# Sea Duck Joint Venture
# Annual Project Summary for Endorsed Projects
**FY 2005 – (October 1, 2004 to Sept 30, 2005)**

**Project Title:** No. 39. Distribution and abundance of King Eiders, Long-tailed Ducks, and Canada Geese on western Victoria Island. Year 2 of a 2 year study.

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**Partners:** Sea Duck Joint Venture; Canadian Wildlife Service; U.S. Fish and Wildlife Service; Arctic Goose Joint Venture; Central Flyway Council; Polar Continental Shelf Project; Inuvialuit Final Agreement

**Project Description:** Current North American waterfowl breeding population surveys do not adequately cover breeding grounds for King Eiders and Long-tailed Ducks within Canada. In recognition of this problem, as well as growing evidence that both species were in decline, breeding waterfowl surveys were conducted in a core area for King Eiders from 1992 to 1994 to establish a baseline for comparison in future years. This study replicates those surveys to allow comparisons among years and provide population trends for King Eiders, Long-tailed Ducks, Canada Geese, and other bird species nesting on western Victoria Island. This study will also spatially quantify bird densities, thus providing useful information on important areas and habitats. Changes in spatial distributions over time may also identify key areas of concern.

Transects flown on western Victoria Island in 1992-1994 were repeated in 2004 and 2005, including a southwestern area that had only been surveyed in 1993 (Fig. 1). Between 18 and 26 June, 2005 a total of 98 transects were flown combining for a total distance of 4556 km (Table 1). Following methods used during previous surveys, counts were made from a Bell 206B helicopter flown at 30 m above ground and at a ground speed of 145 kph. Two observers, one located in the left front seat and the other in the rear right seat, recorded all birds within 200 m of their side of the aircraft. Population estimates for King Eiders, Long-tailed Ducks and Canada Geese were calculated using the number of indicated birds. The formula used to calculate indicated birds from observations of King Eiders = 2 x (single males + pairs + groups of males < 5) + groups ≥ 5. The formula used to calculate indicated birds from observations of Canada Geese and Long-tailed Ducks was 2 x (singles + pairs) + groups ≥ 3.

Concurrent waterfowl breeding population surveys targeting geese, but including King Eiders and Long-tailed Ducks were conducted at two other locations:

-mainland western Canadian Arctic, including the Mackenzie Delta, Tuktoyaktuk Peninsula, and Parry Peninsula, NT,
-the Adelaide Peninsula and King William Island, NU.
Refer to Table 1 and Figure 1 for dates and coverage of these two additional surveys.

**Objectives:** The principle objectives of the study are to: 1) obtain population estimates for King Eiders, Long-tailed ducks, Canada Geese, and other birds nesting on western Victoria Island, 2) identify population trends for King Eiders, Long-tailed ducks and Canada Geese by comparing survey results with those obtained during previous surveys, and 3) acquire site-specific breeding densities for King Eiders, Long-tailed ducks and Canada Geese.

Results from the two concurrent sets of breeding population surveys will expand the scope of these objectives to include much of western and central arctic Canada.

**Preliminary Results:** The King Eider population estimate for western Victoria Island in 2005 was 22 662 (SE 2263), indicating about a 50% decline in number since 1992-94 but very similar to numbers observed in 2004 (Figs. 2 and 3). There was an estimated 9001 (SE 1900) Long-tailed Ducks in 2005, showing an increase over 2004 estimates but still below numbers observed during the 90's. The estimated number of Canada Geese was 59 729 (SE 4619) in 2005. This was an increase to numbers found in 1992-94 and 2004. Highest densities of King Eiders were found within the Kagloryuak River valley, near Tahiryuak Lake, and in portions of the Prince Albert Peninsula (Fig. 4). These areas held the highest densities of King Eiders in previous surveys as well. The highest densities of Canada Geese were found in southwestern Victoria Island and in the Kagloryuak River valley (Fig. 5), which was also similar to past surveys.

A complete report on the results of the 2004-05 waterfowl population surveys on western Victoria Island, including a comparison to results from 1992-94, will be available in March 2006.

**Project Status:** Spring thaw in 2005 was a few days earlier on Victoria Island than usual, however King Eider numbers are very similar to those observed in 2004, when a late spring thaw occurred. A preliminary analysis of the proportion of birds in pairs versus flocks suggests survey timing was comparable to earlier surveys, thus indicating the breeding population of King Eiders on western Victoria Island has decreased significantly since the surveys were conducted in the 90's.

The two concurrent AGJV surveys were conducted in June of 2005 as planned. There were no significant changes to study objectives, methodology or partnerships.

**Project Funding Sources for Survey on Western Victoria Island FY 05:**

| SDJV (USFWS) Contribution | Other U.S. Federal contributions | U.S. non-federal contributions | Canadian federal contributions | Canadian non-federal contributions | Source of funding (agency or organization) |
|---|---|---|---|---|---|
| $26,500 | | | | | SDJV |
| | $27,500 | | | | AGJV, USFWS |
| | | | $36,600 | | PCSP, CWS |
| | | | | $37,000 | IFA |

**Total Expenditures (SDJV plus partner contributions) by Category in FY 05:**

| ACTIVITY | BREEDING | MOLTING | MIGRATION | WINTERING | TOTAL |
|---|---|---|---|---|---|
| Banding | | | | | |
| Surveys | $127,600 | | | | $127,600 |
| Research | | | | | |
| Communication | | | | | |
| Coordination | | | | | |

| Region | Size ($km^2$) | No. of transects | Distance surveyed (km) | Dates of survey |
|---|---|---|---|---|
| Victoria Island | | | | |
| -Northwest | 82 750 | 86 | 3502 | 18-26 June |
| -Southwest | 22 104 | 12 | 1054 | 18-20 June |
| Adelaide Peninsula | - | 11 | 748 | 15,20 June |
| King William Island | - | 17 | 954 | 21-24 June |
| ISR mainland | 15527 | 46 | 1862 | 12-20 June |

Table 1. Extent of coverage and dates for breeding waterfowl population surveys in western and central arctic Canada in 2005.

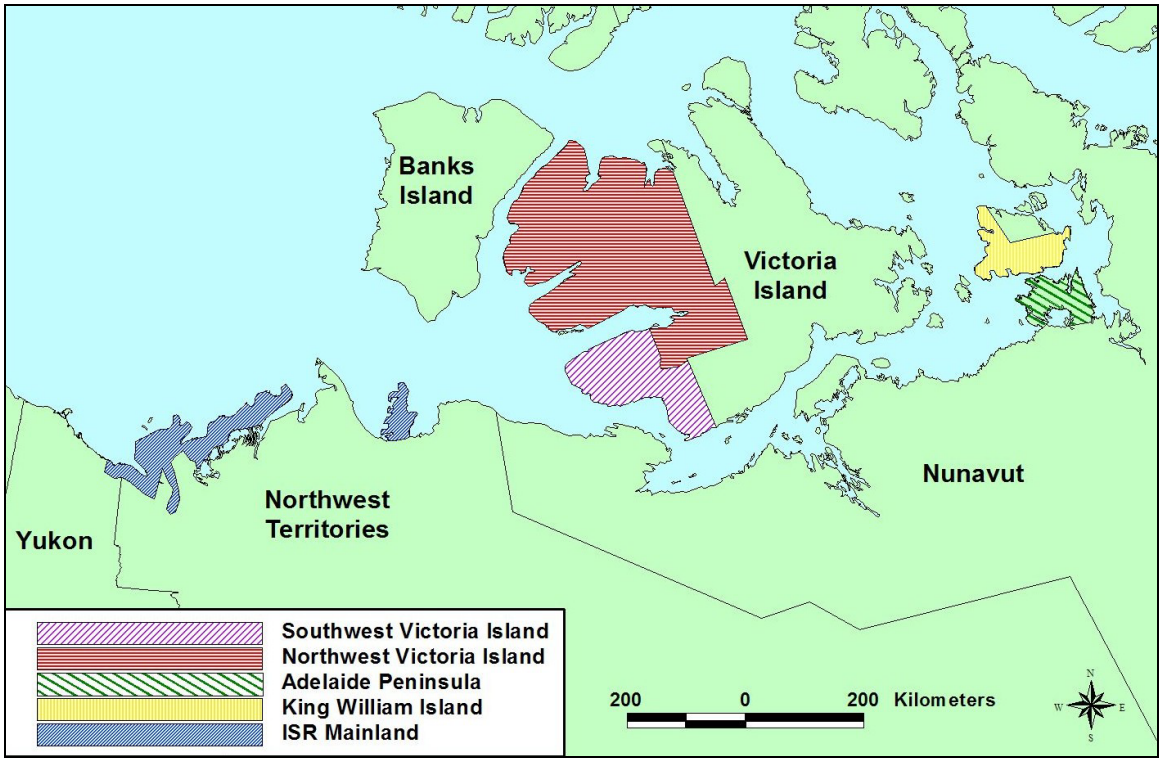


Figure 1. Map showing extent of coverage for breeding waterfowl population surveys in western and central arctic Canada in 2005.

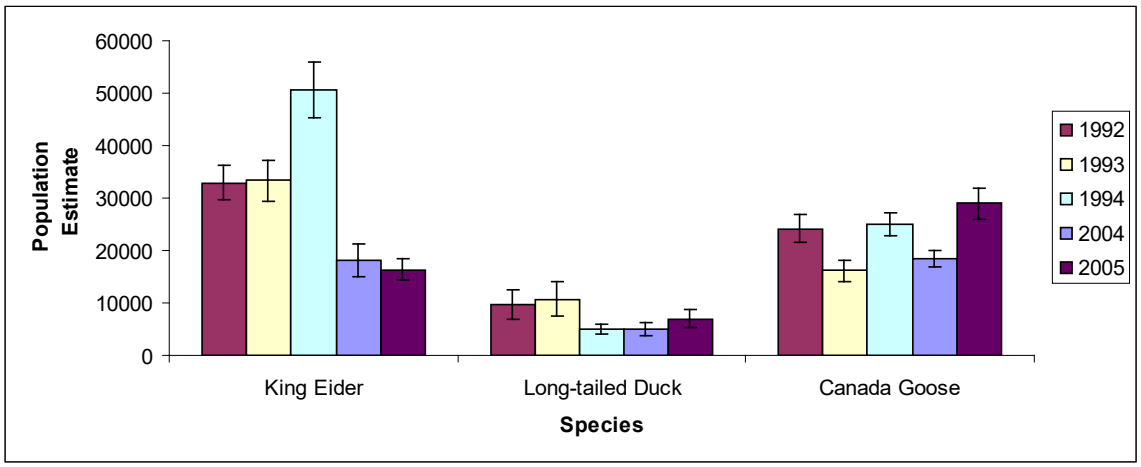


Figure 2. Estimated populations for King Eiders, Long-tailed Ducks, and Canada Geese on northwestern Victoria Island generated from aerial surveys completed in 1992, 1993, 1994, 2004 and 2005.

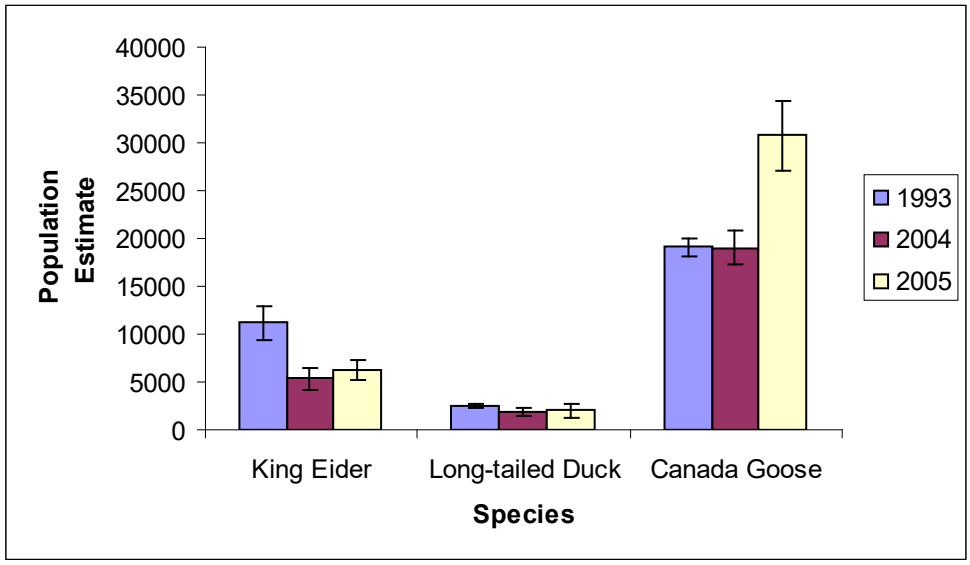


Figure 3. Estimated populations for King Eiders, Long-tailed Ducks, and Canada Geese on southwestern Victoria Island generated from aerial surveys completed in 2004 and 1993.

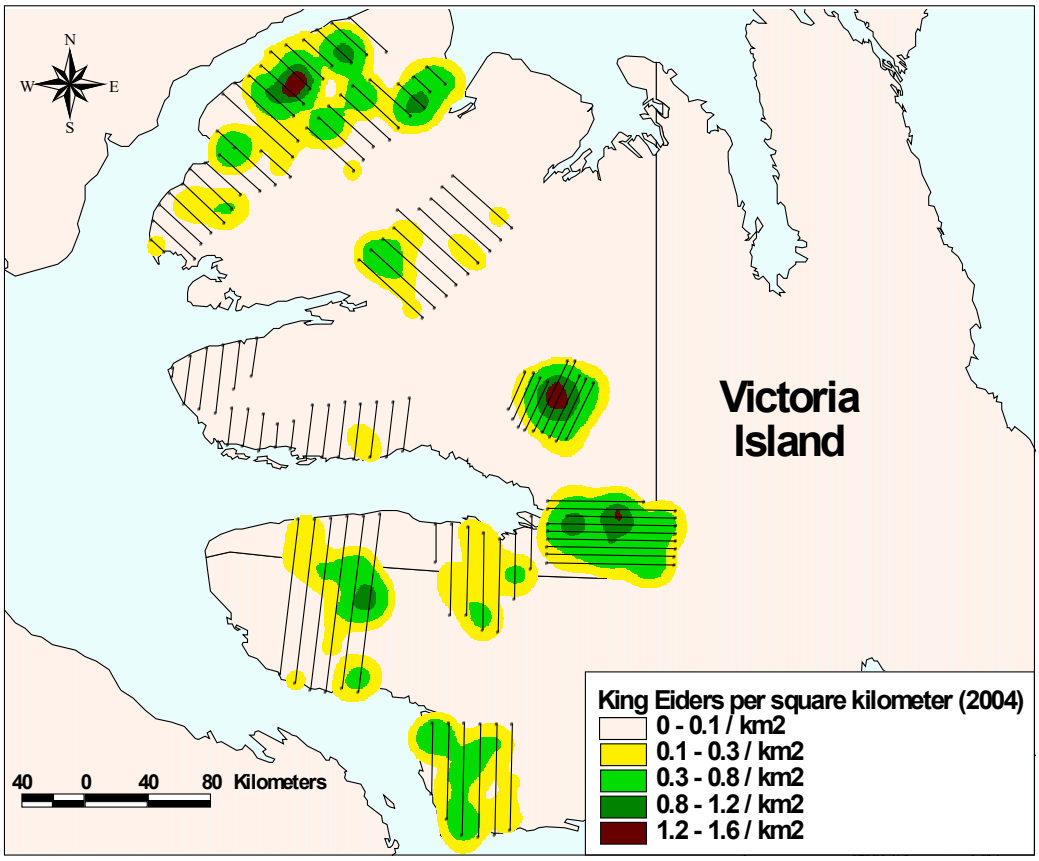


Figure 4. Map showing density (indicated number per square kilometer) of King Eiders in surveyed areas of western Victoria Island in 2004.

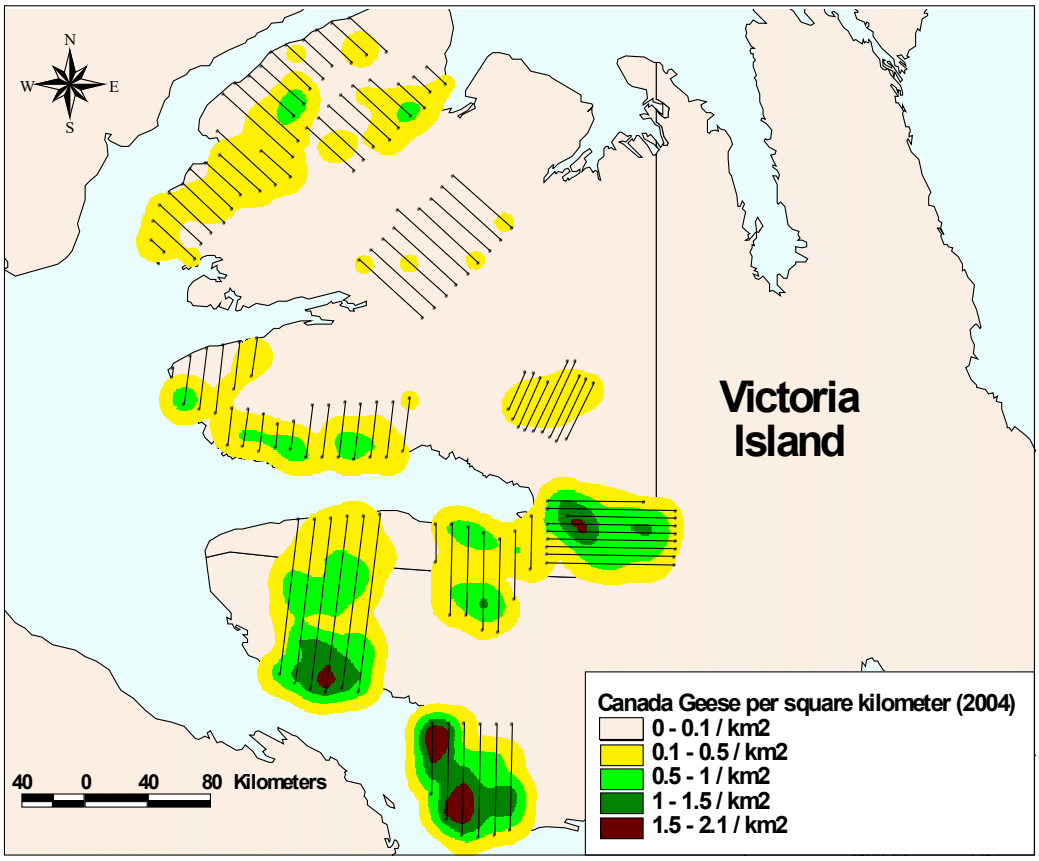


Figure 5. Map showing density (indicated number per square kilometer) of Canada Geese in surveyed areas of western Victoria Island in 2004.