

**Sea Duck Joint Venture**  
**Annual Project Summary for Endorsed Projects**  
**FY04 – (October 1, 2003 to September 30, 2004)**

**Project Title:** (SDJV #40) Winter population delineation of white-winged and black scoters along the Pacific Coast

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**Project Description:** Use existing tissue samples to develop genetic signatures for Black scoters and White-winged scoters wintering along the Pacific Coast of North America. Lays the groundwork to examine population delineation in these species.

**Objectives:**

1. Sequence recently obtained samples ( $n = 81$ ; Fig. 1) for ~ 500 nucleotides (nt) of the mtDNA cytochrome *b* region to enlarge the geographic scope of the project conducted by Pearce and Talbot (2002).
2. Develop mtDNA specific primers for ~ 500 nt of the control region and sequence all samples ( $n = 142$ ) to increase the power of among area tests for degree of genetic differentiation.
3. Use all mtDNA sequence data to infer levels of winter site fidelity by testing for genetic differentiation among wintering areas across small and large geographic scales (e.g., among Alaska wintering areas vs. between northern and southern Pacific coastal areas).

**Preliminary Results:** Final results are not yet available (see below).

**Project Status:** Lab work is on-going. Nearly all additional samples have been examined for the cytochrome *b* region of mtDNA. Amplifying true mitochondrial DNA within the control region has proven difficult, which is a common problem among avian population and systematic studies involving mtDNA (Sorenson and Quinn 1998). Additional research and primer development is underway to resolve this issue. Lab work will continue in spring and summer of 2005 with final analyses expected to take place by late 2005. A final report will be made to the Sea Duck Joint Venture as soon as results are available.

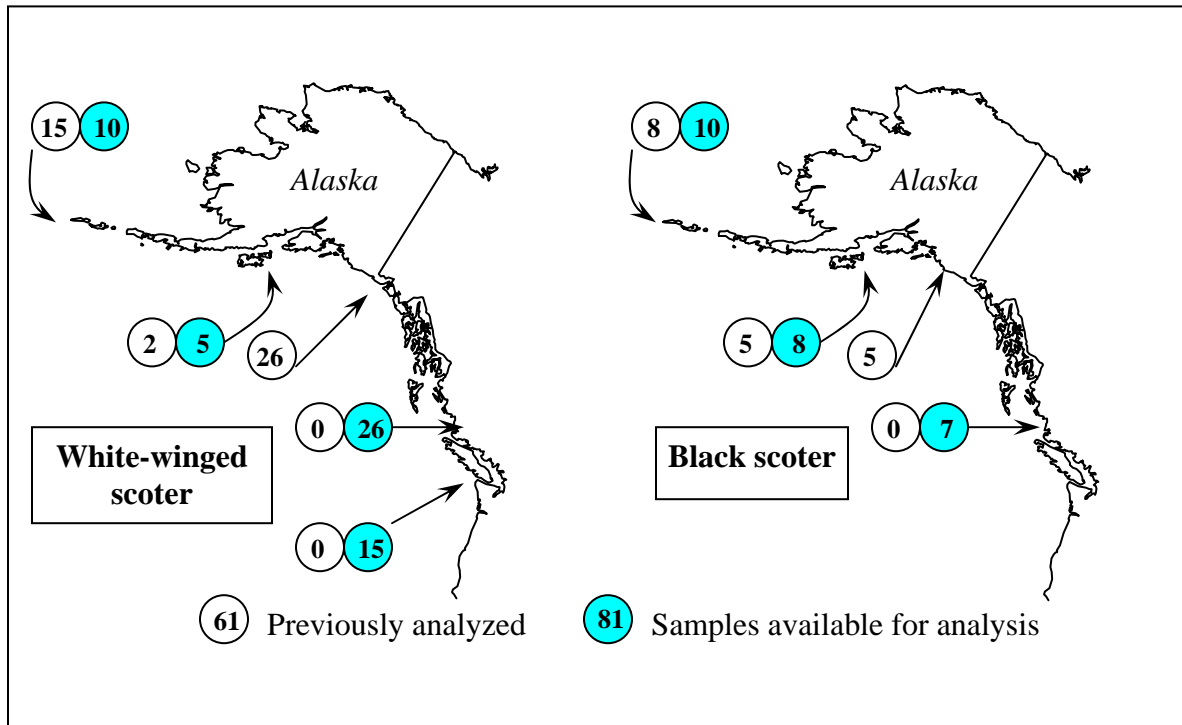


Figure 1. Location and number of DNA samples collected from white-winged and black scoters on Pacific Coast wintering locations. Locations are color coded with respect to which samples were previously examined (Pearce and Talbot 2002) vs. those that are available for analysis.

#### Literature Cited

Pearce, J. M., and S. L. Talbot. 2002. Comparative genetic structure of wintering king eiders, harlequin ducks, and black and white-winged scoters. Oral presentation delivered to the First North American Sea Duck Conference and Workshop. Victoria, B.C.

Sorenson, M. D., and T. W. Quinn. 1998. Numts: a challenge for avian systematics and population biology. *Auk* 115:214–221.