

Sea Duck Joint Venture
Annual Project Summary for Endorsed Projects
FY 03 – (October 1 to Sept 30)

Project Title: PR23: Characterization of Beaufort Sea Flyway: Long-tailed ducks (*Clangula hyemalis*) and common eiders (*Somateria mollissima v-nigrum*)

Principal Investigator(s): Margaret R. Petersen, USGS, Alaska Science Center, 1011 E. Tudor Road, Anchorage, AK 99503. Margaret_Petersen@usgs.gov

Partners (FY03): SDJV; USGS, USGS Science Support (SS) Funds; and BP Exploration (AK) Inc. on behalf of Prudhoe Bay Unit owners.

Project Description: Long-term declines of common eiders and long-tailed ducks have been reported in Alaska, including populations on the North Slope. The causes of these declines are unknown. I used satellite telemetry to characterize use of the Beaufort Sea during migration and to identify wintering and staging areas of common eiders and long-tailed ducks. The study is designed to evaluate differences in timing of migration and areas used among years in relation to variation in ice distribution and other factors including weather and timing of nest initiation and molt.

Objectives: The primary objectives of this study were to locate and describe migration corridors, staging habitats, and habitats used by common eiders and long-tailed ducks when migrating in fall and spring through the Beaufort Sea. I expect to identify areas used by the Beaufort Sea breeding population of common eiders throughout the year and identify the breeding origins and wintering areas of long-tailed ducks who molt in coastal estuaries along the Beaufort Sea. These data will provide information key to effectively managing these populations of sea ducks.

Preliminary Results (FY03): Adult female long-tailed ducks were marked in August 2002 and provided data through autumn migration (2002), winter (2002-2003), spring migration (2003), nesting (2003), and migration to molting areas (2003). The results from fall and winter are available at the SDJV (<http://seaduckjv.org/>) and USGS, Alaska Science Center (<http://www.absc.usgs.gov/research/seaducks/>) web sites. Long-tailed ducks used waters of the Beaufort Sea from four to six weeks in autumn; birds were generally present until early to mid-October 2002. Ducks wintered along coastal waters from the US and Canada in the east and Russia and Japan to the west. Spring migration of 10 birds began during a seven week period from 18 April to 8 June, and hens arrived to nesting areas by mid-June. As with autumn, spring migration was generally coastal and protracted; one bird moved from Cook Inlet overland through central Alaska.

Project Status: In 2003, thirty satellite transmitters were deployed during July in adult female common eiders nesting on the Barrier Islands of Simpson Lagoon, Alaska. Twelve transmitters are providing signals daily and will continue transmitting until early December when the batteries are expected to fail. Eighteen transmitters were

programmed to provide data once every eight days until early May when they will begin transmitting daily until about 15 July or the batteries are exhausted. This completes the sample of common eiders for this study.

Ten of 30 satellite transmitters were deployed in flightless adult female long-tailed ducks in August 2003. These were 10 of the 18 transmitters designed to provide data of spring migration in 2004. This will provide a general picture of spring migration for 2004, but will not provide an adequate sample size for comparison to the 2003 data. Plans are to deploy the 12 transmitters to gather data on fall migration in 2004. The eight remaining transmitters for spring migration data will also be deployed in 2004 and the sample augmented to provide an adequate sample size for annual comparisons.

Location data from long-tailed ducks marked in FY2003 will be collected primarily in FY2004 when birds are expected to begin fall migration and arrive to wintering areas (October through December 2003). Plans are to complete satellite transmitter deployment for long-tailed ducks in August 2004 and data collection in August 2005.