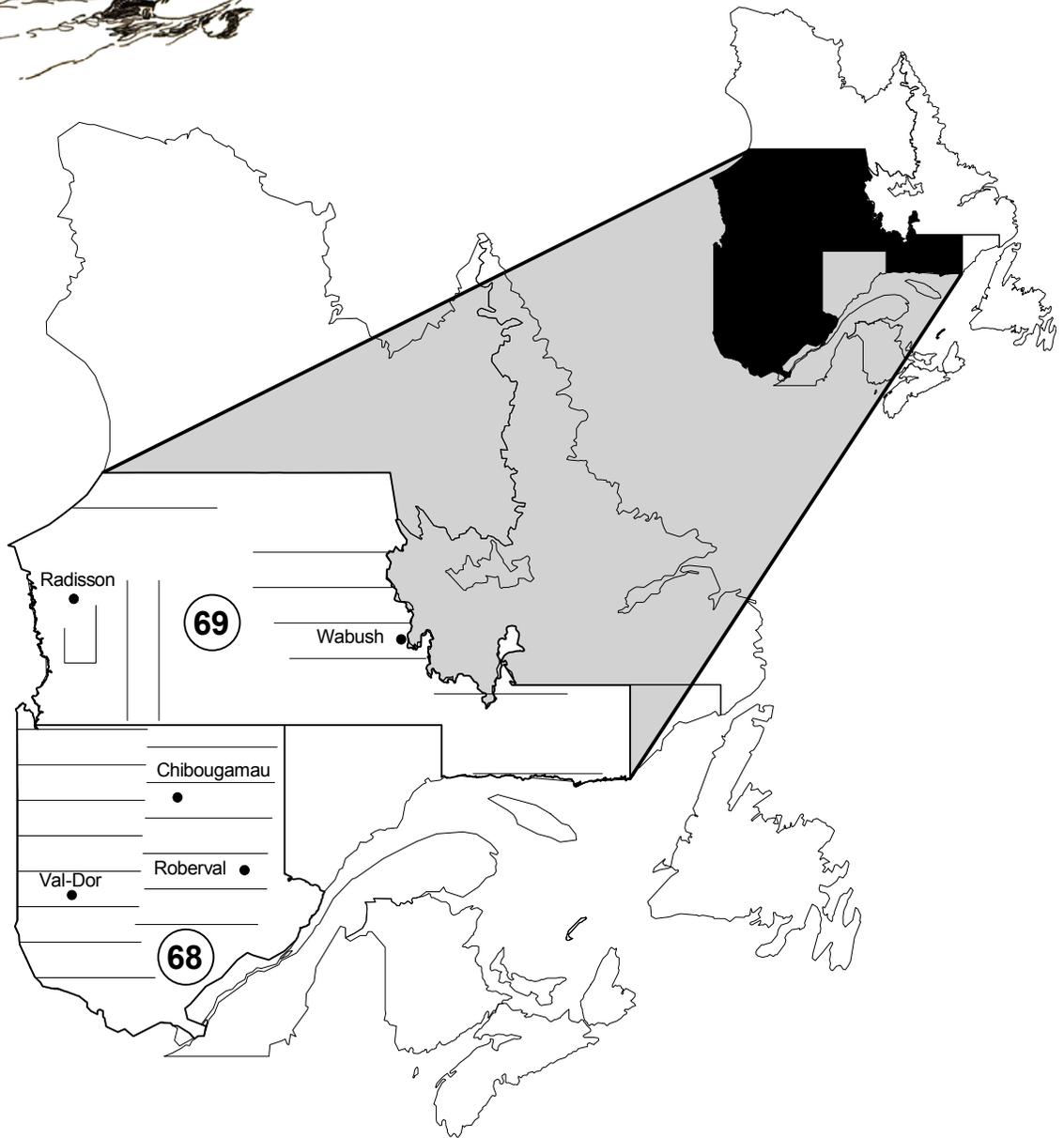


# CENTRAL QUEBEC

## Waterfowl Breeding Population Survey

### 2003



The data presented in this report are preliminary. Final estimates are available from the U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Patuxent Wildlife Research Center, Laurel, Maryland 20708-4016.

# **2003 Waterfowl Breeding Pair Population Survey Central and Northern Quebec**

**May 2003**

**Strata Surveyed 68 & 69**

**Survey Conducted and Data Supplied by  
United States Fish & Wildlife Service**

## **Aerial Crews**

Pilot/Observer James S. Wortham, USFWS  
Observer David L. Fronczak, USFWS

## **Abstract**

Initiated in conjunction with the Black Duck Joint Venture (NAWMP), 2003 marks the fourth year that Strata 68 & 69 will be included in the operational Aerial Waterfowl Breeding Ground Population and Habitat Survey in North America. Due to recent changes in the survey design, and lack of historical data, direct comparisons of these estimates to previous years are complex and are discouraged. However, as compared to 2002, data does indicate increases (14.4 %) in black ducks across the region, significant decreases (39.9 %) in mallard numbers, and a 37.3 % decrease in numbers of Canada geese.

## **Methods**

The procedures followed in conducting this survey are detailed in the Standard Operating Procedures for Aerial Waterfowl Breeding Ground Population and Habitat Survey, Section III, revised April 1987, April 2000. The pilot/observer was experienced in surveying these strata and have flown these areas five years. In 1997, the northern portions of Stratum 68 were separated and expanded to form Stratum 69. However, these areas were not flown during the 1997 survey season due to forest fires. Stratum 69 was again expanded in 2000, and survey transects were added increasing the overall sampling effort within this stratum.

A Cessna U206F fixed-wing aircraft equipped with amphibious floats was used for the survey. For the first time a helicopter was used in Stratum 68 to calculate Stratum specific visibility correction factors for applicable species. For other species, visibility corrections were obtained using pooled data from an ongoing helicopter visibility bias correction study being conducted in eastern Canada. Calculated correction factors are applied across the eastern Canada survey area.

Beginning in 1998, waterfowl and habitat data were collected using an aerial onboard digital recording system designed to attribute each waterfowl observation with a respective location recorded as a latitude/longitude coordinate. Each data point

(observation) is then logged along with the sample details, i.e. strata, transect, and segment, time, climatic conditions, and location.

### Habitat Descriptions

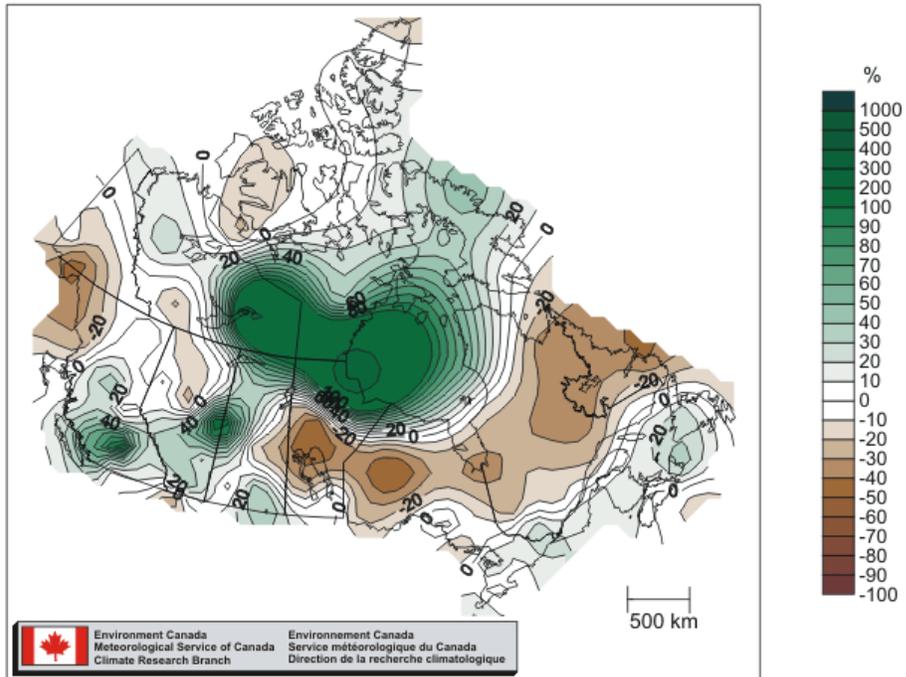
Stratum 68: Stratum 68 lies east of the Ontario border, north of the Ottawa River, west of the St. Lawrence River, and south of a line extending eastward from the southern tip of the James Bay. Topography ranges from rolling hills in the southeast to more severe terrain in the northeast, and gentle slopes and flat areas near the James Bay. This boreal shield ecosystem is characterized predominately with hardwoods with the only significant development resulting from timber and mining activities. Wetlands consist of rivers and smaller drainages, numerous lakes and beaver ponds, timbered rocky marshes, and bogs.

Stratum 69: Stratum 69 lies east of the James and Hudson Bays, south of the 56<sup>th</sup> parallel, north of Sept-Isles and the north shore of the St. Lawrence Gulf, and west of Labrador. Topography in this region of the Nearctic ranges from rolling to severe, and is characterized by rocky outcroppings. Development consists of reservoirs constructed for hydroelectric generation, and some mineral and timber extraction. Wetlands consist of rivers and other drainages, man-made reservoirs, glaciated lakes and beaver ponds, some vegetated marshes and bogs.

Table 1. Survey design for central Quebec

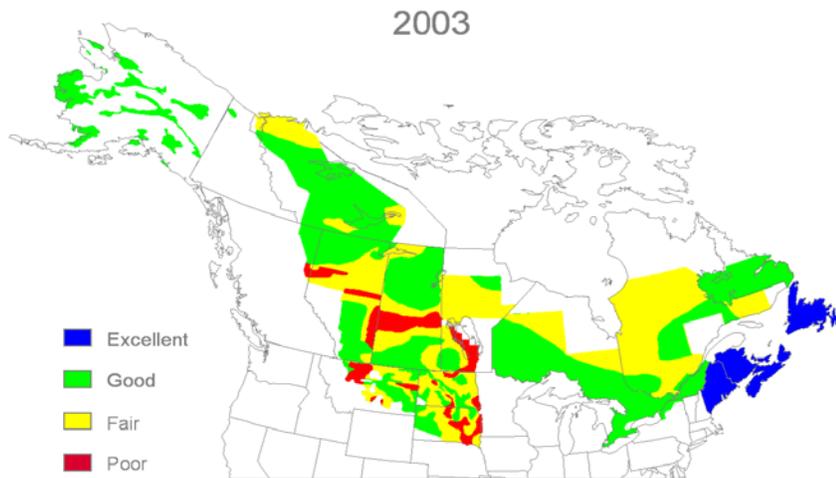
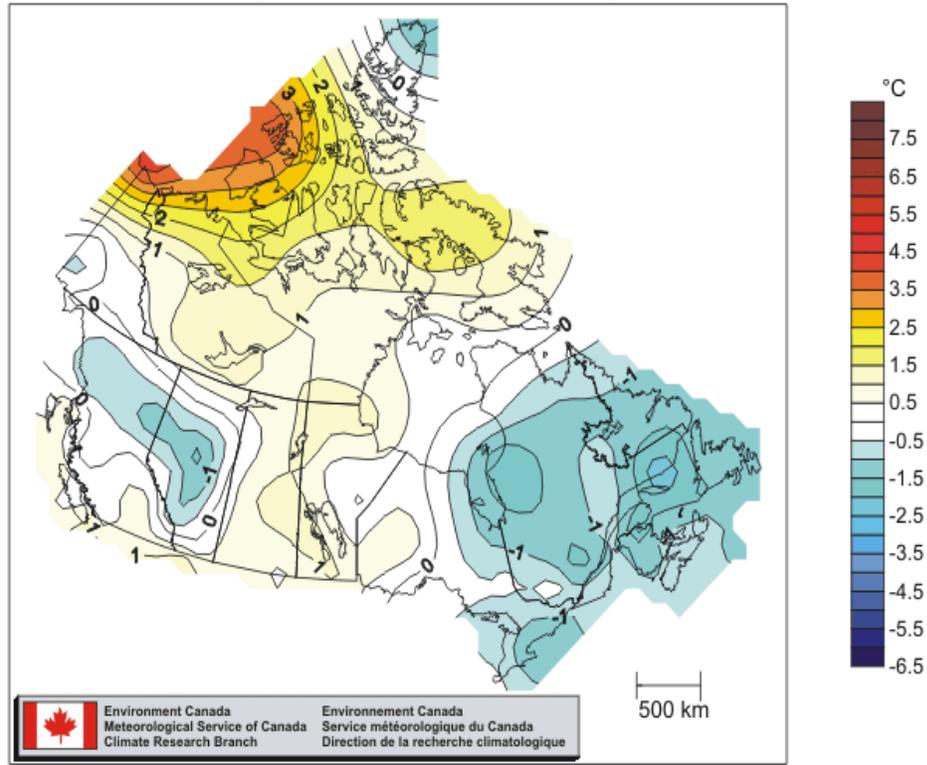
Survey Design	68	69
Square miles in stratum	140,307.0	190,213.0
Linear miles as designed	2,520	1,800
Square miles as designed	630.0	450.0
Linear miles in sample	2,484	1,800
Square miles in sample	621.0	450.0
Number of segments in sample	138	100
Expansion Factor	225.94	422.70

**PRECIPITATION DEPARTURES FROM NORMAL  
ANOMALIES DES PRECIPITATIONS PAR RAPPORT A LA NORMALE  
Spring/Printemps (Mar, Apr, May) 2003**



June 2, 2003

**TEMPERATURE DEPARTURES FROM NORMAL  
ANOMALIES DE LA TEMPERATURE PAR RAPPORT A LA NORMALE  
Spring/Printemps (Mar, Apr, May) 2003**



Habitat Conditions for Breeding Waterfowl, May, 2003 (as compiled by Flyway Biologists).

### **Weather and Habitat Conditions**

Habitat conditions for nesting waterfowl in east-central Quebec, those areas east of Chibougamau and north of Lac St. Jean were good. Wetlands were adequately charged to provide good cover for nesting and subsequent brood rearing. Habitats within the remainder of Quebec were judged to be "fair" to "good". Habitats in the southern portions, areas lying between Montreal and Val d'Or, and eastward to the Ontario border were dry, but not to the extent to not provide adequate habitats for breeding waterfowl. Western portions, north of Val d'Or and into the James Bay lowlands, were very dry. Many shallow marshes and bogs in these areas were either dry or reduced to mudflats. Also noticeable was a decrease in the abundance of beaver pond habitat with many former ponds having been abandoned by beavers entirely. Finally, habitats in north central Quebec, those areas between Radisson and Wabush, Labrador, and also areas along the north shore were much drier than past years, but completely ice-free and available as nesting habitat.

### **Breeding Population Estimates**

Although the eastern Canada portions of the survey are included in the operational North American survey, only limited assumptions can be made about waterfowl populations at this point. During 2000, survey effort was increased by adding several transects and expanding the northern boundary of stratum 69. Currently, five years of data have been obtained within this stratum. Several more years of data will be needed before meaningful comparisons can be made.

Information on population estimates can be seen in the following tables. Notable outcomes include a modest increase in black ducks from last year of 7.51 % and 22.1 % for strata 68 and 69 respectively. This contributed to an overall crew area increase in black ducks of 14.4 % from 2002 which exceeds by 35.2 % a calculated 6-year mean of 156,550 birds (1996 – 2001). Numbers of mallards decreased in Stratum 68 by (50.9 %) from 2002 while those in Stratum 69 nearly doubled (83.8 %). Canada geese in stratum 68 decreased 60.2 % from 2002, but decreased only 6.8 % in Stratum 69 from 2002. This fluctuation resulted in an overall crew area decrease of 37.3 % from last year and down 7.4 % from the 1996-2001 mean.

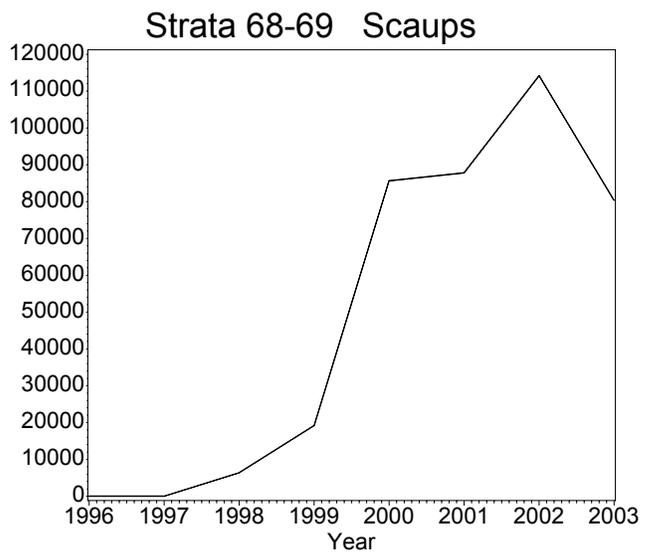
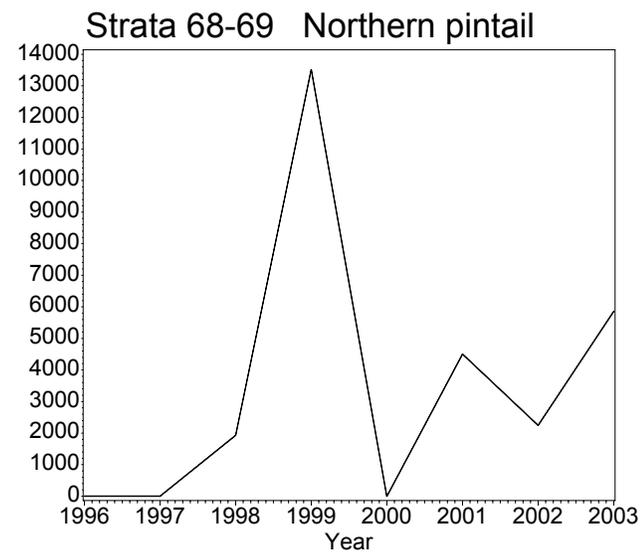
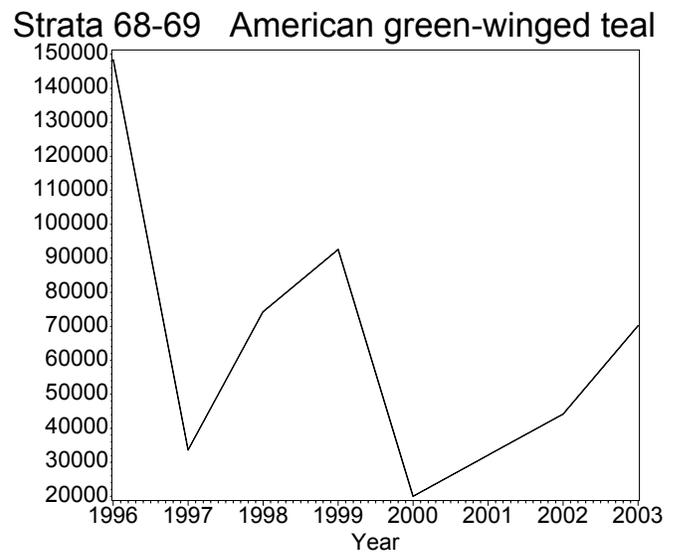
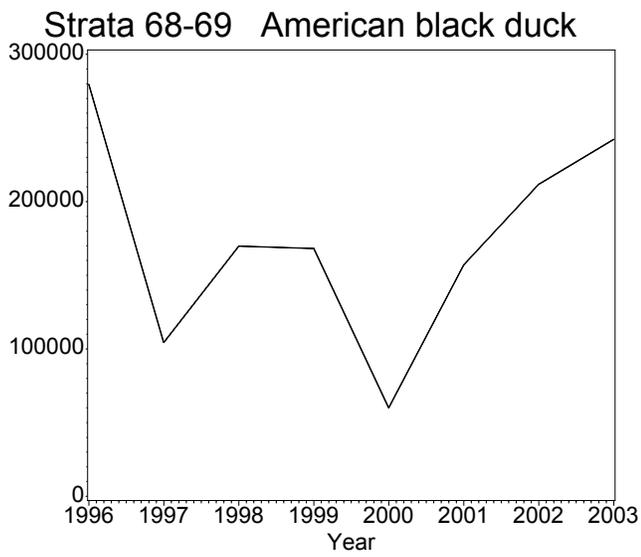
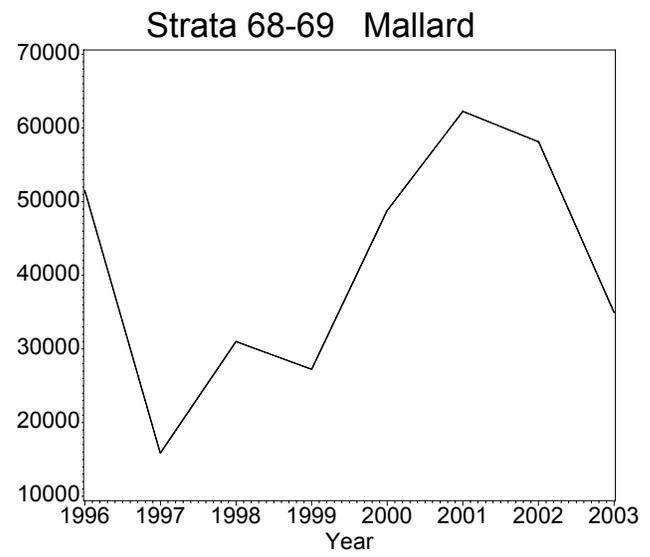
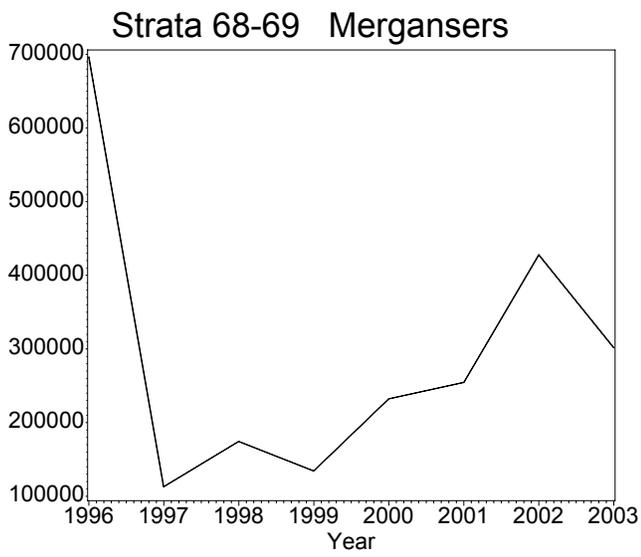
Table 2. Status of waterfowl breeding population estimates (thousands, adjusted for visibility bias) by species and stratum.

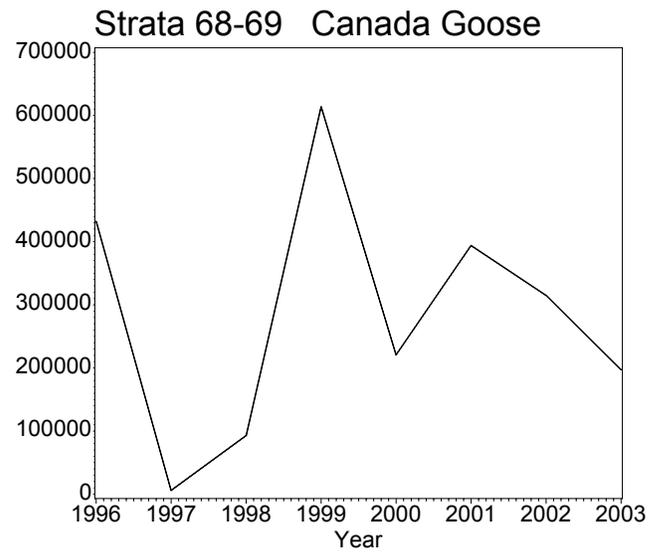
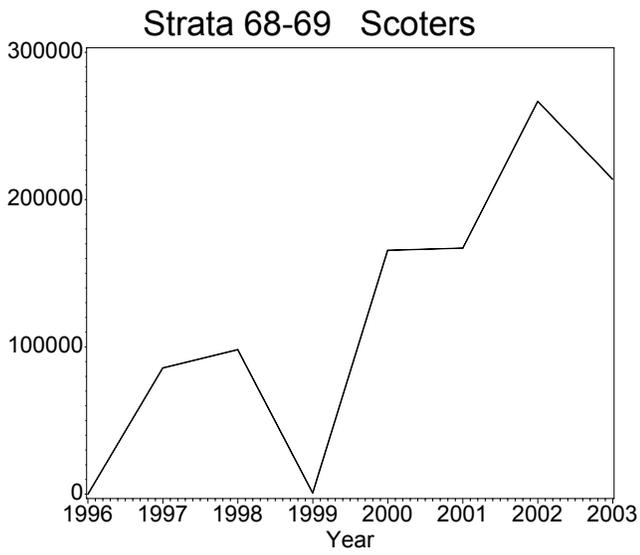
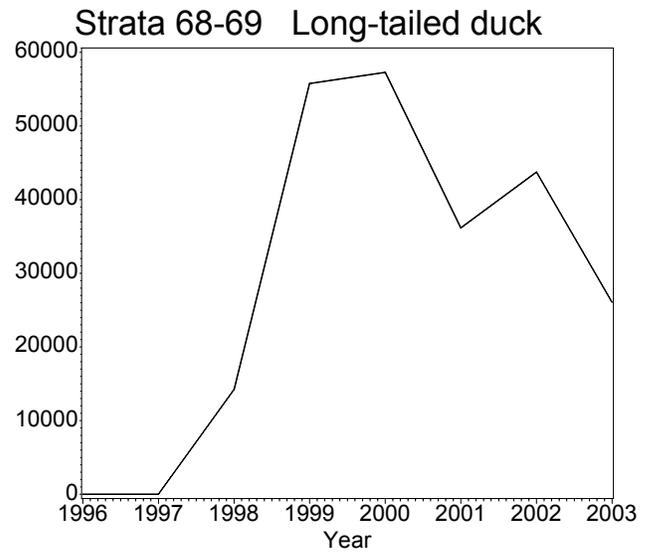
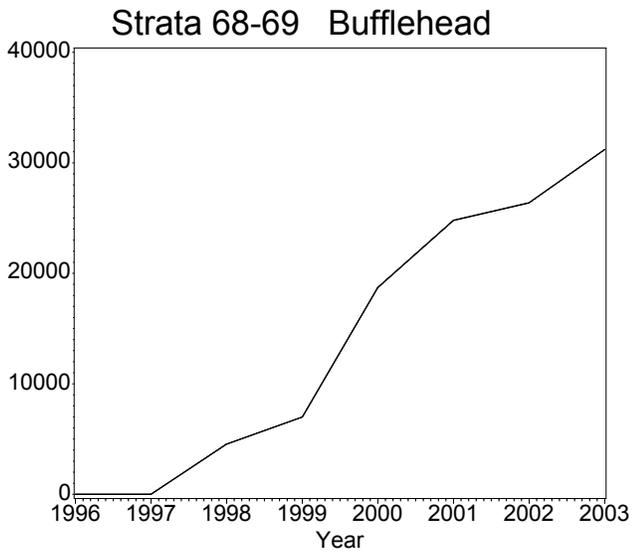
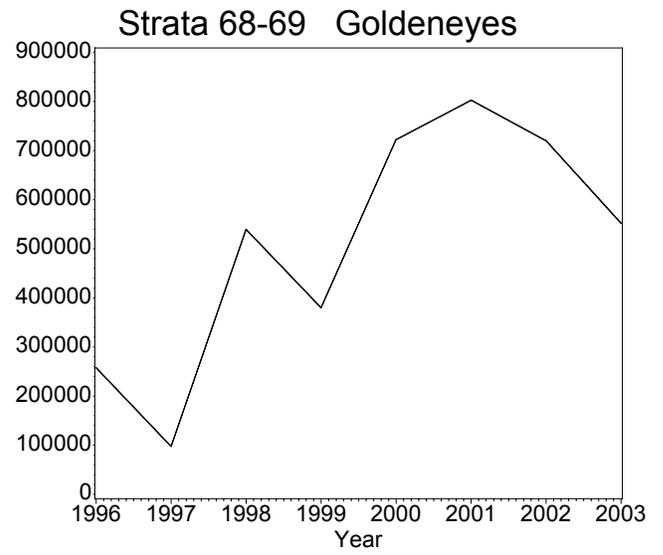
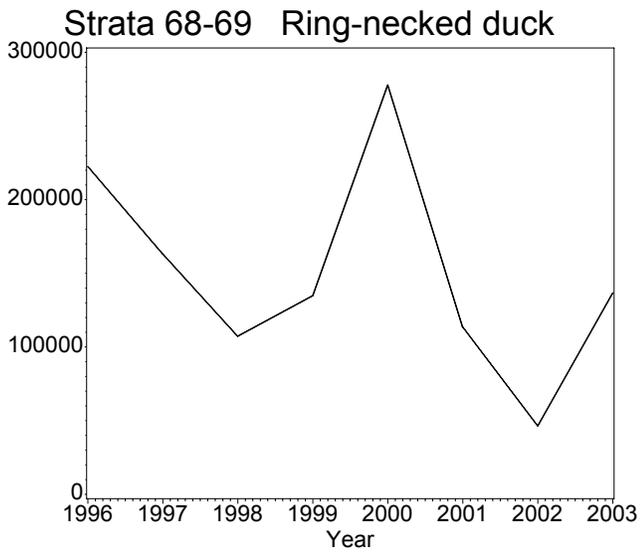
Species/Ponds	Stratum (2003)		2003 Total	% Change From	
	68	69		2002 Total	2002
Ducks					
Dabblers					
Mallard	26.2	8.8	35.0	58.2	-39.9%
Am. black duck	120.2	122.0	242.2	211.7	14.4%
Gadwall	0.0	0.0	0.0	12.0	-100.0%
Am. wigeon	2.6	33.8	36.4	34.3	5.9%
Am. green-winged teal	38.6	31.6	70.2	44.2	58.8%
Blue-winged teal	4.7	0.0	4.7	23.0	-79.7%
N. shoveler	0.0	0.0	0.0	0.0	--
N. pintail	3.6	2.2	5.9	2.2	160.3%
Subtotal	195.8	198.4	394.2	385.6	2.2%
Divers					
Redhead	0.0	0.0	0.0	0.0	--
Canvasback	0.0	0.0	0.0	0.0	--
Scaups	13.4	67.0	80.4	114.2	-29.6%
Ring-necked duck	113.1	23.5	136.7	46.5	193.9%
Goldeneyes	115.1	437.2	552.4	719.9	-23.3%
Bufflehead	27.5	3.7	31.2	26.4	18.3%
Ruddy Duck	0.0	0.0	0.0	0.0	--
Subtotal	269.1	531.5	800.6	906.9	-11.7%
Miscellaneous					
Long-tailed duck	0.0	26.1	26.1	43.7	-40.4%
Eiders	0.0	0.0	0.0	0.0	--
Scoters	13.4	200.4	213.9	266.6	-19.8%
Mergansers	146.8	155.1	301.9	427.7	-29.4%
Subtotal	160.2	381.6	541.8	738.1	-26.6%
Total Ducks	625.2	1111.5	1736.7	2030.6	-14.5%
Canada Goose	71.7	125.8	197.5	315.0	-37.3%
Am. coot	0.0	0.0	0.0	0.0	--

Appendix 1. Long-term trend in adjusted waterfowl breeding population estimates (thousands). \*

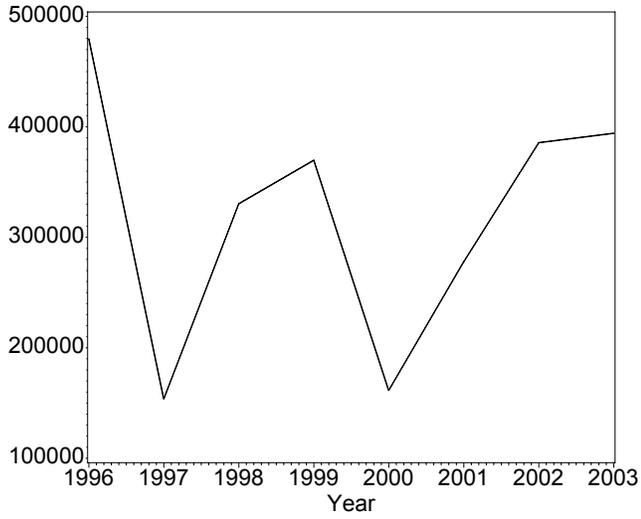
Species/Ponds	1996	1997	1998	1999	2000	2001	2002	2003
Ducks								
Dabblers								
Mallard	51.5	15.9	31.0	27.2	48.8	62.3	58.2	35.0
Am. black duck	279.6	104.5	169.7	168.2	60.2	157.1	211.7	242.2
Gadwall	0.0	0.0	0.0	3.6	2.7	12.3	12.0	0.0
Am. wigeon	0.0	0.0	53.4	40.3	11.4	5.1	34.3	36.4
Am. green-winged teal	148.4	33.6	74.3	92.6	20.0	32.1	44.2	70.2
Blue-winged teal	0.0	0.0	0.0	24.3	13.8	4.6	23.0	4.7
N. shoveler	0.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0
N. pintail	0.0	0.0	1.9	13.5	0.0	4.5	2.2	5.9
Subtotal	479.5	154.0	330.3	369.7	161.6	278.0	385.6	394.2
Divers								
Redhead	0.0	0.0	0.0	1.4	1.4	0.0	0.0	0.0
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scaups	0.0	0.0	6.4	19.2	85.6	87.8	114.2	80.4
Ring-necked duck	222.4	163.0	107.3	134.8	277.7	113.5	46.5	136.7
Goldeneyes	257.6	97.8	539.2	380.4	722.3	802.4	719.9	552.4
Bufflehead	0.0	0.0	4.5	7.0	18.7	24.8	26.4	31.2
Ruddy Duck	0.0	0.0	0.0	1.3	4.0	5.3	0.0	0.0
Subtotal	480.0	260.9	657.4	544.1	1109.7	1033.8	906.9	800.6
Miscellaneous								
Oldsquaw	0.0	0.0	14.2	55.8	57.3	36.2	43.7	26.1
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoters	0.0	85.7	98.1	1.0	165.5	167.1	266.6	213.9
Mergansers	696.4	113.0	174.4	134.5	232.3	254.6	427.7	301.9
Subtotal	696.4	198.7	286.7	191.3	455.0	457.8	738.1	541.8
Total Ducks	1655.9	613.6	1274.4	1105.1	1726.4	1769.6	2030.6	1736.7
Canada Goose	432.0	6.2	93.0	613.4	220.8	393.7	315.0	197.5
Am. coot	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0

\* Sampling effort and stratum boundary changes in stratum 69 were implemented beginning survey year, 2000.

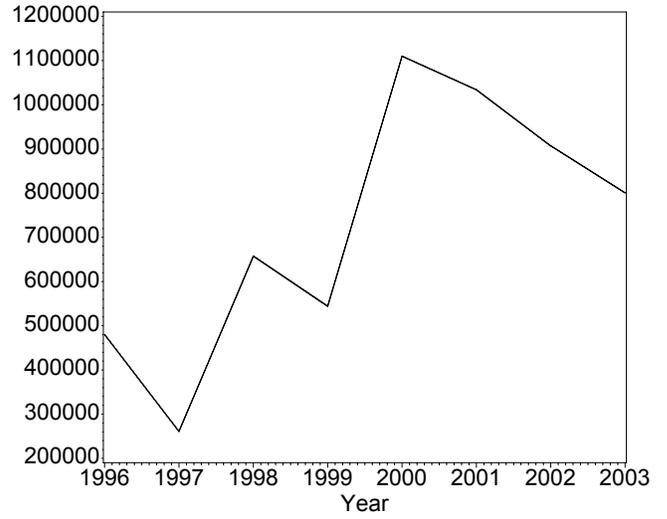




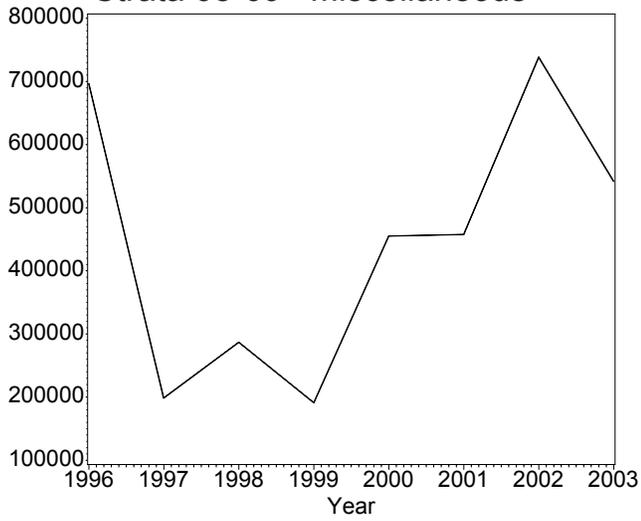
Strata 68-69 Dabblers



Strata 68-69 Divers



Strata 68-69 Miscellaneous



Strata 68-69 Total Ducks

