures of 29 individuals (4 females, 25 males). Seventy-two captures of 62 individuals were the result of management trapping efforts. Thirty-seven (12 females, 25 males) of these bears were translocated. There were 29 (10 females, 19 males) management removals. We radio-monitored 101 individual grizzly bears during the 2015 field season, including 32 (28 adults) females. Fifty-seven grizzly bears entered their winter dens wearing active transmitters. Two bears not located since spring are considered missing. Since 1975, 834 individual grizzly bears have been radiomarked in the GYE.

Aerial VHF Telemetry and Bears Monitored: A total of 867 aerial VHF radio-locations were obtained during approximately 346 flight hours from 101 individual grizzly bears radio-monitored during all or a portion of the 2015 field season. We obtained >50,036 GPS-derived locations from 39 bears wearing satellite tracking collars. Twenty-eight of radio-monitored grizzly bears were adult females.

Grizzly Bear Observation Flights: Two rounds of observation flights were conducted as part of our effort to count unique females with cubs-of-the-year (hereafter, females with cubs) and document distribution of females with young (cubs, yearlings, or 2-year-olds). The first round of flights began 1 June, and 52 observation areas were surveyed during 104 flight hours. The second round of flights began on 1 July and 44 areas were surveyed during 89 flight hours. A total of 501 grizzly bears were observed in 351 groups, including 47 observations of females with cubs and 34 observations of females with older young.

Estimating Numbers of Females with Cubs-of-the-Year and Grizzly Bear Population Size: Forty-six unique females were differentiated from 156 sightings (48% aerial, 52% ground) of females with cubs, of which 2 unique family groups were outside the Demographic Monitoring Area (DMA). A total of 90 cubs were observed during the initial sightings of unique females. Mean litter size was 1.96 cubs/litter. We observed 15 single cub litters, 18 twins, and 13 triplets during initial observations of unique families. Using the sighting frequencies associated with unique females with cubs observed within the DMA and without the aid of telemetry, our 2015 estimate based on the Chao2 technique was 46. The model-averaged estimate based on data from 1983–2015 was 56 (95% CI = 44–71) females with cubs, which exceeded the objective of 48 specified in the demographic criteria for the GYE. Our 2015 estimated population size derived from the model-averaged females with cubs within the DMA was 717 (95% CI = 639–794). Our 2015 estimate for numbers of females with cubs using the mark-resight method was 96 (95% CI = 54–162); the 3-year average (2013–2015) of the mark-resight estimate was 90 (95% CI = 57–139). Our 3-year average (2013–2015) for numbers of females with cubs observed during census flights of army cutworm moth sites was 16.

Distribution of Females with Young (cubs, yearlings, or 2-year-olds): Females with young were documented in 17 of 18 Bear Management Units (BMU) within the Recovery Zone and 18 of 18 BMUs have been occupied by females with young at least 4 of the last 6 years.

Grizzly Bear Mortality: We documented 61 known and probable grizzly bear mortalities in the GYE during 2015 (15 independent females, 28 independent males, and 18 dependent young). Fifty-three were attributable to human causes, 3 to natural causes; cause of death for 5 documented mortalities was undetermined. Fifty of the known and probable mortalities occurred inside the DMA. Within the DMA, and including an estimate for unknown or unreported losses, the estimated total mortality ($n = 25$) was 10.1% of the estimated population of independent females ($n = 247$); for independent males, the total estimated mortality ($n = 32$) was 13.0% of the estimated population ($n = 247$). Human-caused mortality ($n = 13$) was 5.8% of the estimated population size for dependent young within the DMA ($n = 223$).

Carcass Surveys: Surveys to determine an index of spring ungulate carcass availability were conducted between 23 March and 22 May. Approximately 271 km of transect routes were surveyed in 5 different ungulate wintering areas. A total of 16 elk (*Cervus elaphus*), 6 bison (*Bison bison*), 2 mule deer (*Odocoileus hemionus*), and 1 pronghorn (*Antilocapra americana*) carcasses were observed for a rate of 0.09 ungulate carcasses/km.

Army Cutworm Moth Aggregation Sites: A total of 222 grizzly bear observations were recorded at 30 confirmed and 14 possible army cutworm moth (*Euxoa auxiliaris*) aggregation sites. This number of observations was lower than previous years, discontinuing an increasing trend since 2010. Eleven (24%) of the 46 initial observations of unique females with cubs and 26 (17%) of all 156 sightings of females with cubs occurred at moth aggregation sites.

Whitebark Pine Surveys: Twenty-one transects were sampled during late July and early August to measure whitebark pine (*Pinus albicaulis*) cone production on live trees. Overall, the number of mean cones/tree was 15.9, which approximated the long-term average for 1980–2015. We observed no additional tree mortality due to mountain pine beetle (*Dendroctonus ponderosae*) among trees consistently surveyed since 2002. Total mortality on these transect trees sampled since 2002 is now at 75.3% (143/190) with 100% (19/19) of transects containing beetle-killed trees. In the vicinity of our transects, these data indicate the mountain pine beetle outbreak has run its course.

Grizzly Bear-Human Conflicts: We documented 444 grizzly bears-human conflicts during 2015. Seventy-three percent of documented conflicts ($n = 325$) occurred in Wyoming, and the majority of those (49%) were from conflicts with livestock. There were 90, 28, and 1, reported conflicts in Montana, Idaho, and Yellowstone National Park, respectively. No grizzly bear-human conflicts were reported in Grand Teton National Park or the Wind River Reservation.



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