

**Sea Duck Joint Venture
Annual Project Summary for Endorsed Projects
FY 03**

Project Title: Population delineation, winter/spring habitat use and migration ecology of White-winged Scoters (*M. fusca*) and Surf Scoters (*M. perspicillata*)

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Partners: US Fish and Wildlife Service, US Geological Survey, NSERC Strategic Grant

Project Description: Understanding population structure, i.e., identifying population segments that are demographically distinct, is critical for addressing declines in scoter populations. Without documenting the geographic scale at which dynamics of population segments are independent, surveys cannot be interpreted at the scale of distinct subpopulations, which results in poor resolution for discerning causes of overall declines. Similarly, the inference from local research projects (e.g., documenting survival, production, contaminants, etc.) is unknown without some indication of the population segment to which the results apply. Thus, identification of “management units” is a logical and important first step for effective conservation efforts for scoters.

Both White-winged Scoters (*M. fusca*) and Surf Scoters (*M. perspicillata*) winter in large numbers in coastal B.C. Currently, these birds are under threat from an expanding shellfish aquaculture industry, proposed offshore oil/gas exploration and development of coastal wind-power turbines. Aquaculture operations and scoters use similar coastal habitat features and, as a result, their distributions overlap considerably. Turbines are being proposed for a number of shallow water (< 15m depth) areas used by wintering scoters and the potential threat from the oil/gas industry is well known. In combination with these and other potential threats, we know very little about how scoters use coastal habitats, in particular their habitat use and movement patterns and how these might be affected by coastal developments. Scoters forage intensively on herring spawn in spring and this food source may be important to individual body condition, migration success and perhaps even reproductive success. Finally, information is needed on the timing of movements and affiliations between wintering, breeding and molting areas to accurately interpret spring survey data.

Satellite (PTT) telemetry is currently the best tool to monitor the movements of scoters over vast, remote regions. We proposed to use PTTs to describe the timing of movement and route(s) taken between wintering and breeding sites as well as important locations used during spring migration, breeding, molting and

fall staging periods. In spring, we were also especially interested in tracking birds to herring spawn sites in coastal B.C. and Alaska.

Objectives: For Surf and White-winged Scoters wintering in the Strait of Georgia we proposed to describe their key migration routes, timing of movements, breeding and molting areas, and their habitat use patterns in winter and spring, with special emphasis on aquaculture and herring spawn sites.

Preliminary Results: During 10-18 December 2002, we surgically implanted PTTs in 13 after-second-year white-winged scoters (7 female and 6 male) in Baynes Sound, B.C. All PTT-tagged birds survived through the winter and all migrated in spring. Several birds were tracked to herring spawn sites in March where they remained for several weeks. In early April, 3 birds moved north along the B.C. coast and staged near the Queen Charlotte Islands for 3-4 weeks before migrating directly to the NWT. At about the same time, the remaining 10 birds flew almost directly to northern Alberta and the NWT. From the Argos data, it appears that some females bred successfully. At the time of this writing, some females are still on the breeding grounds, some males and females have returned to the coast, and a few birds are on their winter grounds. Maps showing the migration patterns of our scoters can be seen by visiting the following SDJV web site: http://www.seaduckjv.org/sts_bc_maps.html.

We successfully marked 75 scoters (equally split between White-winged and Surfs) with implant VHF transmitters and tracked these birds for the entire winter-spring period. Many of the tagged birds moved to local herring spawn sites in March before migrating north. Foraging behavior and habitat use of these birds were investigated by a SFU grad student. The telemetry data will be analysed to compute survival rates.

Project Status: We are very pleased with the success of the project. We were able to capture and mark the desired age/sex cohorts of white-winged scoters. All birds survived the winter period, most made it to the breeding grounds, some bred successfully, and several have already returned to their winter areas. We look forward to tracking another 10 white-winged scoters this coming year to document inter-annual variation in migration patterns and breeding ground affiliations. We are also looking forward to summarizing the results of this project once all the data have been collected.

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)
\$27000					SDJV/USFWS
	\$1000				USGS (in kind)
			\$25000		CWS
				\$10000	SFU NSERC grant

Total Expenditures by Category (US\$):

ACTIVITY	BREEDING	MOLTING	MIGRATION	WINTERING	TOTAL
Banding					
Surveys					
Research			\$31,500	\$31,500	
Communication					
Coordination					