Sea Duck Joint Venture
Annual Project Summary for Endorsed Projects
FY 04

Project Title: SDJV Project #26: 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, 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: In 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.

In December 2003, we implanted PTTs in 10 after-second-year white-winged scoters (6 female and 4 male) in Baynes Sound, B.C. Most PTT-tagged birds survived the winter and migrated in spring. Most birds repeated the same northward migration pattern as in the previous spring, flying almost directly to the NWT. A few birds, however, migrated to breeding grounds farther to the east (Sask. and even Man.).

Also, in December 2003, we were able to take advantage of the availability of 5 PTTs to mark black scoters. We implanted these into 5 female, after-second-year birds in Baynes Sound, B.C. Four tagged birds survived the winter and all migrated in spring, following the almost the exact same coastal route to southwest Alaska.

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.

In addition to the PTTs, we marked 75 scoters (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 were able to capture and mark the desired age/sex cohorts of white-winged and black scoters. Most 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 at least 10 surf

scoters this coming year to document migration patterns and breeding ground affiliations.

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)
$41650					SDJV
	$1000				USGS (in kind)
			$25000		CWS
				$10000	SFU NSERC grant

Total Expenditures by Category (US$):

ACTIVITY	BREEDING	MOLTING	MIGRATION	WINTERING	TOTAL
Banding					
Surveys					
Research	$15,530	**$7765**	$38,825	$15,530	**$77,650**
Communication					
Coordination					