

MMS ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

Region: Alaska

Planning Areas: Beaufort Sea, Chukchi Sea

Title: Radio-Frequency Identification Tags for Grizzly and Polar Bear Research (AK-93-48-62)

MMS Information Needs to be Addressed: This jointly-funded study will develop and test new technology for application in population studies of polar bears on the Alaskan OCS. Such studies provide useful information on the Southern Beaufort Sea polar bear stock and specifically on the rapidly increasing sub-population of polar bears summering in areas of increasing oil and gas activities along the Alaskan Arctic coastline. New information will support NEPA analysis and documentation for Beaufort and Chukchi Sea Lease Sales, DPPs, and monitoring. Data will also be useful for MMPA permitting and development of related mitigation.

Actual Costs: \$257,000

Period of Performance: FY 2005-2008

Conducting Organization: CMI, ADF&G, USGS-BRD

MMS Contact: [Chief, Alaska Environmental Studies Section](#)

Description:

Background Grizzly bears (*Ursus arctos*) and polar bears (*Ursus maritimus*) are important species for subsistence communities along the Beaufort Sea coast for food, fur and for their cultural importance. Much of our current knowledge about bear populations, habitat use, movements, and interactions with oil and gas activities on the North Slope has been the result of repeated observations of radio-collared or satellite-collared female and sub-adult bears. Unfortunately, adult male bears have a low retention rate for collars due to their large necks. Application of existing and emerging radio frequency identification technology, currently used for military and commerce, has the potential to significantly increase the sample size of marked bears by decreasing the cost of marking and allowing male bears to be marked. A system contains two major components: tags and a reader. The tags are currently capable of transmitting 100 m under laboratory conditions when interrogated by the reader. Neither the current generation of readers (receivers) nor the tags has been tested with large mammals under arctic environmental conditions where aircraft are used extensively.

Objectives The objective of this study is to modify the radio frequency identification system and test its feasibility for use on grizzly and polar bear research and management.

Methods

1. Modify an existing tag design so tags can be attached to bear ears.
2. Modify existing readers for use in aircraft and land vehicles.
3. Build 50 tags and 4 readers for use on the project.

4. Test the radio frequency identification system initially on 40 grizzly bears marked during the ADF&G “Oilfield Grizzly Bear Project” and, if successful, expand the test to include 10 polar bears.

Current Status: All field work is completed and a final report is expected on schedule.

Final Report Due: April 29, 2008

Publications Completed: None

Affiliated WWW Sites: <http://www.sfos.uaf.edu/cmi/>
<http://www.mms.gov/alaska/>

Revised Date: March 2008