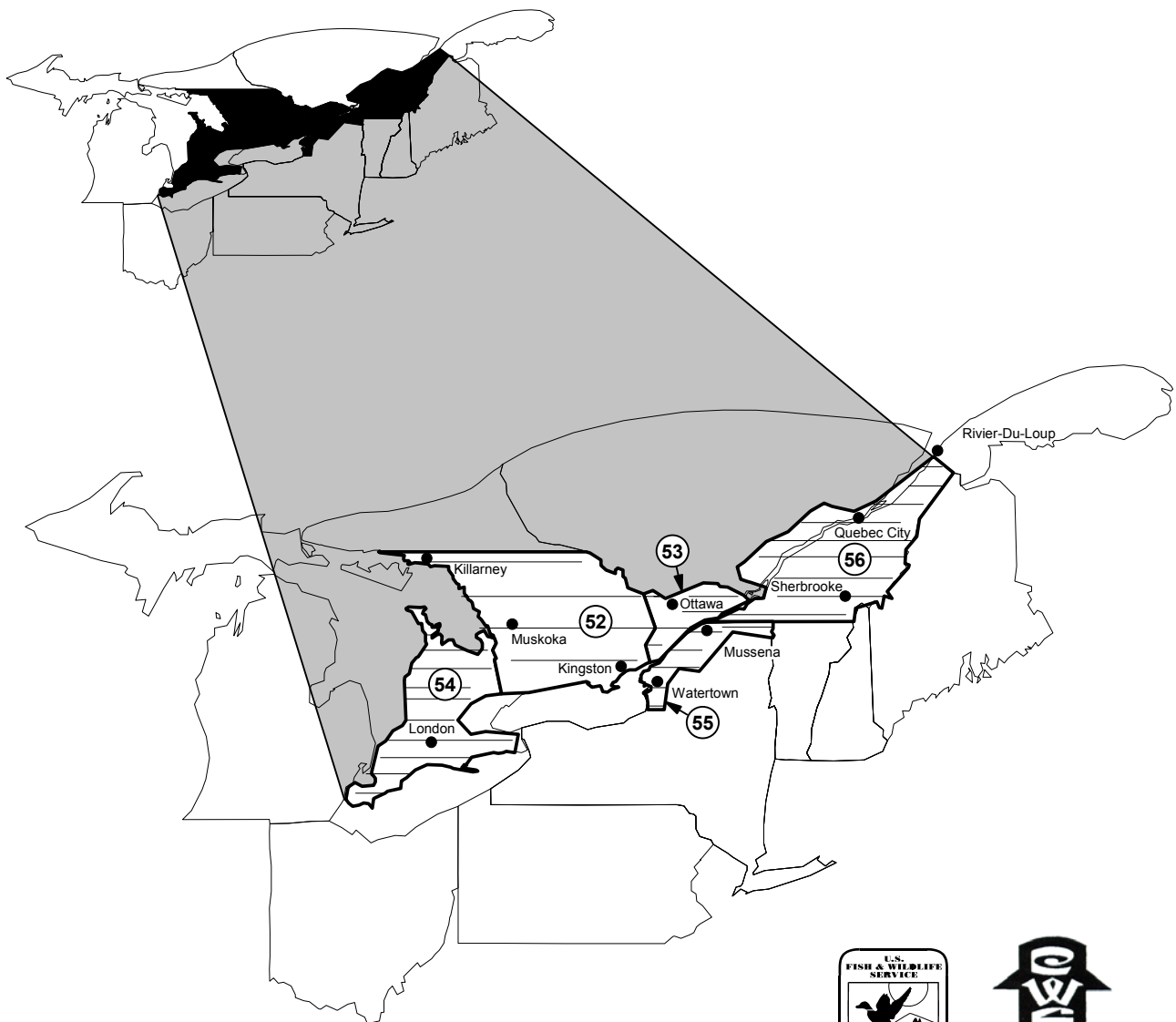


# NEW YORK, EASTERN ONTARIO, and SOUTHERN QUEBEC

## Waterfowl Breeding Population Survey

### 2001



## **2001 Waterfowl Breeding Population Survey New York, Eastern Ontario, and Southern Quebec**

April/May 2001

Strata Surveyed  
52,53,54,55,56

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

### **Aerial Crews**

#### **Fixed Wing:**

Pilot/Observer	Mark D. Koneff, U.S. Fish and Wildlife Service
Observer	Charles Kitchens-Hayes, U.S. Fish and Wildlife Service

#### **Helicopter:**

Pilot	Doug Holtby, Ontario Ministry of Natural Resources
Observer	Melody Miller, Indiana Department of Natural Resources

### **Abstract**

This survey has been conducted for the past twelve years in conjunction with the Black Duck Joint Venture to provide waterfowl breeding population estimates for New York, Southern Ontario, and Southern Quebec. In contrast to recent warm and dry winters, this region experienced cold temperatures and significant snowfall during the winter of 2000-2001, resulting in generally good breeding habitat conditions. A warm and relatively dry spring provided conditions favorable for waterfowl production. Waterfowl populations were greater than 2000 levels, but remained significantly below long-term averages. Dabblers population estimates over all were 27.0% above year 2000, but 41.0% below the long-term average. Divers were 80% above 2000 estimates but 16.6% below the long-term average. Canada geese increased sharply, up 862.8% from 2000 and 261.8% from the long-term average. Large migrating flocks of geese were observed in the St. Lawrence Valley and were primarily responsible for this increase.

### **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. The fixed wing pilot has surveyed these strata the 4 consecutive years. Both the fixed wing and helicopter observers, while new to this survey region, had considerable previous experience in aerial waterfowl surveys. A Partenavia P68 Observer aircraft was used for the survey. Visibility corrections were obtained using Bayesian updating procedures and from an ongoing helicopter visibility bias correction study being conducted in eastern Canada

This was the first year that a helicopter has been used in this survey area to assess visibility bias.

Since 1998, waterfowl and habitat data have been collected using an onboard digital recording system designed to attribute each waterfowl observation with a geographic location recorded in latitude/longitude. During data transcription, each observation is associated with pertinent information (i.e., stratum, transect, and segment, time, weather conditions, and geographic location).

## **Weather and Habitat Conditions**

**Stratum 52:** Stratum 52 lies east of the Georgian Bay, north of Lake Ontario, south of the Ottawa River, and west of the line running from Ottawa to Kingston, Ontario. Topography varies from hilly in the north to rolling in the south. The northern part of the stratum is primarily mixed forest, except along the Ottawa River where some farming occurs. The southern half of the stratum is a mixture of woodland and agriculture. Many small to moderate size lakes are found throughout the area, with some large lakes connected by small streams. Small reservoirs and farm ponds are present. Water levels in this area are relatively stable.

**Stratum 53:** This is a small stratum located southeast of Ottawa, bounded on the north by the Ottawa River and on the south by the St. Lawrence River. The area is relatively flat with some rolling terrain along the west boundary. Agriculture is the primary land use of this area and it has been extensively cleared and drained. The remaining habitat consists of a few marshes, small streams and drainage ditches. Water conditions are variable in this area depending on the winter and spring precipitation.

**Stratum 54:** Stratum 54 includes much of the southwestern Ontario peninsula, bounded in the north by Georgian Bay, in the west by Lake Huron and Lake St. Clair, and in the south by Lake Erie. The terrain is flat in the south to rolling in the north. Agriculture predominates throughout this stratum. Significant wetland drainage has occurred. In southern portions of the stratum, woodlands are largely restricted to small lots and riparian areas. Deciduous woods transition to mixed forest in the north and forested area increases. Habitat in this stratum includes lake shore marshes, numerous field drainage ditches, small marshes and wooded wetlands, and riparian zones of streams. Water conditions are heavily influenced by winter and spring precipitation in this stratum.

**Stratum 55:** This stratum encompasses the St. Lawrence lowlands of New York, bounded by Lake Champlain to the east, the Adirondacks to the south, Lake Ontario to the west, and the St. Lawrence River to the north. The terrain varies from rolling to moderate in the south, to flat and slightly rolling to the north. Habitat consists of hardwood forests interspersed with streams, lakes, marshes, bogs, and wooded wetlands with many small marshes along the St. Lawrence River. Agriculture consists primarily of dairy operations and small farms. Some timber harvesting occurs. Water conditions are relatively stable in this stratum.

**Stratum 56:** This stratum is located in southern Quebec. The boundary lies just south of Montreal and extends to Quebec City, the west end of the Gaspé Peninsula, down to Maine, New Hampshire, Vermont, and New York borders, and back to Montreal. This area is flat in the west

trending toward rolling and mountainous in the east and southeast. Habitat in the west consists drainage ditches, farm ponds, small streams, and some tidal marsh along the St. Lawrence River. Western portions of this area are largely dominated by agricultural land-uses. Forestry and mining are important industries in eastern and southeastern portions of the stratum. To the east and southeast, along the U.S. border, habitat consists of small streams, small lakes and wooded wetlands, bogs, and some larger lakes. Water conditions in this stratum, particularly in lowland areas to the west, are sensitive to winter and spring precipitation.

For the past four years, dryer and warmer than normal conditions have prevailed throughout this survey area. The result of these conditions has been reduced stream flows and lower lake levels. Great Lakes water levels have dropped several feet during this time period. Inland lake levels were also reduced in some areas resulting in the degradation of nesting and brood rearing habitats. The winter of 2000-2001 saw a return to more normal, colder temperatures, and good snow accumulations. Wetland and lake levels were improved in the spring of 2001. Great Lakes levels remain low. Relatively warm and dry spring weather, in conjunction with improved wetland conditions, should favor waterfowl production in 2001.

Table 1. Survey design for Ontario, New York, and Quebec, May 2001

STRATUM	52	53	54	55	56
<u>Survey Design</u>					
Square Miles in Stratum	28,265	4,259	12,245	4,149	21,721
Linear Miles Sampled in Stratum	720	180	666	216	936
Number of Transects in Stratum	4	4	9	5	10
Number of Segments in Stratum	40	10	37	12	52
Expansion Factor	157.028	94.644	73.544	76.833	92.825
<u>Current Year Coverage</u>					
Square Miles in Stratum	28,265	4,259	12,245	4,149	21,721
Linear Miles in Sample	720	180	666	216	936
Number of Transects in Sample	4	4	9	5	10
Number of Segments in Sample	40	10	37	12	52
Expansion Factor	157.028	94.644	73.544	76.833	92.825

### Breeding Populations

Waterfowl populations were greater than 2000 levels, but remained significantly below long-term averages. Dabbling population estimates over all were 27.0% above year 2000, but 41.0% below the long-term average. The mallard estimate increased 44.9% over year 2000, but were 19.6% below the long-term average. Black ducks populations were 2.6% below, but similar, to year 2000 estimates. Black ducks remain 30.0% below the long-term average. Black ducks were noticeably less abundant in eastern portions of the crew area, particularly in stratum 56. Divers were 80% above 2000 estimates but 16.6% below the long-term average. Ring-necked ducks 23.6%, bufflehead 378.1%, and goldeneye 183.7% estimates increased in year 2000.

Ring-necks remain 46.1% below long-term averages while bufflehead and goldeneye were 40.3% and 32.5% above the long-term, respectively. Canada geese increased sharply, up 862.8% from 2000 and 261.8% from the long-term average. Large migrating flocks of geese were observed in the St. Lawrence Valley and were primarily responsible for this increase.

Table 2. Status of waterfowl breeding population estimates (thousands, adjusted for visibility bias) by species and stratum with comparisons against the previous year and the long-term mean for Eastern Ontario and New York.

Species/Ponds	Stratum (2001)					2001 Total	2000 Total	% Change From		
	52	53	54	55	56			1990-2000 Mean	2000	1990-2000 Mean
Ducks										
Dabblers										
Mallard	43.3	8.5	46.0	13.0	27.8	138.4	95.5	172.3	44.9%	-19.6%
Am. black duck	15.0	1.2	9.6	3.3	11.1	40.1	41.2	57.3	-2.6%	-30.0%
Gadwall	0.0	0.0	0.0	0.0	1.1	1.1	2.8	7.7	-59.6%	-85.3%
Am. wigeon	1.4	0.0	3.3	0.0	4.2	9.0	3.9	18.9	130.6%	-52.5%
Am. green-winged teal	7.6	1.0	1.6	0.0	18.4	28.6	22.1	46.6	29.7%	-38.6%
Blue-winged teal	0.0	0.0	0.0	0.0	0.0	0.0	6.1	61.4	-100.0%	-100.0%
N. shoveler	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.9	--	-45.2%
N. pintail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	--	-100.0%
Subtotal	67.3	10.7	61.0	16.3	62.6	217.8	171.5	368.8	27.0%	-41.0%
Divers										
Redhead	0.0	0.0	2.3	0.0	0.0	2.3	0.5	2.8	400.4%	-19.7%
Canvasback	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	--	-100.0%
Scaups	0.0	0.0	0.0	0.3	0.0	0.3	13.1	9.1	-97.7%	-96.7%
Ring-necked duck	14.0	0.6	7.5	0.5	4.6	27.1	21.9	50.3	23.6%	-46.1%
Goldeneyes	30.8	0.0	0.0	0.0	2.8	33.6	11.9	25.4	183.7%	32.5%
Bufflehead	15.6	9.6	4.9	0.0	4.9	35.0	7.3	24.9	378.1%	40.3%
Ruddy Duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	--	-100.0%
Subtotal	60.4	10.2	14.7	0.8	12.3	98.3	54.6	117.8	80.0%	-16.6%
Miscellaneous										
Oldsquaw	0.0	0.0	0.0	0.0	0.0	0.0	10.0	1.3	-100.0%	-100.0%
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	--	-100.0%
Scoters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	--	-100.0%
Mergansers	9.4	0.0	1.0	0.6	2.4	13.3	24.3	88.3	-45.2%	-84.9%
Subtotal	9.4	0.0	1.0	0.6	2.4	13.3	34.3	90.6	-61.2%	-85.3%
Total Ducks	137.0	20.9	76.6	17.7	77.2	329.4	260.4	577.3	26.5%	-42.9%
Canada Goose	64.6	1067.2	70.9	99.4	401.0	1703.0	176.9	470.6	862.8%	261.8%
Am. coot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	--	-100.0%

Appendix 1. Long-term trend in adjusted waterfowl breeding population estimates (thousands) for Eastern Ontario and New York.

Species/Ponds	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Ducks										
Dabblers										
Mallard	173.0	122.5	265.2	252.6	170.0	184.9	226.7	171.3	118.0	115.5
Am. black duck	103.0	65.7	73.5	49.2	59.2	89.3	39.9	38.9	39.0	31.7
Gadwall	11.2	7.4	3.6	1.9	0.0	30.6	6.6	2.7	4.0	13.7
Am. wigeon	28.8	35.1	6.7	9.4	14.6	13.8	17.0	11.0	4.3	62.8
Am. green-winged teal	28.8	21.7	19.2	22.0	106.9	39.0	64.0	34.4	16.7	138.4
Blue-winged teal	126.2	39.9	40.9	282.4	78.9	53.6	16.1	14.9	14.6	1.6
N. shoveler	0.7	2.2	0.0	1.0	1.1	0.5	2.4	0.0	0.0	2.4
N. pintail	25.6	3.4	2.0	0.4	1.1	1.4	1.5	3.5	0.0	2.4
Subtotal	497.2	297.8	411.1	618.9	431.7	413.0	374.2	276.6	196.7	368.5
Divers										
Redhead	4.7	3.6	0.7	4.5	5.8	6.1	1.8	3.0	0.8	0.0
Canvasback	3.3	4.4	1.5	3.0	4.6	2.1	0.0	0.0	0.0	0.0
Scaups	10.3	3.4	7.2	5.0	15.2	4.7	6.3	20.7	12.7	1.5
Ring-necked duck	50.4	44.9	105.9	63.7	98.8	86.1	21.7	36.6	7.2	16.0
Goldeneyes	14.0	20.5	99.6	22.8	10.6	2.8	6.4	15.4	48.4	26.7
Bufflehead	58.4	40.2	42.4	8.9	26.6	17.0	25.6	3.3	25.2	19.1
Ruddy Duck	0.0	12.0	0.0	5.1	0.0	0.0	12.2	0.0	4.5	5.6
Subtotal	141.2	129.0	257.2	112.9	161.6	118.8	73.9	79.0	98.9	68.9
Miscellaneous										
Oldsquaw	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.9
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0
Scoters	0.0	0.8	0.9	0.0	0.0	5.0	0.2	0.0	0.0	0.2
Mergansers	69.5	106.8	61.3	55.4	272.1	154.4	150.7	35.0	6.1	35.9
Subtotal	69.5	107.5	62.2	59.3	272.1	159.3	154.4	35.0	6.1	37.0
Total Ducks	707.9	534.3	730.5	791.0	865.4	691.2	602.5	390.6	301.7	474.4
Canada Goose	364.5	854.0	145.5	221.8	279.4	325.1	123.4	85.1	128.1	2473.3
Am. coot	3.1	19.0	6.1	5.1	2.4	5.2	15.6	0.0	0.8	0.0

Species/Ponds	2000	2001
Ducks		
Dabblers		
Mallard	95.5	138.4
Am. black duck	41.2	40.1
Gadwall	2.8	1.1
Am. wigeon	3.9	9.0
Am. green-winged teal	22.1	28.6
Blue-winged teal	6.1	0.0
N. shoveler	0.0	0.5
N. pintail	0.0	0.0
Subtotal	171.5	217.8
Divers		
Redhead	0.5	2.3
Canvasback	0.0	0.0
Scaups	13.1	0.3
Ring-necked duck	21.9	27.1
Goldeneyes	11.9	33.6
Bufflehead	7.3	35.0
Ruddy Duck	0.0	0.0
Subtotal	54.6	98.3
Miscellaneous		
Oldsquaw	10.0	0.0
Eiders	0.0	0.0
Scoters	0.0	0.0
Mergansers	24.3	13.3
Subtotal	34.3	13.3
Total Ducks	260.4	329.4
Canada Goose	176.9	1703.0
Am. coot	0.0	0.0

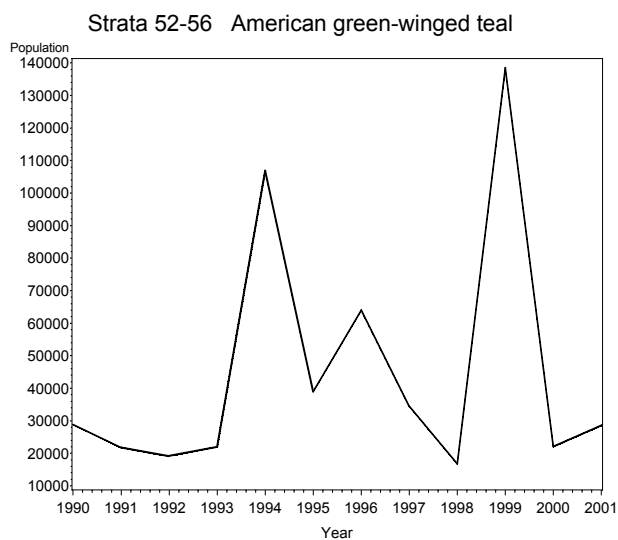
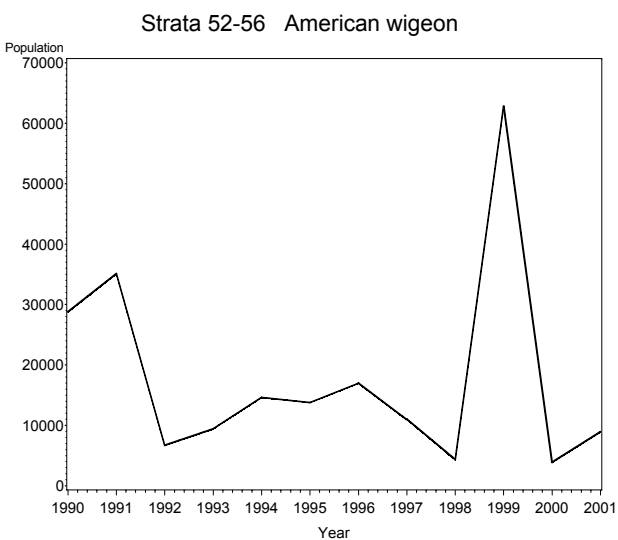
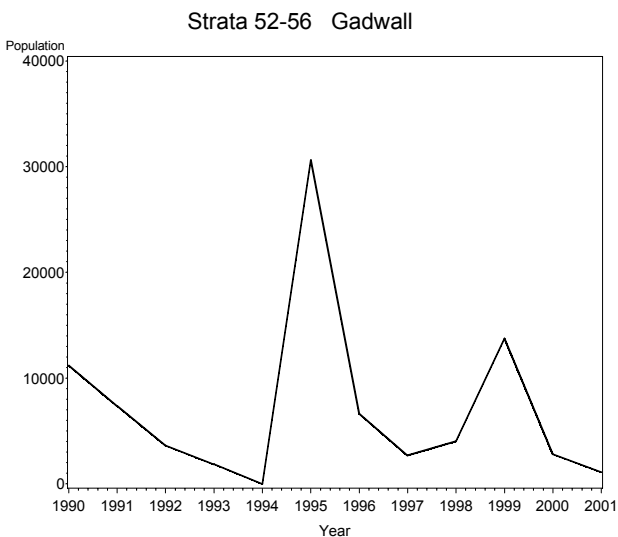
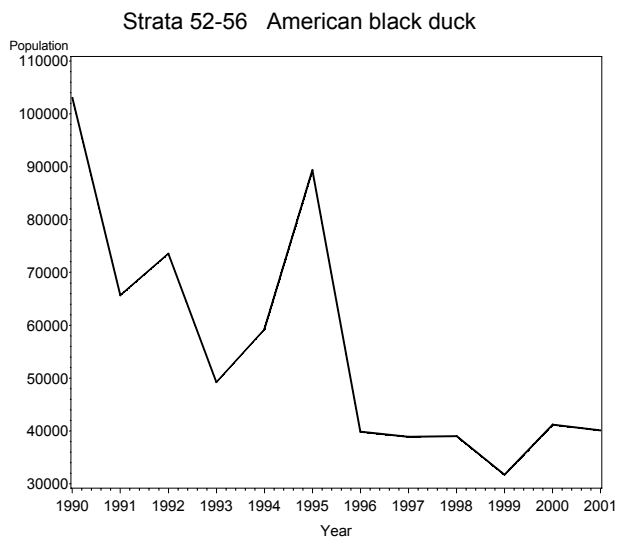
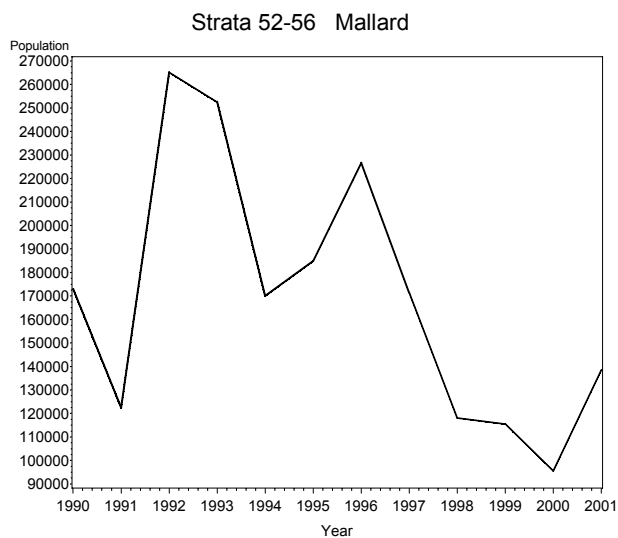
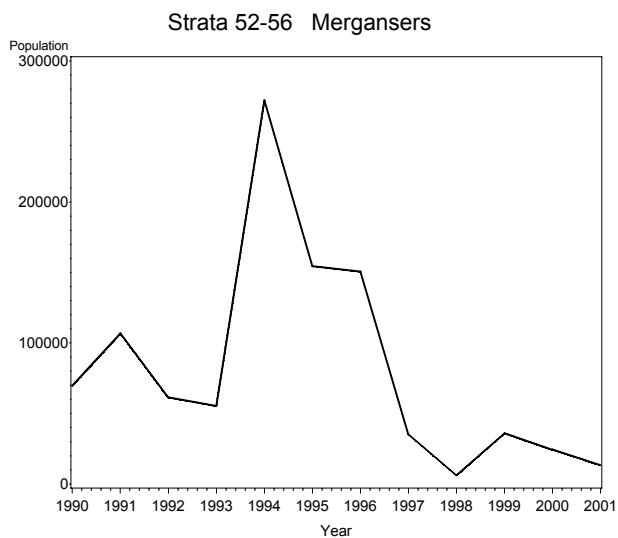


Figure 1. Population indices for the individual waterfowl species on an annual basis.



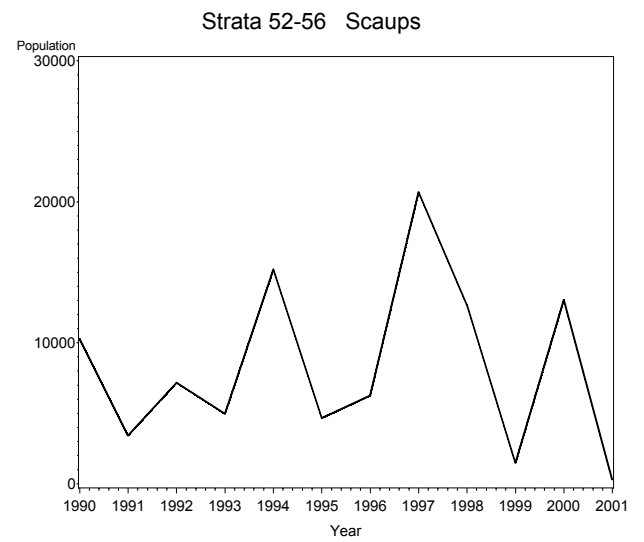
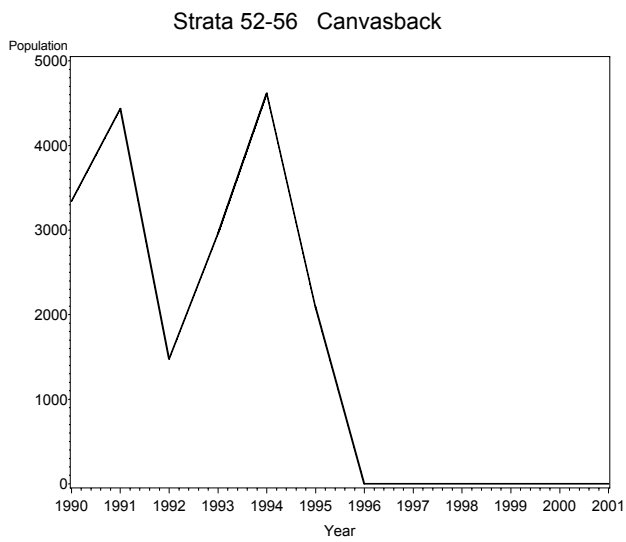
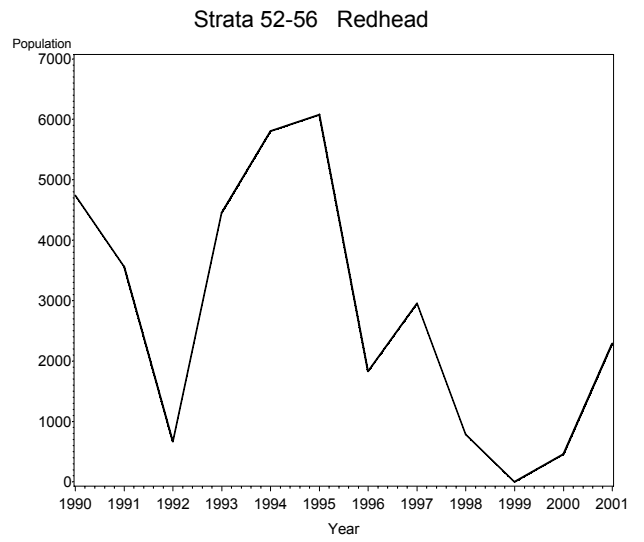
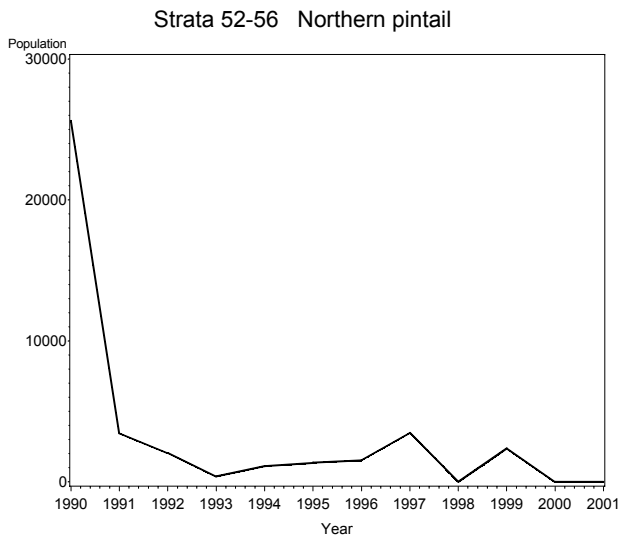
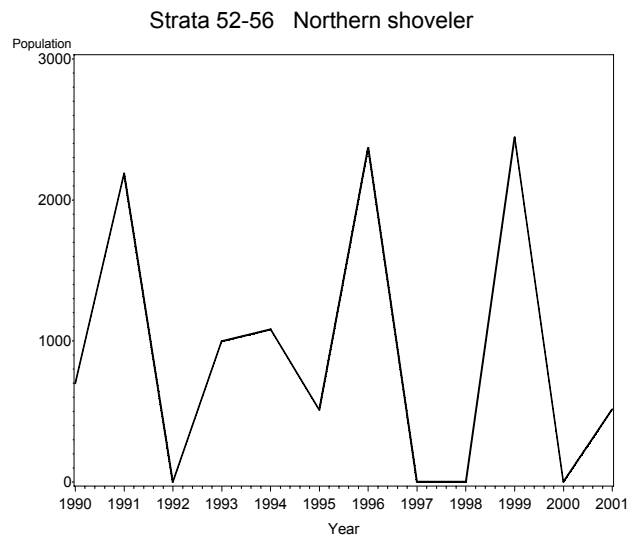
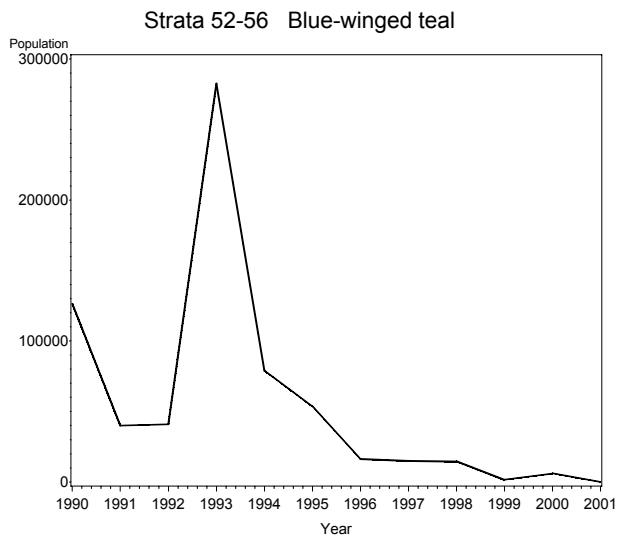


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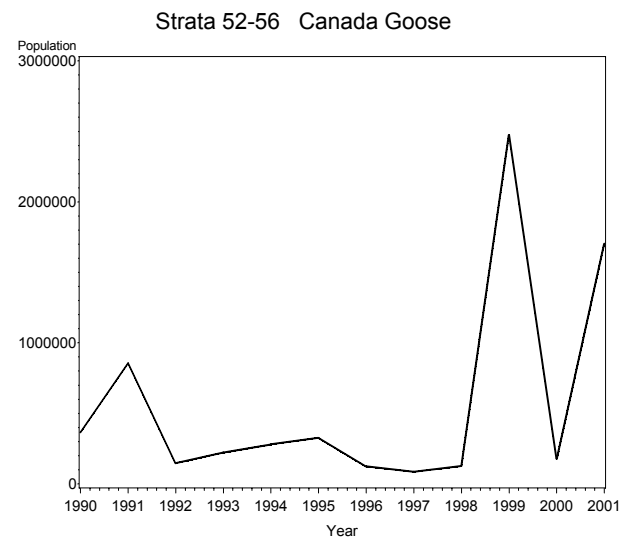
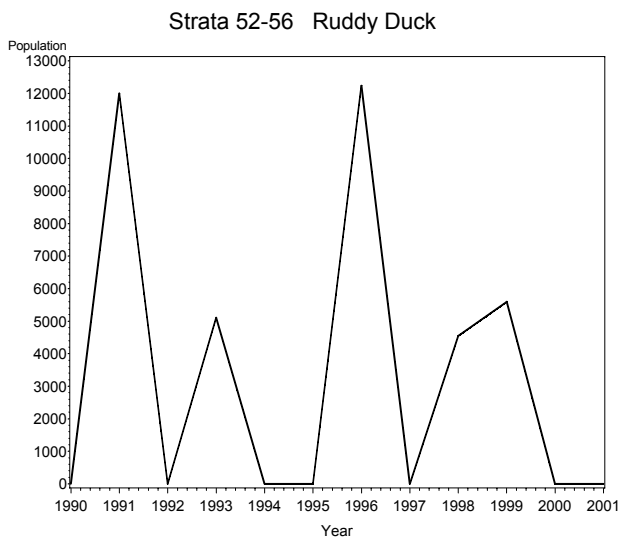
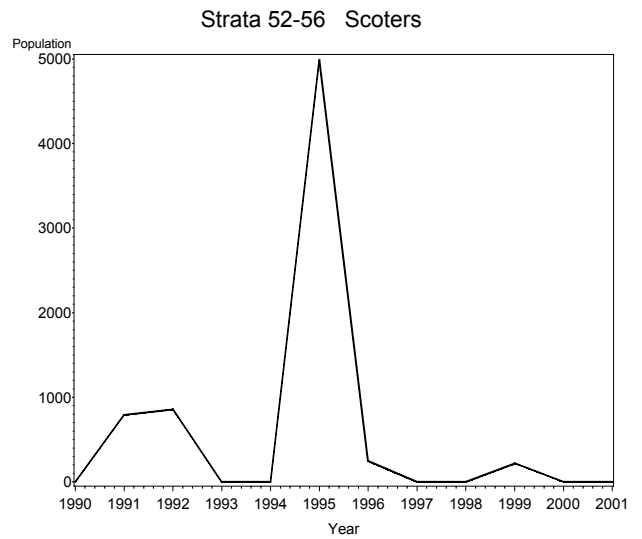
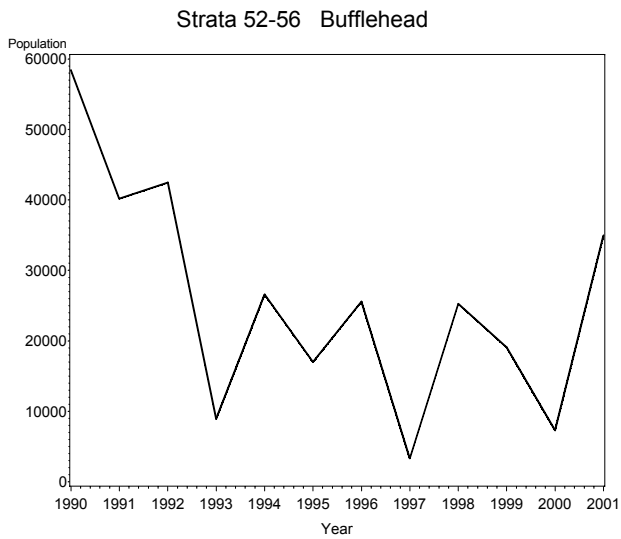
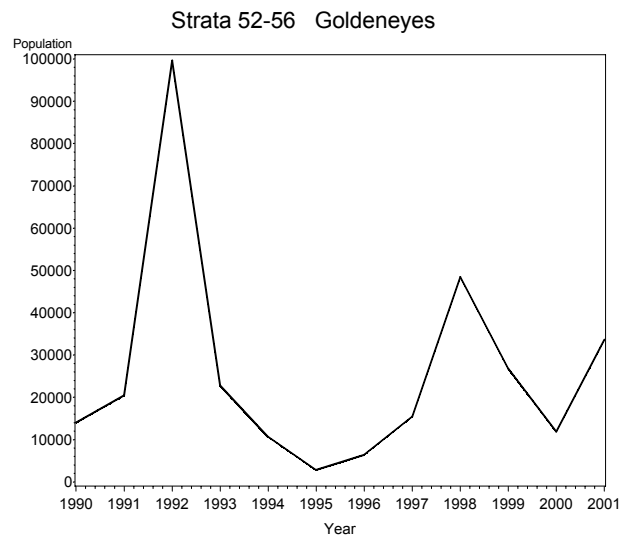
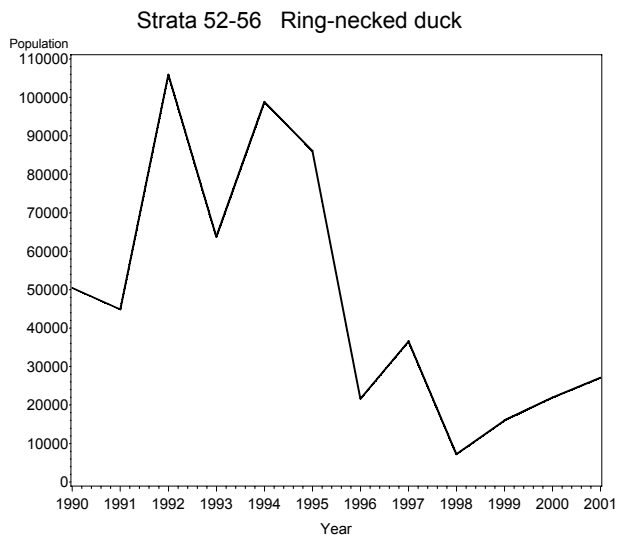


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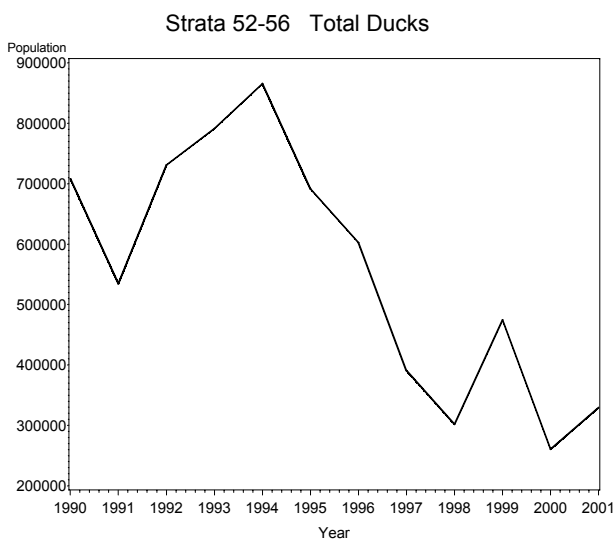
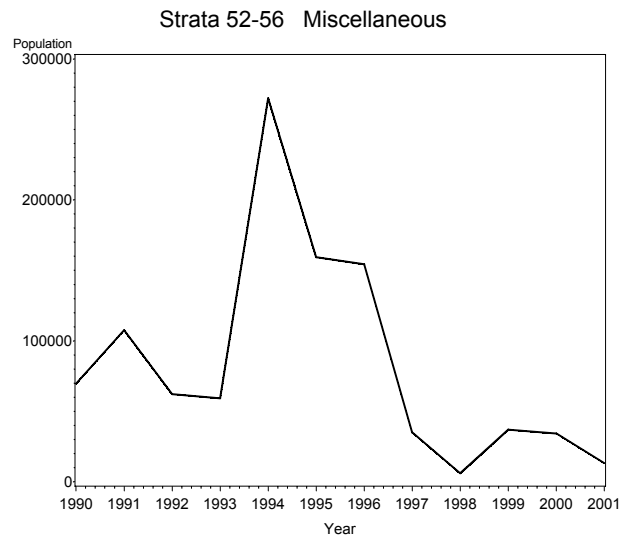
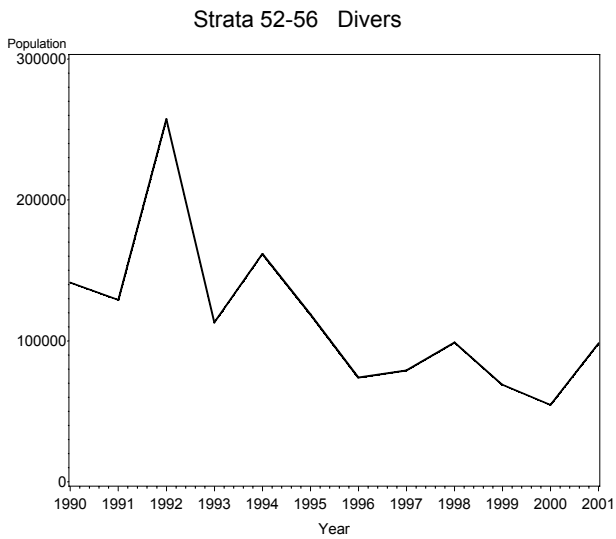
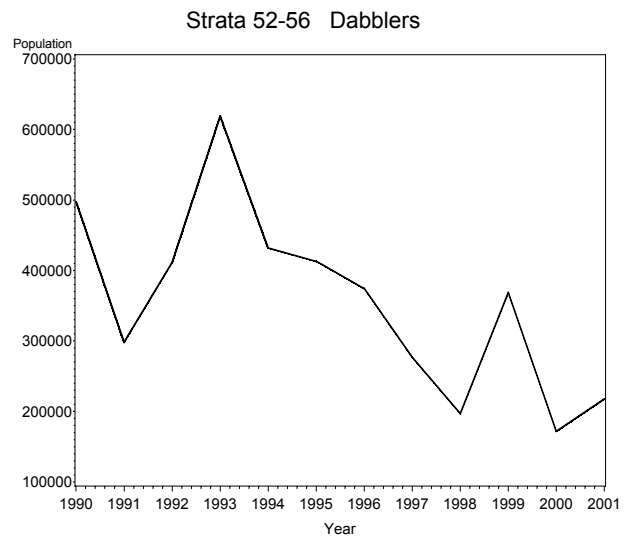
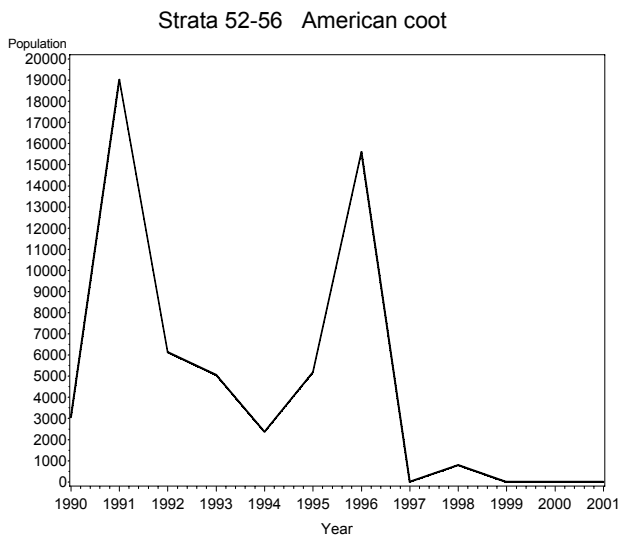


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