Sea Duck Joint Venture – Annual Project Summary for Endorsed Projects
FY03 – (October 1 to September 30)

Project Title: No. 16: East Coast Eider Initiative

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Partners: Ducks Unlimited Canada

Project Design: The goal of the Eider Initiative is to develop a population model that can be used to guide Common Eider *Somateria mollissima dresseri* harvest regulations and management decisions. Development of such models requires current, detailed information on life-history traits throughout the life-cycle of the species. We will use mark-recapture techniques to obtain estimates of duckling survival, juvenile survival, and breeding propensity, parameter estimates that are currently unknown. We will also use mark-recapture techniques to obtain local estimates of adult female survival. These data are necessary to incorporate into the population models and help us validate our projection models by comparing the projected growth with realized growth rates over the 5-year study period. In addition, this study will use satellite telemetry to provide information on staging and molting areas for adult female Common Eiders. Collection of this data will allow for a stronger understanding of potential constraints on population growth.

We chose Newfoundland and Labrador as the focal point for this research because Common Eiders *Somateria mollissima dresseri* in this region have experienced relatively little historic growth following protection by the MBCA, compared to that of other populations throughout their range. Specific reasons for depressed population growth of eiders nesting in this region are unknown. Factors that may contribute to low growth rates include harvest or other anthropogenic affects such as increased disturbance through aquaculture, inter-tidal harvests, or shipping. To understand constraints to population growth, requires a strong understanding of species-specific life history traits. This information is critical for developing and implementing management strategies that promote sustainable and harvestable populations.

To acquire information needed to build a sound population model, the Eider Initiative will assess geographical variations in: 1) adult female survival, seniority (proportion of experienced breeders in the population), recruitment (proportion of first time breeders in the population), and realized population growth rates; 2) breeding propensity (proportion of females breeding during any one season); 3) duckling survival; 4) sub adult survival; 5) age at first breeding; and 6) the links between breeding and wintering areas, migration chronology, migration pathways, and the location of key moulting areas. Obtaining these objectives are necessary to build a successful population model. This information will be useful for establishing effective science-based management plans.

Objectives: Our objectives are to quantify life-history traits of Common Eiders nesting in Newfoundland and Labrador and to use this information to create a population trajectory model. We will work with other research organizations to use data collected throughout the range of the species, to incorporate variable harvest and survival estimates into these models.

Preliminary Results: This was the first year of the study. This summer was spent visiting potential research sites and testing trapping methods. Under CWS banding permits, we banded 123 adult females and 98 eider ducklings this year. We also observed nearly 1500 eider ducklings during brood surveys of potential research sites. Information gained from the 2003 field season was used to help select research site locations.

Project Status: This research project is ongoing. Banding permits will be acquired during the upcoming year and research sites will be operational in the summer of 2004.