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

Project Title: No. 16: East Coast Eider Initiative (year two of six year study)

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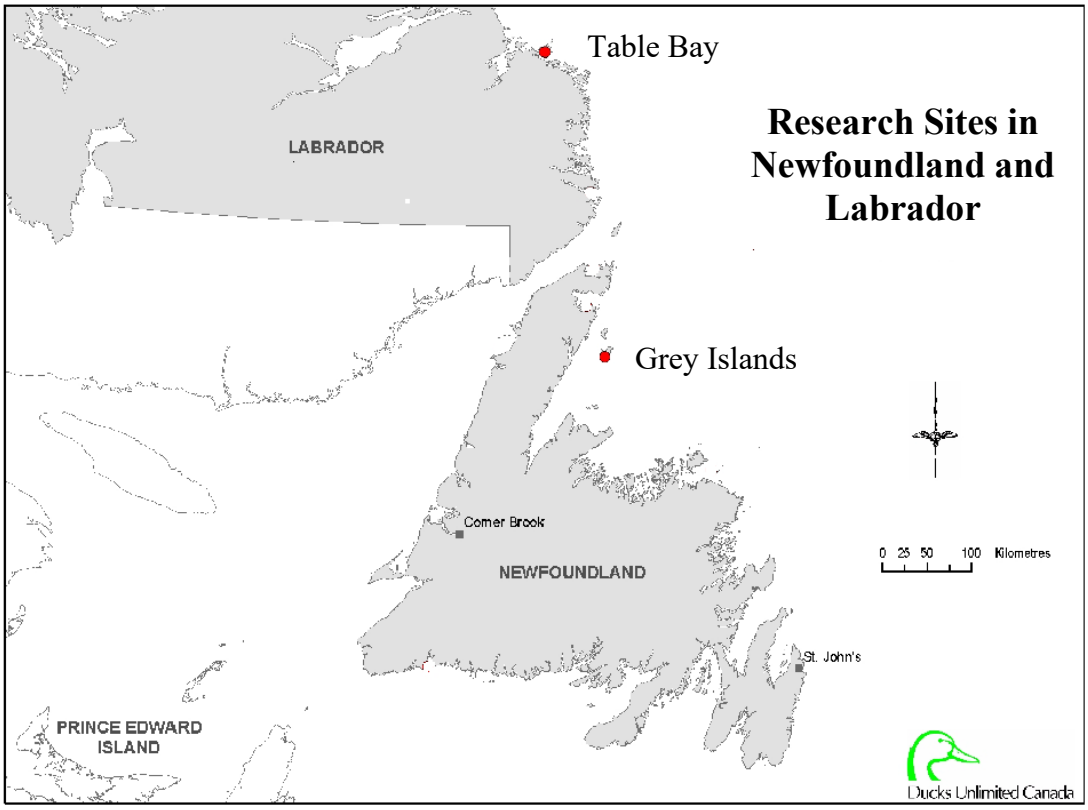
Partners: Ducks Unlimited Canada, Atlantic Canada Opportunities Agency, Canadian Wildlife Service, Newfoundland Department of Tourism, Culture, and Recreation, and Newfoundland Provincial Government Wildlife Service Branch.

Project Design: The goal of the Eider Initiative is to develop a population model useful in guiding 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 chose Newfoundland and Labrador as the focal point for this research because Common Eider populations in this region have experienced relatively little growth following their protection by the Migratory Bird Conservation Act, compared to that of other populations throughout other portions of 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 anthropogenic affects such as harvest or 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.

The Eider Initiative is a five-year (2004 – 2008) research initiative with 2003 as a pilot year. Methods include capturing and banding adult female and duckling Common Eiders on the nest. Mark-recapture techniques will then be used to obtain estimates of juvenile and adult survival, as well as estimates of breeding propensity, and age of first breeding. To assess the feasibility of using mark-resighting techniques to estimate duckling survival, we marked a subset female eiders using temporary attachment methods (nylon coated wire) and ducklings using uniquely color coded nape-tags. Future years of the research will incorporate the use of satellite telemetry to provide information on staging and moulting areas for adult female Common Eiders. Collection of this data will allow for a stronger understanding of possible constraints on population growth.

Objectives: The objectives of the Eider Initiative are to 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) 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. 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. Obtaining these objectives is necessary to build a successful population model and to establish effective science-based management plans.



Preliminary Results: Research for the Ducks Unlimited Canada's Eider Initiative was conducted at 1) Grey Islands, located about 13 km SE of Conch, Newfoundland; and 2) Table Bay, located about 30 km SE of Cartwright, Labrador. Between 7 June and 21 July 2004, we banded a total of 1498 ducklings (n = 419 and 1,079 for Grey Islands and Table Bay, respectively) and 180 adult female Common Eiders (n = 65 and 115 for Grey Islands and Table Bay, respectively). Of the 180 adult females captured, 15 were recaptures marked from previous years (n = 14 and 1 for Grey Islands and Table Bay, respectively). To investigate the feasibility of re-sighting probabilities that would lend to estimates of duckling survival, we marked a subset of ducklings with individually coloured nape-tags (n = 11 ducklings; Grey Islands only) and individually marked adult females using temporary nasal markers (n = 45 and 5 for Grey Islands and Table Bay,

respectively). For all ducklings, we marked and enclosed each in a paper towel envelope before returning them to their natal nest. Five marked ducklings (5-25 days of age; Table Bay) were recovered dead. Apparent death was attributed to gull predation. We re-sighted only eight nasal-marked females (Grey Islands only) and no nape-marked ducklings. Common Eider adults and ducklings banded during 2004 form a solid base for future mark-recapture survival analyses.

Project Status: Given the logistical constraints associated with re-sighting marked females and ducklings, we do not consider re-sighting marked ducklings a viable method for assessing duckling survival in Newfoundland and Labrador. Increased search efforts and telemetry are likely necessary to gain a large enough sample size of marked duckling re-sights. We do not plan to nape-mark ducklings during 2005. This research project is ongoing.

Project Funding Sources (US$).

Canadian federal contributions	Canadian non-federal contributions	Source of funding (agency or organization)
$120,440		Atlantic Canada Opportunities Agency
	$37,500	Newfoundland Department of Tourism, Culture, and Recreation
	$3,015	Newfoundland Provincial Wildlife Service Branch (in kind)
$2,250		Canadian Wildlife Service (in kind)
	$7,500	Newfoundland and Labrador Legacy Trust