Alberta Conservation Association
2015/16 Project Summary Report

Project Name: Grizzly Bear Inventory in Bear Management Area 5

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Partnerships

Alberta Environment and Parks
Alberta Innovates – Technology Futures
Landowners in southwest Alberta
Parks Canada
Riversdale Resources Ltd./Benga Mining Ltd.
Safari Club International – Northern Alberta Chapter
Spray Lake Sawmills
Waterton Biosphere Reserve Association

Key Findings

- We met with more than 25 landowners to gain support for the grizzly bear inventory project and request access to their lands to survey for bear rub objects.
- From June to the end of October 2015, we surveyed 22 private properties targeting the largest landowners with the highest-quality grizzly bear habitat first. We also surveyed 20 grazing allotments in the Porcupine Hills.
- We identified 418 rub objects on deeded and leased land within the southern portion of Bear Management Area 5 in the summer of 2015. When we combine these rub objects with those we set up on Crown land in 2014 (412), we have found and fit barbed wire hair snags to 830 rub objects over two years of field work.

Introduction

In 2002, Alberta's Endangered Species Conservation Committee recommended that the provincial grizzly bear population be designated as *Threatened* due to its small population size, low reproductive rate, limited immigration from outside populations, and increasing human activity on the landscape (Alberta Sustainable Resource Development 2008; Alberta Sustainable Resource Development and Alberta Conservation Association 2010). In 2006, the Alberta

government suspended the grizzly bear hunt largely based on low aggregate population estimates available at the time. Recent advances in sampling approaches have shown a marked difference in grizzly bear estimates in the southernmost bear management area in Alberta (BMA 6). Early results from a University of Alberta study using DNA from hair samples collected from naturally existing rub objects suggest a marked increase in density. In 2014, we collaborated with project partners to search for bear rub trees in all drainages of Crown land north of the Crowsnest Pass to Kananaskis Country in BMA 5. We attached short strands of double-stranded barbed wire to the surface of each rub tree to aid in hair collection. In 2015, we continued to locate rub objects in BMA 5, with our focus on private lands within the eastern side of the zone. In 2016, we will collect bear hair from all previously identified rub objects, which will provide genetic information that will contribute to an updated estimate of the grizzly density within this area.

Methods

In the spring of 2015, we met with more than 25 landowners in southwest Alberta to gain support for the grizzly bear inventory project and request access onto their private lands to survey for bear rub objects. We began this initiative by first identifying some of the largest landholders with the highest-quality grizzly bear habitat in the southern portion of BMA 5.

Between June and the end of October, we collaborated with Alberta Environment and Parks to search for bear rub objects on deeded and leased land north of the Crowsnest pass to Kananaskis country. This region is just east of the area surveyed in 2014 and is more than 1,200 km^2. We attached short strands of double-stranded barbed wire to the surface of each rub object to aid in hair collection. We also attached a pre-numbered aluminum tag as a rub object identifier and collected ecological information at each site, including rub type (tree, fence post), tree species, rub surface size and condition, and presence or absence of hair.

In 2016, we will begin surveying by burning off all hairs present on identified rub objects and then revisit each site three more times at set time intervals to collect hair. Hair collected from the barbs will be sent to a laboratory that specializes in bear DNA analysis. The DNA will be used to determine species, gender and unique individuals. This information will assist us in estimating the minimum number of individuals in the area. The DNA will also be used to perform a mark-recapture population analysis of the entire BMA in collaboration with other partners. Collecting hair from rub objects is considered to be a safe, non-invasive and effective technique to gain valuable information on the population, density and distribution of grizzly bears.

Results

In 2015, we completed surveys for bear rub objects on more than 20 of the largest private properties with the highest-quality grizzly bear habitat in the southern portion of BMA 5. We also completed surveys on 20 grazing allotments in the Porcupine Hills. This tremendous effort resulted in the identification and set-up of 418 rub objects. When we combine these rub objects with those we set up on Crown land in 2014 (412), we have identified and set up a total of 830 rub objects over two years of field work.

Conclusions

There is ongoing concern over the frequent conflict between humans and bears in southwest Alberta. Bears and the ranching community are attempting to coexist on the landscape, although natural attractants and abundant food sources found in agricultural operations (livestock depredation, grain bins or silage) often lead to conflict. There is also a large industrial footprint in the region with an associated network of roads and all-terrain-vehicle trails. Moreover, recreational activity is increasingly bringing more people into areas frequented by grizzly bears with the additive potential for human–bear conflict. An accurate population estimate is a key part of the decision process for understanding human–bear conflicts and for proactive land-use planning designed to reduce these conflicts.

In 2016, we will collect bear hair samples from all rub objects in the southern portion of BMA 5. These samples will allow us to detect individual bears, and the analysis of their DNA will contribute to a population density estimate for BMA 5.

Communications

- We presented the grizzly bear inventory project to junior high students at St. Catherine's School in Picture Butte, Alberta, on November 19, 2015, and also to the Crowsnest Conservation Society in Blairmore, Alberta, on November 26, 2015.

- We helped organize and presented at grizzly bear working group discussions (Alberta Conservation Association, Alberta Environment and Parks, Alberta Innovates – Technology Futures, and Parks Canada).

Literature Cited

Alberta Sustainable Resource Development. 2008. Alberta grizzly bear recovery plan 2008–2013. Alberta Sustainable Resource Development, Fish and Wildlife Division. Alberta Species at Risk Recovery Plan No. 15, Edmonton, Alberta. 68 pp.

Alberta Sustainable Resource Development and Alberta Conservation Association. 2010. Status of the grizzly bear (*Ursus arctos*) in Alberta: update 2010. Alberta Sustainable Resource Development. Wildlife Status Report No. 37 (update 2010), Edmonton, Alberta. 44 pp.

Photos

Surveying for bear rub objects in the Porcupine Hills, Alberta Conservation Association biologist Tyler Johns takes a minute to look over rolling hills and the Livingston mountain range to the west on a sunny day in late September. Photo: Mike Verhage

Bear rub objects can include trees, fence posts, power poles and practically anything that can snag a hair sample when rubbed on. In this photo, a clump of bear hair was caught on a stretch of barbed-wire fence on private land in the southern portion of Bear Management Area 5. Photo: Mike Verhage

Each rub tree that we set up has a unique appearance! Alberta Conservation Association summer intern Jennifer Baker documents ecological characteristics such as tree species, rub surface size and condition, presence of hair, hair type, presence of claw or bite marks, and the location of the rub tree. Photo: Mike Verhage