

# POPULATION DELINEATION, WINTER/SPRING HABITAT USE AND MIGRATION ECOLOGY OF WHITE-WINGED SCOTERS

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## Overall Issue/Research Approach

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.

White-winged Scoters (*M. fusca*) winter in large numbers in coastal B.C. Currently, there are a number of potential habitat changes that could have effects on scoter populations, including an expanding shellfish aquaculture industry, proposed offshore oil/gas exploration and development of coastal wind-power turbines. In combination with these and other potential changes, 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 telemetry is currently the best tool to monitor the movements of scoters over vast, remote regions. In conjunction with ongoing studies, we surgically implanted PTTs in after-second-year white-winged scoters (7 female and 6 male) in Baynes Sound, B.C. Movements of the PTT-tagged birds will be monitored for up to 12-13 months. PTT duty cycles are set to optimize location data for the spring and fall migration periods. In this way, the timing of movement and precise route taken between wintering and breeding sites can be determined as well as important locations used during spring migration, breeding, molting and fall staging periods. In spring, we are especially interested in tracking these birds to herring spawn sites in coastal B.C. and Alaska.