

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Climate Change and Persistence of Mountain Goats

Type of Project: Research
Discipline: Natural Resources
Funding Agency: National Park Service
Other Partners/Cooperators: University of Montana
Effective Dates: 9/30/2008 - 12/31/2011
Funding Amount: \$50,000 [\$30,000 added in FY09]{matching from Glacier fund and WCS}

Investigators and Agency Representative:

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Project Abstract: This project poses a simple question: Does climate change threaten the persistence of North America's quintessential large mammal of the alpine - mountain goats? Although it is clear that their habitats are melting away, possible impacts on goat survival and distribution are unclear. With glacial recession, additional habitat may become available. However, goats may respond poorly because once-relevant adaptations to high, cool places do not guarantee reproduction and population persistence. Potential effects on survival, reproduction, food limitation and distribution are unknown. The proposed project will assess the extent to which these factors are influenced by climate and other factors.

The field component of this project will include outfitting approximately 30 female goats in Glacier NP and the Flint Creek Mountains, with VHF radio collars, via helicopter captures during March 2010. We will put an additional 15-20 collars on sheep in March 2011. We will combine ground and aerial radio telemetry with non-invasive methods and field observations to collect data on offspring production and survival, adult female survival and habitat use.

The objectives of the study are:

- 1) Gather data on habitat use to:
 - a) Develop a predictive model for mountain goat habitat use based on topographic, vegetation and weather characteristics
 - b) Use predicted changes in temperature and vegetation to model future habitat use by goats.
- 2) Assess kid survival
- 3) Compile existing research on mountain goat populations in Montana to build a database for agency, and possibly public, use
- 4) Use collared goats to obtain sightability estimates that will serve to correct for aerial survey biases

Outcomes with Completion Dates: The primary product will be several reports and peer-reviewed publications that will all be available to Glacier biologists and managers. These will offer both a database and lay- and scientific- treatments of how climate and other factors are affecting goats. Additionally, papers will be submitted to The Glacier National Park Fund Newsletter and the Crown of the Continent Research Learning Center Newsletter. Pertinent findings will also be included in Park news releases. Final products will also be delivered electronically to the RM-CESU. Draft reports are due by 12/31/2010; final products are due 12/31/2011.

Keywords: Mountain goats, surveys, climate change, habitat use, reproduction, Glacier National Park, University of Montana, Division of Biological Sciences