Sea Duck Joint Venture
Annual Project Summary for Endorsed Projects
FY 2007 – (1 October 2006 to 30 September 2007)

Project Title: Survival and Productivity of Pacific Common Eiders Breeding at Kigigak Island, Yukon Delta National Wildlife Refuge, Alaska

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Project Description: Aerial surveys have documented a >90% population reduction over the past 40 years in the Yukon-Kuskokwim Delta population of Pacific common eiders (Stehn et al. 1993, Hodges et al. 1996) and the U.S. Fish and Wildlife Service (Region 7) has identified Pacific common eiders as a "*focal species*" (USFWS 2006). This study builds upon a previously established sample of marked adult females (n = 190) and ducklings (n = 250) at one site (Kigigak Island) in an effort to characterize annual variation in survival and productivity.

In 2007, we monitored a sample of common eider nests and adult females.

139 common eider nests were located in 2007 and 67 adult females were resighted. An additional 17 females were banded.

Objectives:

1. **Estimate nest initiation date, hatch date, clutch size, and nest success.**
2. **Document nest habitat type and record nest location.**
3. **Resight or trap incubating females to identify previously marked individuals for estimation of survival. Capture and mark additional females.**
4. **Estimate mean annual survival and temporal variation in annual survival.**
5. **Incorporate estimates of demographic parameters into a Pacific common eider population model.**

Preliminary Results:

Nesting Chronology

During 40 days of nest searching, 139 nests were located. Estimated mean nest initiation and hatch dates were 20 May (range 10 May – 13 June) and 21 June (range 11 June – 12 July), respectively.

Clutch and Egg Size

Clutch size ranged from 2 – 11 eggs with mean clutch size of 5.7. Mean egg length, width, and volume were 74.9mm, 47.9mm, and 187.2cc, respectively.

Nest success
Estimated daily survival rate for common eider nests was 0.995 (SE = 0.001) and was lower than the daily survival rate estimated for sympatrically nesting spectacled eiders (DSR = 0.997, SE = 0.0001). Assuming a constant daily survival rate and an exposure period of 32 days, estimated common eider nest success was 85.7% (95% CI; 76.2.0-91.6).

Marked Adult Females
We identified 67 previously marked females, and an additional 17 unmarked females were captured and banded.

Marked Ducklings
No ducklings were banded in 2007. Notably, none of the 250 ducklings banded in the nest bowl during 2003 and 2004 have returned and been observed as a nesting female.

Project Status:
Ongoing.