

SCI-NAC GRANT UPDATE: EVALUATING THE EFFICACY OF INTERCEPT FEEDING IN REDUCING SPRING GRIZZLY BEAR-RANCHING CONFLICTS

CONTACT:

Andrea Morehouse, University of Alberta
morehou@ualberta.ca

Mark Boyce, University of Alberta
boyce@ualberta.ca



Figure 2: Road-killed ungulate carcasses are slung via helicopter each spring to remote areas. Photo: Andrea Morehouse



Figure 1: A grizzly bear rubs on one of our “WD 40 rub trees” at an intercept feeding site. Image from remote trail camera.

PROJECT OVERVIEW: The propensity for conflict between grizzly bears (a provincially threatened species) and agricultural activities is high in southwestern Alberta, and various programs exist to mitigate these conflicts. Since 1998, ungulate carcasses have been placed in remote areas each spring to “intercept” bears upon den emergence to reduce spring depredation of cattle by grizzly bears. The overall goal of our research was to evaluate the efficacy of Alberta’s intercept-feeding program by measuring use of program sites by bears, and by tracking trends in springtime grizzly bear-agricultural conflicts. We collected hair samples from bears using the intercept feeding sites each spring, and genetic analysis revealed species, sex, and individual identity. These results are integrated into a larger grizzly bear population monitoring program. We also tracked grizzly bear-livestock incidents through provincial conflict records.



Figure 3: Although established for grizzly bears, other large carnivores such as wolves visit the feeding sites. Image from remote trail camera

PROJECT RESULTS:

We monitored 12 feeding locations in 2012 and 2013. Using DNA we identified 22 grizzly bears (19 males, 3 females) at the intercept-feeding sites. Our concurrent grizzly bear monitoring program identified 165 grizzly bears within the study area at some point over the two years of sampling. Only 2 bears detected at intercept-feeding sites were detected also at a spring conflict site. Remote trail cameras detected grizzly bears at all intercept-feeding sites, but females with cubs were detected at only 3 of the 12 sites. Grizzly bear livestock incidents were on average lower before the provisioning program (1982 – 1995, \bar{x} =0.8 livestock incidents/year, SE=0.3) than during (1999 – 2013, \bar{x} =3.3 livestock incidents/year, SE=1.3). Slightly more females than males were involved in spring (54.5%) and non-spring (55.9%) incidents. Intercept feeding was suspended in 2014 and 2015; we did not detect an increase in spring livestock predation without the program. We estimated annual operating costs to be \$43,850 CAD; initial capital equipment investment was \$19,000 CAD. In total, approximately \$720,600 CAD has been spent on the intercept-feeding program since 1998. Despite intercept feeding, conflicts between grizzly bears and agriculture have increased at a rate that exceeds the estimated 4% increase in the grizzly bear population. Other mitigation efforts including electric fencing and deadstock removal might be a more cost-effective long-term solution.

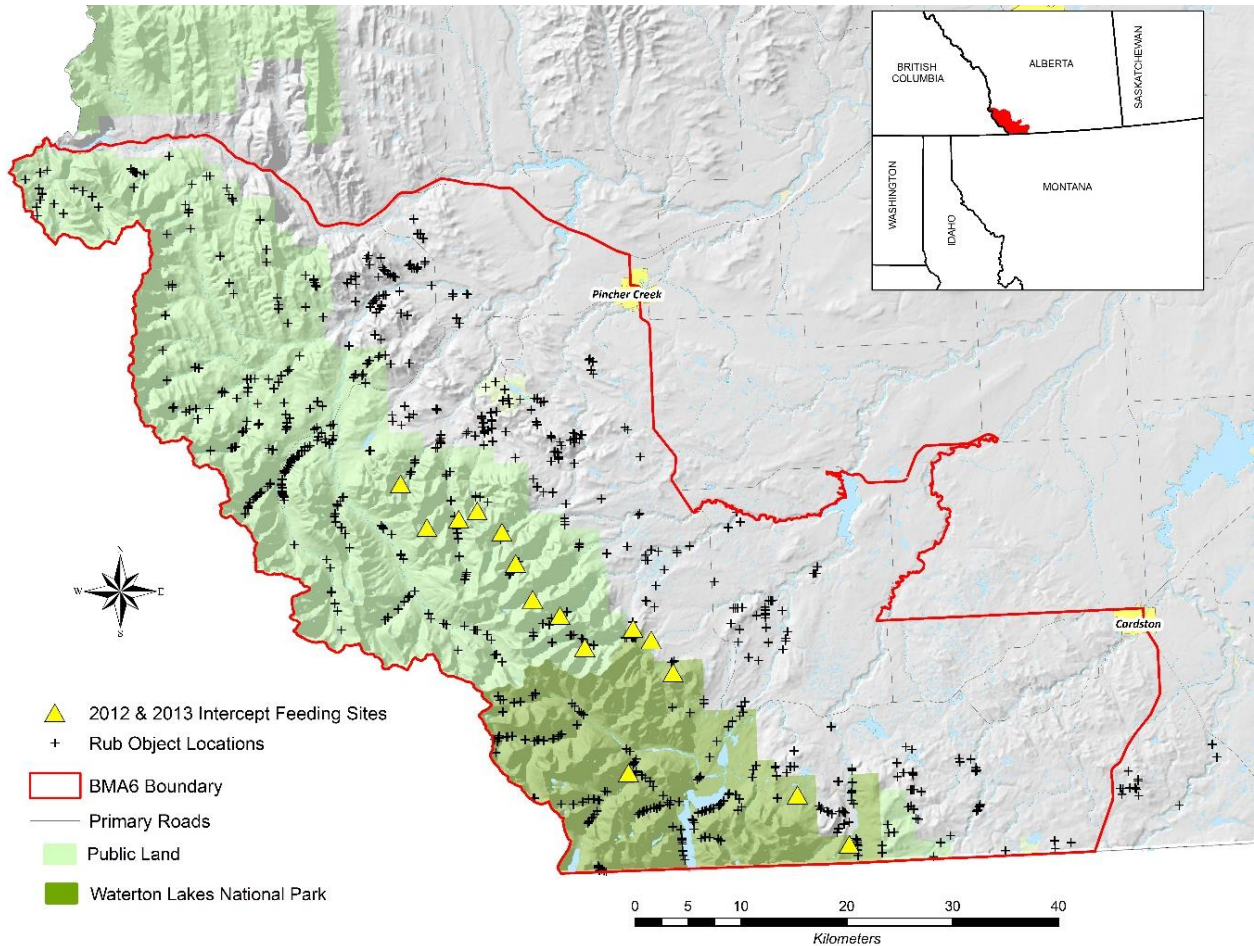


Figure 4: Map of study area in southwestern Alberta. Yellow triangles are the intercept feeding sites monitored in 2012 and 2013. The black crosses are the sampling stations from our larger non-invasive genetic grizzly bear monitoring program.



Figure 5: Southwestern Alberta landscape. Photo: Andrea Morehouse