

Sea Duck Joint Venture
Annual Project Summary for Endorsed Projects
FY 02 – (October 1 to Sept 30)

Project Title: No. 2: Identification of Beaufort Sea Migration Corridor for Sea Ducks

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Partners: USFWS, SDJV; USFWS Migratory Bird Management; Polar Continental Shelf Project, Natural Resources Canada

Project Description: Oil development is increasing along the U.S. coast of the Beaufort Sea. This area is extremely important during migration for three species of sea ducks that are currently in decline: the Pacific race of common eider, the king eider and long-tailed duck. Although there is some information on migration, little is known about the specific migration pathways and habitats used by these sea ducks. Hence, it is difficult to predict the degree of potential threats of expanded oil development. Using satellite telemetry, this study is providing information about the location and timing of use of migration corridors, so that analysts can better predict and mitigate any adverse effects of offshore oil development on subject populations. The study is also providing information on affiliations between wintering, breeding and moulting grounds, thereby helping to define populations units. Such information is essential to effectively manage a harvested species.

The long-term goal of this study is to put satellite transmitters on 40 individuals of each species at three different sites on their Canadian breeding grounds, then track their movement to moulting and wintering areas. The focus in the first two years of the study was on common eiders nesting just east of Bathurst Inlet, Nunavut.

Objectives in 2002: The primary objectives of the study are: 1) to determine specific migration routes for declining western Canadian breeding populations of eiders and long-tailed ducks, 2) to document temporal and spatial relationships of migrating eiders and long-tailed ducks to pack ice, islands, shorelines and other physical features of the Beaufort Sea, and 3) to identify wintering, staging and moulting areas, and their affiliation with specific breeding areas.

Other incidental benefits include: 1) identification of important coastal habitats for sea ducks, 2) collection of tissues for genetics and contaminant analyses, 3) provision of information to develop more effective survey techniques to monitor the status of populations.

Preliminary Results: Satellite transmitters were successfully implanted in 14 common eiders in 2001 (8 males and 6 females) and 17 in 2002 (9 males and 8 females). All were captured with a large mist net in June prior to nest initiation as they moved between their nesting colony on a freshwater lake and a nearby marine feeding area. In both years, all

of the females stayed within 50 km of the nesting colony to moult. Conversely, the males dispersed widely to moult in locations as near as Bathurst Inlet and as far away as the Chukchi Sea (Figures 1 and 2). The three males that crossed the Beaufort Sea to moult each staged briefly off the Alaskan Beaufort Sea coast in mid summer between Camden Bay and Colville River delta. At time of writing in late September, all of the eiders tagged in 2002 were still on their moulting areas. Fall migration in 2001 occurred in October with the males leaving 1 - 2 weeks earlier than the females. Migration through the Alaskan part of the Beaufort Sea was rapid (1 - 4 days, n=11 eiders). All had arrived on the wintering area off the south and east coasts of Chukotsk Peninsula, Russia by the end of October (Figure 3). By spring, only two females had functioning transmitters. Migration began in early April for one bird and mid May for the other. Despite the different starting dates, both were in Lambert Channel, a staging area not far from the nesting grounds, by the end of May. One transmitter lasted long enough to show the female had returned to the same nesting colony as in the previous year.

Project Status: To obtain more details on the timing and location of common eiders in relation to offshore oil development in the Beaufort Sea, we requested transmitters for 2002 be programmed to transmit for 4 h every 8 h during the migration period. Unfortunately, due to an error in programming the transmitters, we will not obtain much information on location of the eiders during migration. The manufacturer has offered to replace the transmitters which we will deploy at the same location in June 2003. In addition, we are seeking funding to implant 18 satellite transmitters in king eiders and long-tailed ducks on their breeding grounds on Victoria Island, NWT in 2003.

Project Funding Sources for FY 02:

SDJV (USFWS) Contribution	Other US federal contribution	US non-federal contribution	Canadian federal contribution	Canadian non-federal contribution	Source of funding (agency or organization)
\$72,000					USFWS, SDJV
	\$15,000				USFWS, MBM
			\$28,800		CWS
			\$11,700		Polar Continental Shelf Project

Total Expenditures (SDJV plus partner contributions) by Category in FY 02:

ACTIVITY	BREEDING	MOLTING	MIGRATION	WINTERING	TOTAL
Banding					
Surveys					
Research			\$127,500		\$127,500
Communication					
Coordination					

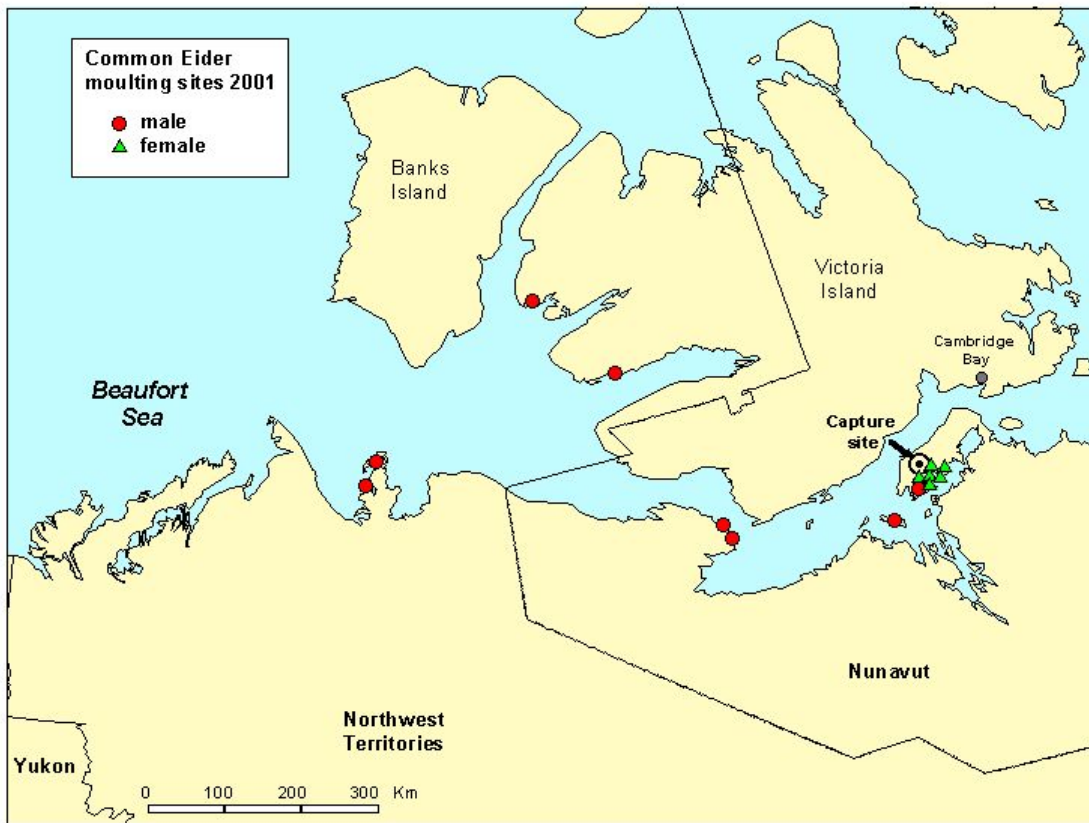


Figure 1. Location of moulting areas of Common Eiders tagged with satellite transmitters at Nauyuk Lake, Nunavut in June, 2001.

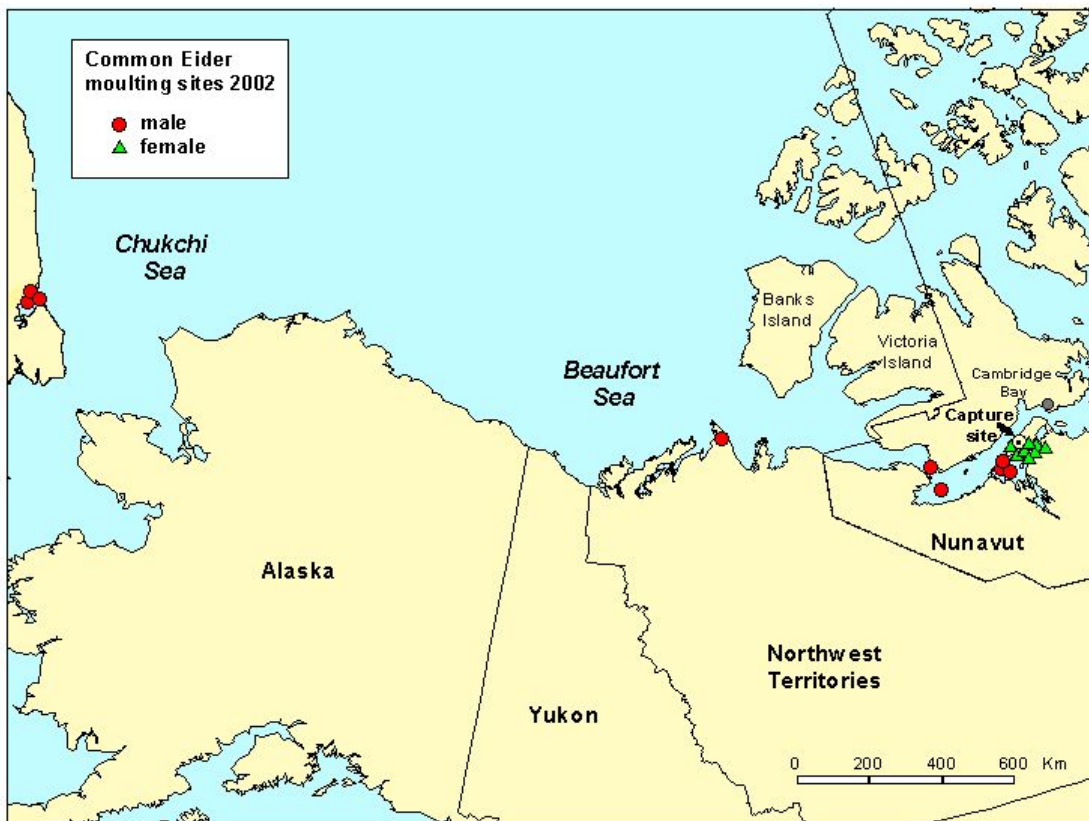


Figure 2. Location of moulting areas of Common Eiders tagged with satellite transmitters at Nauyuk Lake, Nunavut in June, 2002.

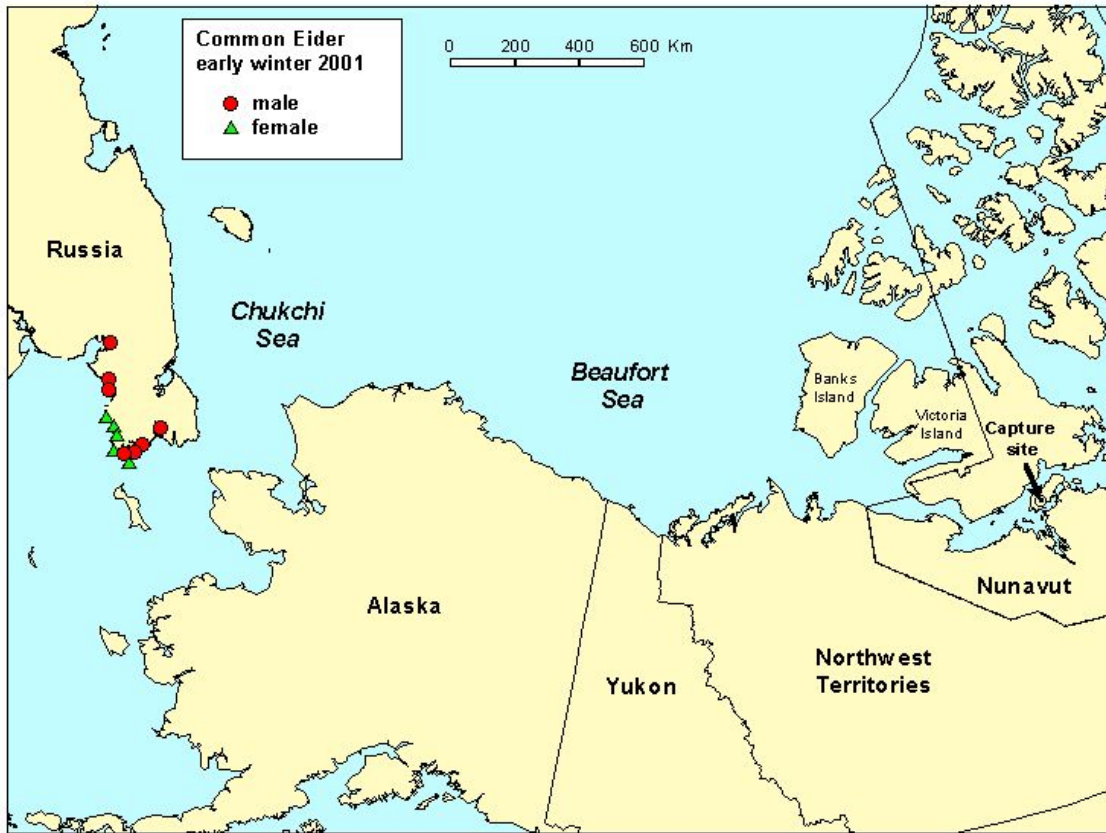


Figure 3. Location of wintering area for Common Eiders tagged with satellite transmitters at Nauyak Lake, Nunavut in June 2001.

