

Sea Duck Joint Venture
Annual Project Summary for Endorsed Projects
FY 02 – (October 1, 2001 to Sept 30, 2002)

Project Title: No. 19: Breeding Ecology of White-winged Scoters on the Yukon Flats National Wildlife Refuge, Alaska

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Partners: USFWS, Yukon Flats National Wildlife Refuge; USFWS, SDJV; Department of Biology and Wildlife and Institute of Arctic Biology, University of Alaska Fairbanks; USGS, Cooperative Fish and Wildlife Research Unit



Project Description: Breeding bird surveys indicate a long-term decline in the numbers of White-winged Scoters breeding in Alaska. The highest density breeding areas occur in Northwest Canada and Northeast Alaska, with the largest breeding population in Alaska found on the Yukon Flats National Wildlife Refuge. Little is known about the reproductive life history and breeding habitat of White-winged Scoters on their primary breeding grounds. We are using VHF transmitters to mark and locate nests of breeding females at the Bear Camp Lake Complex, Yukon Flats NWR. We are using surveys and auxiliary markers to study brood rearing ecology of White-winged Scoters throughout the Yukon Flats NWR.

Objectives: We will estimate nesting success and brood survival of White-winged Scoters in their principle breeding range. Nesting success will be studied at the Bear Camp Lake Complex. We will evaluate brood survival over a broader geographic range within the Yukon Flats NWR because approaches for estimating this parameter allow more extensive sampling than the approaches for studying nest success. In addition, we will characterize the habitats selected by breeding females. This study will provide critical management information on the population dynamics and habitat requirements of White-winged Scoter in their primary breeding range.

Preliminary Results: We conducted a pilot field season during the summer of 2002 at two field sites on the Yukon Flats NWR. We successfully trapped and radio marked 10 female Scoters at each site during the first week of June 2002. Nineteen of the marked females remained in the general study area for the next month and we located the nests of two marked females. Several of our observations (e.g., flocked females), however, indicate that our reduced sampling effort (i.e., we did not locate females until 10 days after marking) during this pilot year may not have detected extensive and early nesting failure. We have telemetry locations and ancillary information that indicates breeding by two additional marked females and the remaining marked

females behaved (e.g., occurred in large flocks of adult females) similar to marked females known to have failed at breeding. We also located the nests of five unmarked females with limited search effort. All of the nests we found were destroyed prior to hatch and we found remains of two of the hens near the nest site, indicating the importance of breeding ecology studies. Nests were generally located at the base of a spruce tree adjacent to a forest clearing and distance to water varied from 8 to 380 m. We were able to survey and monitor Scoter broods at both study sites. Most scoters formed crèches of up to 80 ducklings, usually attended by one sub-adult female. Repeated brood surveys indicate that brood survival is probably quite high, with limited sources of duckling mortality. We plan to capture and mark duckling at hatching in the future to study duckling survival and established a marked populations for age-specific studies of population demography.

Project Status: Our pilot season was successful, providing valuable information on breeding ecology of Scoters, study techniques, and study-site selection. The reduced sampling effort during the pilot season was not sufficient to estimate all the parameters with adequate precision; however, we developed viable field techniques during the summer 2002. Using the information gained from the pilot season, we are proposing more intensive sampling effort for the summers of 2003 and 2004 to estimate nesting success and brood survival.

Project Funding Sources (US\$):

SDJV (USFWS) Contribution	Other U.S. federal contributions	U.S. non-federal contributions	Canadian federal contributions	Canadian non-federal contributions	Source of funding (agency or organization)
5,000					USFWS, SDJV
	70,000 ¹				Yukon Flats NWR
		14,172			Institute of Arctic Biology

Total Expenditures by Category (US\$) (complete only if project is funded by a SDJV partner e.g., USFWS, CWS, DU, USGS, or Flyway rep; dollar amounts should include all partner contributions):

ACTIVITY	BREEDING	MOLTING	MIGRATION	WINTERING	TOTAL
Banding					
Surveys					
Research	89,172				
Communication					
Coordination					

¹ Monetary and in-kind support.