

**Sea Duck Joint Venture
Annual Project Summary for Endorsed Projects
FY07 – (October 1, 2006 to September 28, 2007)**

Project Title: (SDJV project #88) Testing the demographic independence of molting groups using Common Mergansers on the Kodiak National Wildlife Refuge, Alaska

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Project Description: A one-year project to: (1) continue banding of birds for estimation of survival probability at Karluk Lake, and (2) further establish the genetic origins of molting male Common Mergansers on Kodiak Island, Alaska and search for recaptures at molt locations adjacent to Karluk Lake.

Objectives for FY 2007:

1. Continue DNA sampling, marking and recapture of molting Common Mergansers at Karluk Lake to enable an estimate of annual survival (conditioned by migratory distance), capture probability, and molt site fidelity.
2. Capture molting Common Mergansers on fresh and salt water areas near Karluk Lake to further examine molt site fidelity and determine home range origins using mitochondrial (mt) DNA.

Preliminary Results (ordered by objectives listed above):

Objective 1. We captured a total of 39 molting Common Mergansers on Karluk Lake in mid-July 2007 (Table 1). Similar to 2006, only two recaptures were observed even though we captured 27–59% of birds estimated to be on the lake in each year (Table 1). The small number of recaptures makes an estimate of survival probability for these birds intractable and suggests that molt site fidelity may be low for Common Mergansers.

Table 1. Number of molting Common Merganser captured annually on Karluk Lake, Kodiak Island, Alaska from 2005-2007.

Year	Number captured	Average number molting birds*	Number of recaptures
2005	85	142	-
2006	52	148	2
2007	39	141	2

*Based on shoreline boat survey conducted before and after the time of molt captures.

MtDNA sequencing data from Karluk Lake (2005-2007) also suggest that the genetic composition of molting birds at this location varies annually. Thus, proportions of different breeding populations likely change across year at each molting site.

Objective 2. From 11 – 15 August, 2007 we captured a total of 160 molting Common Mergansers across four new locations (in addition to Karluk Lake) on Kodiak Island (Fig. 1). These included three salt water locations (Uyak, Uganik and Terror Bays) and one fresh water location (Frazer Lake). Genetic samples were collected from all captured birds. No previously marked birds were recaptured at the four new capture locations.

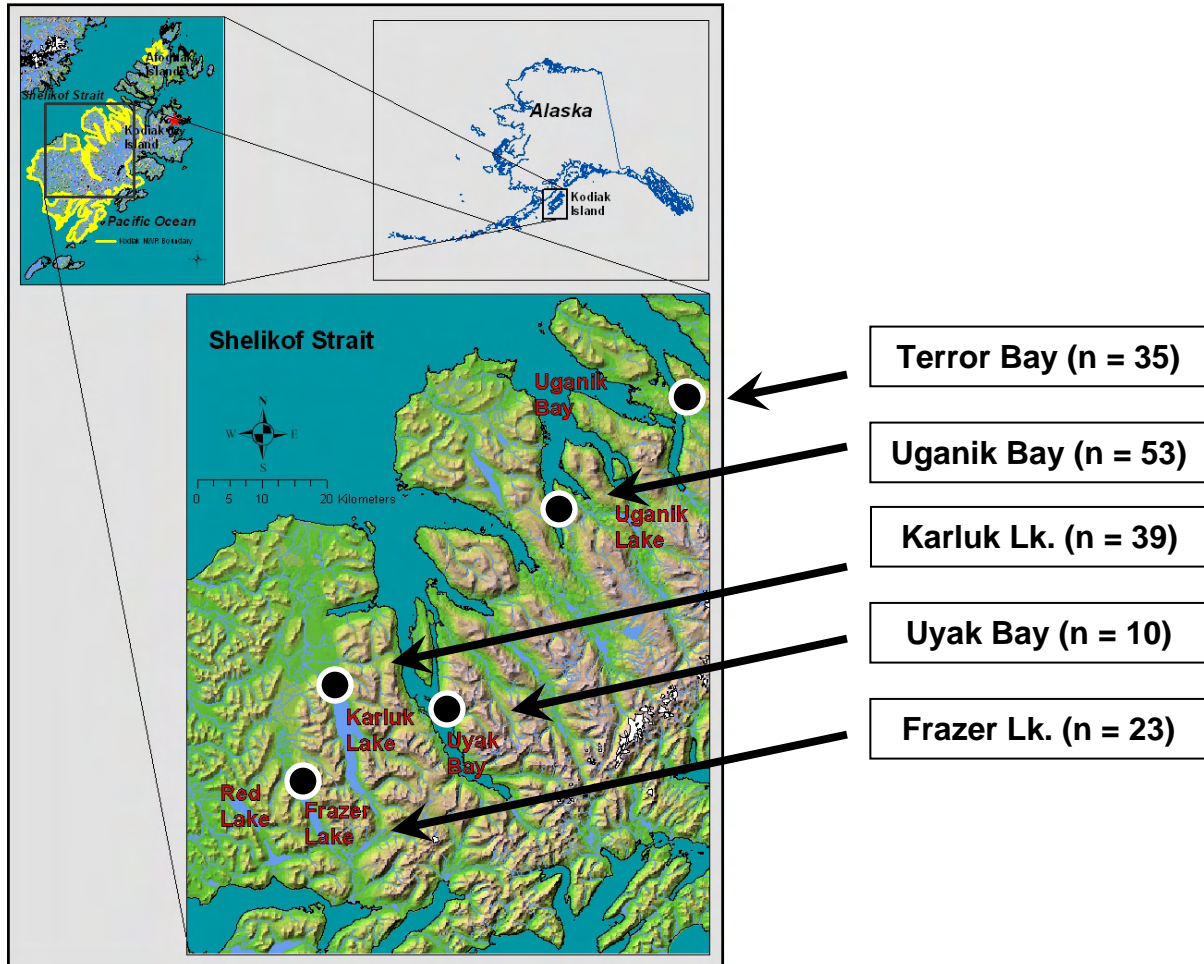


Figure 1. Locations (black dots) and number of molting Common Mergansers captured in July, 2007 on the southwestern portion of Kodiak Island, Alaska.

Project Status: While we accomplished our objectives of capture and sampling of DNA and morphological measures from all molting birds in 2007, we were unable to increase our capture probability due to the apparent low molting site fidelity of these birds. We propose to conduct a fourth year of captures on Kodiak Island across a broader time scale in an effort to detect any additional bands and better understand the timing of molt and the influence of timing on recapture probability (see Pearce and Zwiefelhofer SDJV

FY08 proposal, “An apparent lack of molt site fidelity by male Common Mergansers: further assessment on Kodiak Island, Alaska”.

The mtDNA sequencing of all genetic samples collected in 2007 is complete and results are being summarized and incorporated into a manuscript that will be submitted to an ornithological journal in 2008. A summary of Karluk Lake genetic data from 2005-2007 is shown in our FY08 SDJV proposal, “An apparent lack of molt site fidelity by male Common Mergansers: further assessment on Kodiak Island, Alaska”.