

FWS Arctic Field Projects – 2012

The Service's principal investigator / contact person is listed and each can be reached using the e-mail address format: *firstname_lastname@fws.gov*

Polar Bears

Title: Demography and Behavior of Polar Bears Summering on Shore in Alaska

Principal Investigator: Eric Regher, USFWS – Office of Marine Mammal Management

Partners: Funding from BOEM. USGS has a companion project, led by Lily Peacock that is funded by their Changing Arctic Ecosystems initiative and BOEM.

Description: Similar to previous years, we will fly up to four aerial surveys, from late August to early October, to monitor distribution and indices of abundance for polar bears on the coast and barrier islands from Barrow to the U.S.-Canada border.

Title: Community-Based Conservation In Kaktovik

Principal Investigator: Susanne Miller, USFWS – Office of Marine Mammal Management

Partners: Community of Kaktovik

Description: We will continue ground-based monitoring of the numbers of polar bears in the vicinity of Barter Island in the autumn, as well as assisting the community to reduce human-polar bear conflicts and to address polar bear viewing.

Title: Polar Bear Den Detection Study

Principal Investigator: Craig Perham, USFWS – Office of Marine Mammal Management

Partners: Alaska Department of Fish & Game

Description: We will continue to use hand-held and aerial FLIR methods to detect polar bear and grizzly bear dens in the Prudhoe Bay region during the winter and spring, with confirmation of den locations using scent-trained dogs. We will conduct additional surveys in the summer to ground-truth potential den locations.

Walrus

Field efforts will be centered around any haulouts that form on the Chukchi Sea coast, such as the one which has occurred near Point Lay the last 2 years.

Title: Monitoring at walrus haulouts on the Chukchi Sea coast

Principal Investigator: Joel Garlich-Miller, USFWS – Office of Marine Mammal Management

Partners: ADF&G, Eskimo Walrus Commission, North Slope Borough, and Village residents.

Description: Monitoring to determine the timing, number of animals, disturbance events, mortalities and cause of death (if any occurs), and disease occurrence/extent.

Title: Biopsy sampling of walrus tissues for genetic mark-recapture

Principal Investigator: Patrick Lemons, USFWS – Office of Marine Mammal Management

Partners: ADFG, EWC, and Village residents.

Title: Community based walrus haulout management and protection

Principal: Joel Garlich-Miller, USFWS – Office of Marine Mammal Management

Partners: North Slope Coastal Communities

Description: Working with villages near walrus haulouts to help them lead haulout management and protection. To that end, we are sponsoring a workshop in Feb. in Barrow that will bring in leaders from a number of North Slope villages to discuss the issues, develop response plans, and increase communications.

Other Mammals

Title: Abundance, distribution, population structure, reproductive success, and survival of muskoxen in northeastern Alaska.

Contact: David Payer, USFWS – Arctic NWR

Partners: ADF&G, Environment Yukon, Parks Canada, NPS, NSB, UAF

Description: A reestablished population of muskoxen in northeastern Alaska and northwestern Canada declined between 1999 and 2006, and shows little evidence of recovery. This work is part of a long-term project documenting muskox population trends, distribution, reproduction, and survival.

Title: Population trends and demography of moose on the Arctic NWR

Contact: David Payer, USFWS – Arctic NWR

Description: Document distribution and demographic characteristics of moose in the Refuge. Work in 2009 focused on the North Slope and northern foothills of the Brooks Range within the refuge, where 61 moose were observed. This is a very low density population.

Title: Population trends and demography of dall sheep on the Arctic NWR

Contact: David Payer, USFWS – Arctic NWR

Description: We estimate reproductive success, age and sex structure (including percent harvestable rams), and trends in population size for Dall sheep in selected areas within the Refuge, including Atigun Gorge, the Hulahula River drainage, and the Arctic Village Sheep Management Area. Work in 2009 focused on the Hulahula River drainage.

Title: Porcupine Caribou Herd productivity and early calf survival

Contact: David Payer, USFWS – Arctic NWR

Partners: ADF&G, Environment Yukon, Canadian Wildlife Service

Description: Estimate parturition rate among adult cows, and survival of calves to 1 month.

Title: Distribution and seasonal migrations of caribou in the Arctic NWR

Contact: David Payer, USFWS – Arctic NWR

Partners: ADF&G, Environment Yukon, Canadian Wildlife Service

Description: Document habitats used by caribou of the Porcupine and Central Arctic Herds for calving, post calving, and overwintering, and identify migratory routes.

Vegetation & Climate

Title: The Global Observation Research Initiative in Alpine Environments (GLORIA)

Contact: David Payer, USFWS – Arctic NWR

Partners: Many (world-wide)

Description: We have established an observation site for the international Global Observation Research Initiative in Alpine environments (GLORIA) program. Location is north of Atigun Gorge. Permanent mountain-top plots are sampled for plant species, cover, and frequency. Sampling will be repeated every 5 years to track changes in plant communities that may occur if species elevational distributions change in response to changing climate.

Title: Climate monitoring and vegetation plots at four remote sites

Contact: David Payer, USFWS – Arctic NWR

Partners: USGS

Description: Monitor several climate parameters, including air and soil temperature, wind speed and direction, precipitation, snow depth, etc. Arctic NWR currently has 4 USGS weather stations, 3 of which are on North Slope. Monitor permanent vegetation plots at 4 climate stations maintained by the USGS within the Refuge.

Title: Soil temperature monitoring

Contact: David Payer, USFWS – Arctic NWR

Description: Temperature data loggers record soil temperatures at over 30 locations in the refuge, to document differences in soil temperature over time and between different landscapes and vegetation types. Quantitative vegetation information is available at most sites.

Title: Permanent vegetation plots at long term ecological monitoring sites

Contact: David Payer, USFWS – Arctic NWR

Description: Collect baseline data and document changes over time for plant species occurrence and cover, and soil characteristics, at 5 sites representing each of the major ecoregions within the Refuge. Two to 6 permanent vegetation plots at each site are monitored every 5 years. Results after the first 10 years indicate decreasing abundance of mosses and lichens and no trends for vascular plants.

Title: Porcupine River post-fire vegetation succession plots

Contact: David Payer, USFWS – Arctic NWR

Partners: USFS

Description: Monitor vegetation recovery after 1950 fire using standard U.S. Forest Service methods. Repeat monitoring at 5 permanent plots.

Title: Landscape Change Detection

Contact: David Payer, USFWS – Arctic NWR

Description: Monitor changes in vegetation and landforms at 36 study areas in Arctic NWR using historic aerial photographs and current satellite imagery. Historic photographs are from 1947, and satellite imagery is from 2008. Additional imagery will be collected at intervals to be determined for continuing detection of change.

Fisheries

Title: Climate change, hydrology, and Arctic grayling in the Kuparuk River

Principal Investigator (agency): Mary Beth Loewen, USFWS – Fairbanks Field Office

Partners: UAF, Ecosystems Center, Wood's Hole, MA;

Description: Multi-discipline project with objectives including describing large and small scale movements of Arctic grayling and hydrologic factors that affect stream discharge to understand the potential for stream drying and its affects on Arctic grayling migration.

Title: Movements, hydrology, and diet of Arctic grayling in Crea Creek, a tributary of the Ublutuoch River

Principal Investigator (agency): Mary Beth Loewen, USFWS – Fairbanks Field Office

Partners: BLM and UAF.

Description: Describe small scale movements of Arctic grayling and the hydrologic factors, affecting habitats, and feeding behaviors of these fish to better understand the influence that movement and hydrology have on Arctic grayling diet.

Title: Fish surveys in coastal waters near Kaktovik

Principal Investigator (agency): Mary Beth Loewen

Partners: Army Corps of Engineers (COE)

Description: Bcome familiar with the fish and their habitats of the nearshore area and describe fish presence near Kaktovik to assist in describing fish distribution along Beaufort Sea coast.

Shorebirds

Title: Breeding Ecology of Shorebirds at Barrow

Principal Investigator: Rick Lanctot, USFWS – Migratory Bird Management

Partners: Manomet Center for Conservation Sciences, University of Missouri, University of Florida at Gainesville, University of Colorado Denver, University of Alaska Fairbanks, BioDiversity Research Institute, and U.S. Geological Survey.

Description: 2012 will be the tenth year of a long-term study to determine factors limiting population size of shorebirds. The Barrow camp is one of 10 camps belonging to the Arctic Shorebird Demographics Network (ASDN) -- all focused on collecting data on shorebird demography and environmental variables. Other camps in Alaska include Nome, Cape Krusenstern (also run by USFWS), Ikpikpuk River, Colville River, and Canning River. Sites in Canada are located in the Mackenzie Delta, Bylot Island, East Bay, and Churchill.

Title: Abundance and distribution of pre-migratory shorebirds staging on the coast of Arctic NWR.

Contact: David Payer, USFWS – Arctic NWR

Partners: UAF, Manomet, USGS

Description: Assess abundance, distribution, condition, and species composition of shorebirds staging in coastal areas of the Arctic NWR prior to fall migration. Quantify movement patterns and residency times for pre-migratory shorebirds at staging sites on the refuge.

Title: Breeding ecology, abundance, distribution, and habitat associations of Smith's Longspurs.

Contact: David Payer, USFWS – Arctic NWR

Partners: UAF, USGS

Description: Due to the remoteness of the breeding range, little research has been done on breeding Smith's Longspurs and little is known about their breeding distribution and demography in Alaska. The Arctic Refuge is likely the only National Wildlife Refuge in the U.S. with breeding populations of this species. Smith's Longspurs use a geographically small, human-altered region in winter and may be vulnerable to land use changes. For this reason, Smith's Longspur has been recognized as a species of concern by the U.S. Fish and Wildlife Service, Boreal Partners in Flight and the Alaska Bird Observatory. The objectives of this project are to develop appropriate census methods for the species and to investigate the breeding ecology, abundance, distribution and habitat associations of Smith's Longspurs on the Arctic Refuge and other regions in northern Alaska.

Other Avian

Title: Alaska landbird monitoring system

Contact: David Payer, USFWS – Arctic NWR

Partners: ADF&G, USFS, NPS, USGS, DoD

Description: Most of the 135 species of breeding land-birds in Alaska are limited to arctic and northern forest biomes that are not adequately sampled by any of the monitoring programs for terrestrial birds in North America. The North American Breeding Bird Survey (BBS), a system of roadside surveys for land-birds breeding in the United States and Canada, has been instrumental in both documenting long-term declines among temperate breeding land-birds and fueling conservation measures to reverse these declines. However, the BBS has been ineffective in estimating population trends for many land-bird species in Alaska because of the sparse road system in the state. Thus Boreal Partners in Flight (BPIF) conceived the Alaska Landbird Monitoring System (ALMS), an off-road program of repeated surveys to monitor the population trends of land-birds in the vast roadless areas of the state that act in concert with BBS roadside surveys in Alaska.

Waterfowl

Title: Arctic Coastal Plain aerial breeding pair survey

Principal Investigator: William Larned, USFWS – Migratory Bird Management

Description: The Arctic Coastal Plain aerial breeding pair survey documents distribution, population indices, and trends of waterfowl and other waterbirds. This survey, initiated in 1986, is the principal monitoring metric for listed spectacled eiders, and provides the only standardized long-term, broad scale, survey data for all species of waterfowl on the entire Alaskan Arctic Coastal Plain.

Title: Arctic Coastal Plain Common Eider aerial breeding pair survey

Principal Investigator: William Larned, USFWS – Migratory Bird Management

Description: The Arctic Coastal Plain common eider breeding pair survey is designed specifically to monitor the population index, population trend, and distribution of common eiders. Unlike other waterbirds on the Arctic Coastal Plain, common eiders nest almost

exclusively on barrier islands - a habitat that is not sampled during the standard ACP breeding pair survey.

Title: Teshekuk Lake Molting Goose Survey

Principal Investigator: Julian Fischer, USFWS – Migratory Bird Management

Description: This survey monitors trends and distribution of geese within a core molting area in the NPRA. This survey, initiated in 1982 has demonstrated the international importance of a small portion of the NPRA to Pacific brant. The survey has also been used to identify significant shifts in distribution of four species of geese that molt on the ACP.

Title: Breeding ecology of Steller's and spectacled eiders nesting near Barrow, Alaska.

Principal Investigator: David Safine, USFWS – Fairbanks Field Office

Partners: BLM, National Fish and Wildlife Foundation, ConocoPhillips, North Slope Borough, UIC, Ilisagvik College.

Description: This study focuses on distribution and relative abundance of STEI and SPEI and avian predators in the Barrow area. Also focuses on nest success, productivity, habitat use, nesting chronology, and annual variation in breeding effort of STEI and avian predators

Title: Eider Journey

Principal: Neesha Stellrecht, USFWS – Fairbanks Field Office

Partners: BLM, National Fish and Wildlife Foundation, ConocoPhillips, North Slope Borough, UIC, Ilisagvik College, North Slope Borough School District.

Description: Connect local students with scientists working in the Barrow area. Educate the students and the community about the status of two threatened eider species and the threats they face. Involving local students in this research provides opportunities for them to develop scientific skills as well a better understanding of the landscape and ecosystem in which they live. Hands-on involvement in this type of field work may also foster genuine interest in a career in biological science.

Barrow Community Science

Title: Estimation of lemming abundance and distribution near Barrow, Alaska

Principal Investigator: Kaiti Ott, Neesha Stellrecht, USFWS – Fairbanks Field Office

Partners: BLM, North Slope Borough, UIC

Description: To understand spatial and temporal variation in lemming abundance near Barrow in order to better quantify the relationship between variation in lemming abundance and reproductive success of threatened Steller's eiders and other waterfowl. The project aims to explore the feasibility of employing live mark-recapture procedures to obtain estimates of lemming abundance and density. It also connects local students to scientists working in the Barrow area. Involving local students in this research will provide opportunities for them to develop scientific skills as well a better understanding of the landscape and ecosystem in which they live. Hands-on involvement in this type of field work may also foster genuine interest in a career in biological science.

Title: North Slope Science and Cultural Camps

Principals - Neesha Stellrecht/Maria Berger, USFWS – Barrow Office

Partners: BLM, North Slope Borough, UIC, NVB, ICAS, Ilisagvik College, local community members

Description: Summer camps offered to elementary and middle school age students. Activities are both scientifically and culturally based. Students learn about science, local wildlife, and the Inupiat culture through outdoor exploration and activities led by a variety of scientists and local cultural experts.

Title: Developing Schoolyard Habitats in Barrow

Principal: Neesha Stellrecht/Maria Berger, USFWS – Barrow Office

Partners: Soil and Water Conservation District, BLM, North Slope Borough, UIC, Ilisagvik College, ICAS, NVB, City of Barrow, North Slope Borough School District.

Description: Creating an outdoor classroom which gives an opportunity to get students outdoors and connect with nature. The initial project will focus on tundra restoration and education.

Potential Future Activities

Continue to work with affected communities on marine mammal management issues.

Continue artic shorebird demographic network for a further 2 – 3 years.

Inventory Chukchi Sea coastline for breeding Spoon-billed sandpipers and staging Red Knots.

Continue to develop our science-based education and outreach activities in Barrow and other North Slope communities.

Maintain and continue long-term avian surveys and studies.

For fisheries continue on-going studies to completion, identify movements and critical habitats of Dolly Varden in major rivers of Arctic Refuge and movements and habitat preferences of Hulahula River Dolly Varden in nearshore waters of Arctic Refuge. Identify movements and critical habitats of whitefish and Arctic grayling in the Ublutuoch River.