Sea Duck Joint Venture Annual Project Summary for Endorsed Projects
FY 2003 – (October 1, 2002 to Sept 30, 2003)

Project Title: No. 28: Determination of breeding area, migration routes, and local movements associated with Surf and White-winged Scoters wintering in the inner marine waters of Washington State.

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Partners: Canadian Wildlife Service (CWS), USGS, and University of Wyoming.

Project Description: The marine areas of Western Washington have experienced rapid population growth, development, and alteration of natural resources that threaten habitat quality and food resources for a variety of sea ducks in the region, most notably Surf and White-winged Scoters. This combination of anthropogenic pressures and decadal variation in oceanic climate has the potential to severely impact sea duck populations. Scoters in particular are sensitive to disturbance of their non-breeding habitats, as well as their breeding areas.

Western Washington marine waters have historically hosted one of the more notable wintering scoter concentrations on the west coast of North America, comprised mostly of Surf and White-winged scoters. Based on both historic and ongoing monitoring surveys for these species, declines of at least 59% ($P<0.001$) have been documented between 1978 and 1999. Similar declines have been documented throughout North America. There have been a few definitive studies evaluating the factors that may be contributing to these declines, and how various sub-populations may be responding. Information on foraging areas, migration routes, breeding areas, and molting areas are needed to address potential causes of the declines in these species.

Objectives: The project documents the patterns and fidelity to winter and spring foraging areas, night roosting areas, migration routes, breeding sites or range, and molting areas of White-winged Scoters that winter in the inner marine waters of Washington State. Documentation of this information is required in order to address the causes of scoter population declines and enact more effective management of these species.

Preliminary Results: Scoters were captured with floating mist nets between February 28 and March 14, 2003 in two areas of southern Puget Sound (SPS): Peale Passage and Henderson Inlet, WA, USA. The nets were set in areas frequented by White-winged Scoters. The nine days when capture efforts were implemented resulted in the live-capture of 22 White-winged and 24 Surf Scoters. Ten (5 males and 5 females) of the 22 White-wings were adult (ATY) and were selected for implantation of satellite PTT's (PTT-100 satellite transmitters [39 g] manufactured by Microwave Telemetry Inc., Columbia, Maryland). Five of these birds implanted were from scoters captured in Henderson Inlet and the other five were from scoters captured in the Peale Passage. All captures occurred during pre-dawn and early post-dawn periods of each day, as scoters were flying into the feeding areas from their resting areas used at night. Blood, feather, and fat samples were collected from both species and shared with USGS (Genetics, Anchorage office), Canadian Wildlife Service (University of Saskatchewan), and University of Wyoming research (Dr. James Lovvorn and Eric Anderson).

Pre-northern migration: All 10 White-winged Scoters remained in the same areas of the SPS during the early spring. Of the eight that survived, the departure dates from the SPS ranged from 14 April through 9 May. Most of the birds then moved to areas of the northern greater Puget Sound (NPS) and the Fraser River Delta. Generally, the birds that left the SPS earlier spent more time in the NPS, while the birds that stayed longer in the SPS spent less time in the NPS. Dates of departure from the NPS ranged from 7 May through 18 May.

Northern migration staging areas: Two scoters reported locations in central British Columbia during the northern migration (one of these then continued onto west-central Alberta). The remaining six scoters stopped in west-central Alberta during the northern migration.

Breeding areas: Two scoters (male #19, female #18) remained in the central Alberta area. However, location data from these birds has been poor and infrequent. Two females (#20 and #24) stayed on lakes further north near the central border of Alberta and the Northwest Territories (NWT). Arrival times here ranged from 14 May to 25 May. The female (#20) that arrived here on 14 May is still located in the same general area. Two other scoters (male #22 and female #21 which were suspected to be a pair) continued farther north and arrived on the same lake system in southern-central NWT west of Great Slave Lake between 3 and 4 May. The female is still there, while the male stayed through 4 July. Another female (#92) continued migrating northwards and arrived just to the west of Great Bear Lake in western central NWT on 21 May, and stayed in the same lake system through 15 August. The final male (#23) traveled northwards the most stopping periodically throughout the western NWT up until 19 July.

Southern migration staging areas: Three scoters (males #19 and #23, female #92) made stops in or passed through the same general area in the central and southern portion of southeast Alaska. Dates of visiting this area ranged from 22 June to 19 August. One male (#22) stopped in central Alberta (in the same general location as the northern stopover), before stopping again along the Pacific Coast of Washington State, en route to the coast outside of Humboldt Bay, California. One female (#24) stopped in north-central Alberta en route to Washington.

Molting areas: Females #20 and #21 (possibly pulling off successful clutch's) have stayed near their respective breeding lakes in Alberta and the NWT until at least 15 September for one and still present for the other. Of the other two females known to have left the breeding areas, #24 arrived along the southern shores of eastern Strait of Juan de Fuca, Washington, on 10 August, while #92 arrived near Oak Harbor, Washington, on 23 August. Of the two males that are reporting frequently, #23 arrived at the Fraser River delta on 1 August, while #22 arrived and stayed near Humboldt Bay, California, between 26 July and 22 September. All but two of these scoters are still in their respective molting areas at the time of this report. Those two, our suspected pair: male#22 and female #21, returned to southern Puget Sound by 26 September.

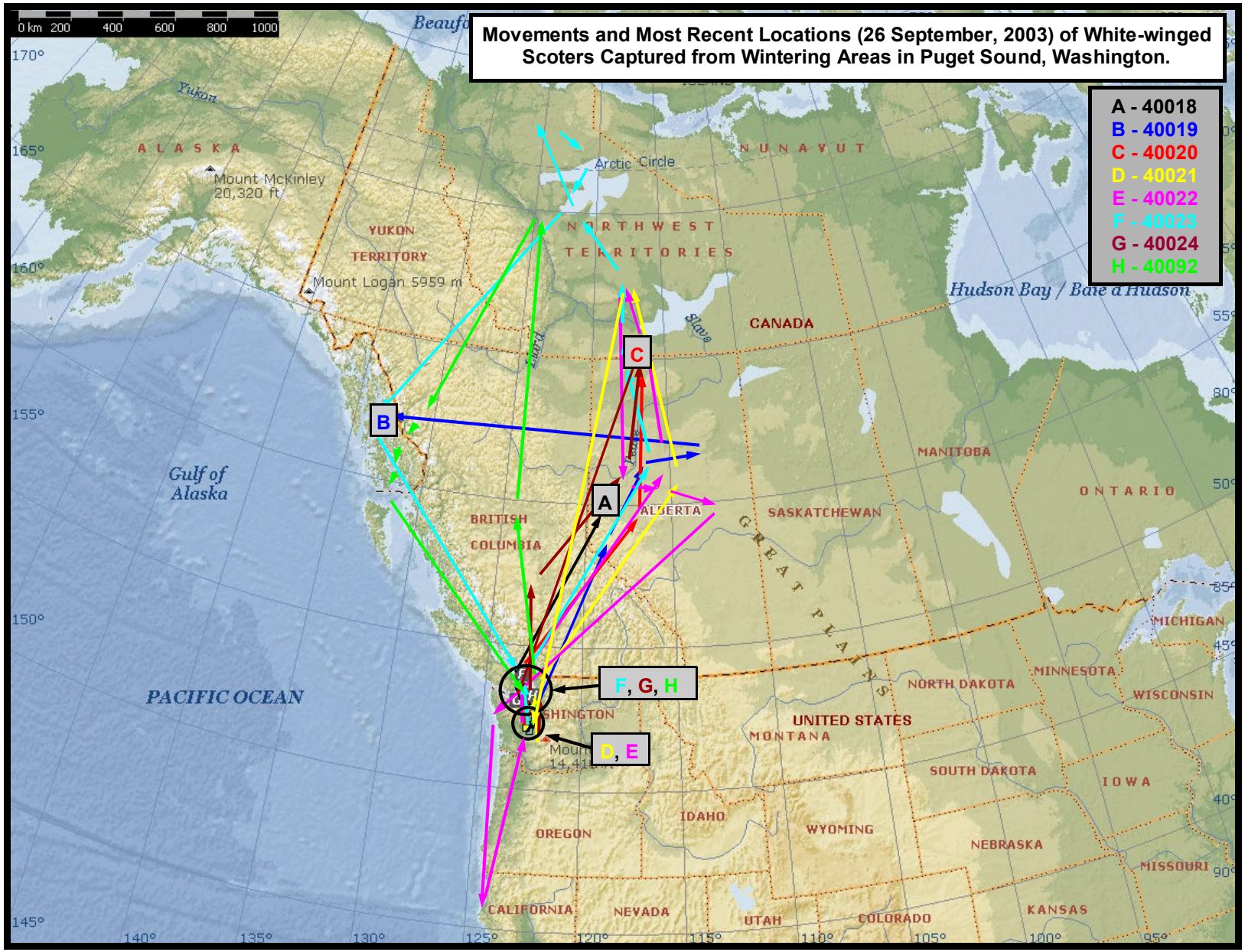
Project Status: We are encouraged with the initial success of the project. We are still receiving frequent location data from six scoters, and less frequents from the other two. Maps of these data have been distributed to interested and collaborative agencies on a frequent basis, while a web site is being completed once map issues are resolved. While the tracking patterns of Washington White-winged Scoters have some degree of overlap with the British Columbia effort, we feel that there were clear enough differences and usage patterns, which are important for understanding and managing these species. We plan to continue and add to these efforts during the next two years by implanting PTT's in 10 more White-winged Scoters, while adding work on Surf Scoters. We hope to capture scoters in other sub-regions within western Washington to compare with those associated with southern Puget Sound.

Project Funding Sources (US$) (complete only if funded by a SDJV partner**):**

SDJV (USFWS) Contribution	Other U.S. federal contributions	U.S. State non-federal contributions	Canadian federal contributions	Canadian non-federal contributions	Source of funding (agency or organization)
$24,300		$75,897			WDFW and SDJV

Total Expenditures by Category (US$) (complete only if project is funded by a SDJV partner):

ACTIVITY	BREEDING	MOLTING	MIGRATION	WINTERING	TOTAL
Banding					
Surveys					
Research	$25,000	$25,000	$25,000	$25,197	$100,197
Communication					
Coordination					


Movements and Most Recent Locations (26 September, 2003) of White-winged Scoters Captured from Wintering Areas in Puget Sound, Washington.
A - 40018
B - 40019
C - 40020
D - 40021
E - 40022
F - 40023
G - 40024
H - 40092
0 km 200 400 600 800 1000
ALASKA
Mount McKinley 20,320 ft
YUKON TERRITORY
Mount Logan 5959 m
NUNAVUT
Arctic Circle
NORTHWEST TERRITORIES
Hudson Bay / Baie d'Hudson
CANADA
Gulf of Alaska
PACIFIC OCEAN
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
GREAT PLAINS
MICHIGAN
MINNESOTA
WISCONSIN
NORTH DAKOTA
UNITED STATES
MONTANA
SOUTH DAKOTA
IOWA
IDAHO
WYOMING
NEBRASKA
MISSOURI
OREGON
CALIFORNIA
NEVADA
UTAH
COLORADO
KANSAS
A
B
C
D, E
F, G, H