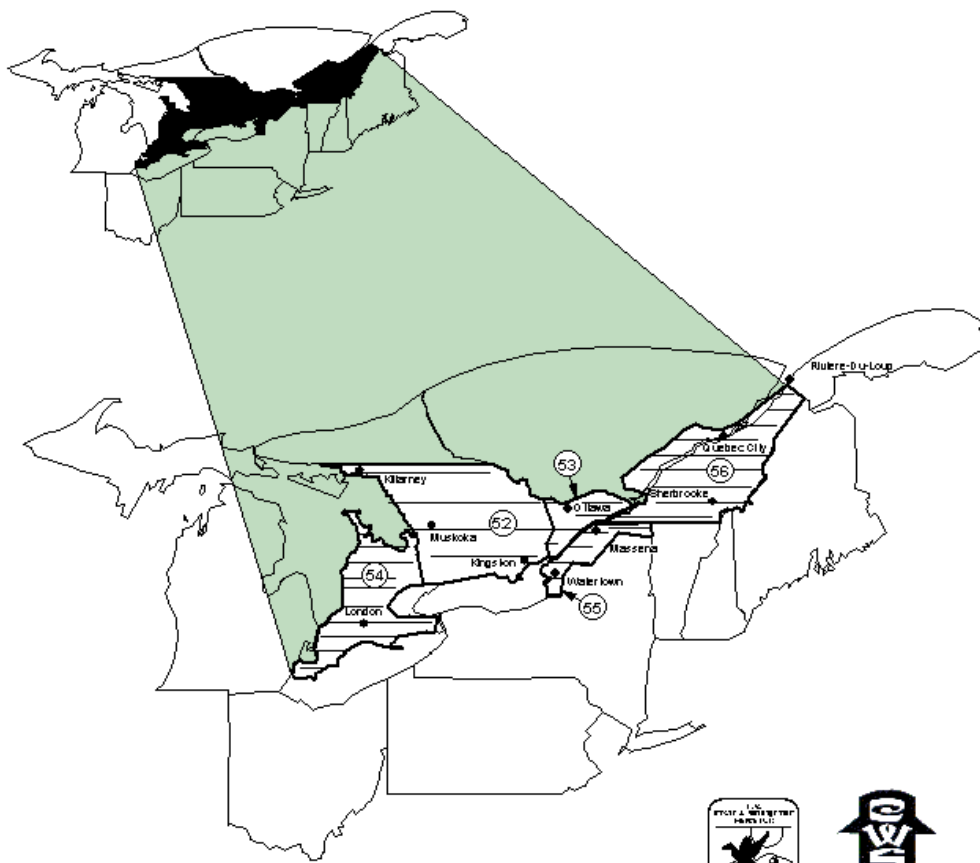


NEW YORK, EASTERN ONTARIO, and SOUTHERN QUEBEC

Waterfowl Breeding Population Survey

2004



2004 Waterfowl Breeding Population Survey in New York, Eastern Ontario, and Southern Quebec

May 2004

Strata Surveyed
52,53,54,55,56

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

Aerial Crew

Pilot/Observer	Mark D. Koneff, U.S. Fish and Wildlife Service
Observer	Douglas J. Forsell, U.S. Fish and Wildlife Service
Rear-seat Observer	M. Tim Jones, U.S. Fish and Wildlife Service

Abstract

This survey has been conducted since 1990 in conjunction with the Black Duck Joint Venture to provide waterfowl breeding population estimates for New York, southern Ontario, and southern Quebec. Similar to the winter of 2002-2003, the winter of 2003-2004 was slightly colder than normal with near average snowfall throughout much of this region. Southern Quebec experienced a drier winter, a trend that continued through the survey period. The return of more mild temperatures in April removed ice cover from wetlands setting the stage for a normal initiation of the breeding season. Just after the initiation of the survey, a mid-latitude jet stream centered over the Great Lakes contributed to the formation of an unstable weather pattern that dominated the area during the course of the survey. Daytime temperatures were above normal and severe weather in the form of afternoon and evening thunderstorms was common. By the initiation of surveys wetland habitat conditions were generally good across all survey strata. Shortly after the survey in southern Ontario, heavy rains caused widespread flooding, that may negatively impact early-season production. The total breeding duck population declined from the 2003 level, and was 18.0% below the long-term average. Dabbling duck population estimates over all were 43.4% below year 2003, and 32.9% below the long-term average. Divers were 1.5% above the 2003 estimate and 48.9% above the long-term average. Canada goose estimates decreased 73.1% from 2003 and were 74.9% below the long-term average. The decline in goose numbers can be largely attributed to the departure of staging Atlantic Population geese prior to initiation of surveys in the Ottawa Valley. The production outlook is normal for southern Ontario and slightly below normal for southern Quebec.

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 pilot/observer has surveyed these strata for 7 consecutive years. Both the primary and secondary observers were new to this survey region. A Partenavia P68 Observer aircraft was used for the survey. Visibility corrections were obtained using Bayesian updating

procedures from data supplied by an ongoing helicopter visibility bias correction study being conducted in eastern Canada. No helicopter operations occurred in strata 52-56 during the 2004 survey, but did occur in neighboring crew areas. A special study on methods for estimation of detection probability was conducted this year in conjunction with the standard survey. This study necessitated the inclusion of the rear seat secondary observer who obtained independent secondary counts for each front seat observer necessary to apply various multiple observer-based methods to detection estimation. Detailed methods and results from this study are described in publications of the Black Duck Joint Venture and are not presented here.

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. Portions of this stratum experienced severe weather and heavy rains during and after the survey period resulting in some local flooding that may have negatively impacted production.

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 and were good in 2004 as a result of near average winter snowfall and rain that fell just prior to and during the aerial survey.

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. In 2004, water conditions were good in this stratum, due, again to near average winter snowfall and to spring rains which fell just prior to and during the period of aerial survey operations. Portions of this stratum experienced severe weather and heavy rains during and after

the survey period resulting in widespread and locally extreme flooding that may have negatively impacted production.

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 predominates within the St. Lawrence Plain and consists primarily of dairy operations and small farms. Abandonment of dairy operations has led to reversion of some dairy farms to scrub or wooded habitats. Some timber harvesting occurs. Water conditions are relatively stable in this stratum but there is some variation particularly within the St. Lawrence Plain. Spring rain and snow prior to the survey resulted in good wetland and stream conditions in 2004. Standing temporary water which was abundant on agricultural fields and pasture in 2003 was largely absent in 2004.

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 of 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 and drainage ditches, 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. In 2004, wetland conditions in lowland agricultural habitats in the western portion of this stratum were good, as were wetland, stream, and ditch habitats in the higher elevation, forested habitats in eastern portions of the stratum. Spring was cool and relatively dry.

At completion of the 2004 survey, the overall outlook for waterfowl production from this region was normal in southern Ontario and slightly below normal in southern Quebec.

Table 1. Survey design for Ontario, New York, and Quebec, May 2004.

STRATUM	52	53	54	55	56
<u>Survey Design</u>					
Square Miles in Stratum	28,266	4,259	12,245	4,149	21,721
Square Miles Sampled in Stratum	180.0	45.0	166.5	54.0	234.0
Number of Transects in Stratum	4	4	9	5	10
Number of Segments in Stratum	40	10	37	12	52
Expansion Factor	157.03	94.64	73.54	76.83	92.82

Current Year Coverage Square Miles in Stratum	28,266	4,259	12,245	4,149	21,721
Square Miles Sampled in Stratum	180.0	31.5	166.5	52.6	234.0
Number of Transects in Sample	4	3	9	5	10
Number of Segments in Sample	40	7	37	12	52
Expansion Factor	157.03	135.21	73.54	78.95	92.82

Breeding Populations

Total breeding duck population declined 28.5% from the 2003 level, and was 18.0% below the long-term average. The dabbling duck population estimate was 43.4% below year 2003, and 32.9% below the long-term average. The mallard estimate decreased 22.5% from year 2003, and was 11.9% below the long-term average. The black duck population estimate was 31.8% below the 2003 estimate and 29.3% below the long-term average. Divers were 1.5% above 2003 estimates and 48.9% above the long-term average. The ring-necked duck population estimate increased 13.6% from the estimate of 2003, and was 54.3% above the long-term average. The bufflehead and goldeneye estimates declined 32.3% and 30.0% from 2003 population levels, respectively. Buffleheads were 52.1% below the long-term average while goldeneye remained 80.2% above the long-term average for this crew area. Canada geese decreased 73.1% from 2003, and were 74.9% below the long-term average. The decline in goose numbers can be largely attributed to the departure of staging Atlantic Population geese prior to initiation of surveys in the Ottawa Valley.

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					2004 Total	2003 Total	1990-2003 Mean	% Change From	
	52	53	54	55	56				2003	1990-2003 Mean
Ducks										
Dabblers										
Mallard	39.9	11.5	37.4	19.8	42.0	150.6	194.3	171.1	-22.5%	-11.9%
Am. black duck	11.6	0.6	6.8	1.4	18.1	38.4	56.4	54.4	-31.8%	-29.3%
Gadwall	0.0	0.0	0.0	1.0	4.0	4.9	6.7	7.0	-26.6%	-29.5%
Am. wigeon	0.0	0.0	2.6	0.0	2.1	4.7	13.1	17.0	-64.1%	-72.3%
Am. green-winged teal	6.7	0.0	10.4	0.8	18.4	36.4	139.3	51.4	-73.9%	-29.1%
Blue-winged teal	0.0	0.0	0.0	0.0	0.0	0.0	7.0	48.7	-100.0%	-100.0%
N. shoveler	0.0	0.0	0.0	0.0	0.6	0.6	0.0	0.9	--	-24.2%
N. pintail	0.8	0.0	0.0	0.0	0.5	1.3	2.0	3.1	-32.7%	-57.0%
Subtotal	59.1	12.1	57.2	22.9	85.7	237.1	418.7	353.4	-43.4%	-32.9%
Divers										
Redhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	--	-100.0%
Canvasback	0.0	0.0	1.1	0.0	0.0	1.1	0.0	1.4	--	-17.6%
Scaups	2.5	0.0	28.9	0.0	1.8	33.2	16.4	8.3	103.3%	299.6%
Ring-necked duck	31.4	4.6	41.8	1.9	5.1	84.9	74.7	55.0	13.6%	54.3%
Goldeneyes	47.4	0.0	3.2	0.0	0.0	50.7	72.4	28.1	-30.0%	80.2%
Bufflehead	6.4	0.0	5.8	0.0	0.0	12.2	18.0	25.4	-32.3%	-52.1%
Ruddy Duck	0.9	0.0	0.0	0.0	1.1	2.0	0.0	3.0	--	-33.0%
Subtotal	88.6	4.6	80.9	1.9	8.1	184.1	181.4	123.6	1.5%	48.9%
Miscellaneous										
Long-tailed duck	0.9	0.0	0.0	0.0	0.0	0.9	0.0	1.1	--	-11.0%
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	--	-100.0%
Scoters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	--	-100.0%
Mergansers	16.1	0.0	2.8	1.3	14.4	34.6	39.1	77.8	-11.5%	-55.5%
Subtotal	17.0	0.0	2.8	1.3	14.4	35.6	39.1	79.6	-9.1%	-55.4%
Total Ducks	164.7	16.7	140.9	26.2	108.2	456.7	639.2	556.7	-28.5%	-18.0%
Canada Goose	30.4	10.7	74.5	17.8	7.6	140.9	523.7	561.8	-73.1%	-74.9%
Am. coot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	--	-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	2002	2003	2004
Ducks					
Dabblers					
Mallard	95.5	138.4	167.1	194.3	150.6
Am. black duck	41.2	40.1	33.9	56.4	38.4
Gadwall	2.8	1.1	5.3	6.7	4.9
Am. wigeon	3.9	9.0	8.0	13.1	4.7
Am. green-winged teal	22.1	28.6	38.5	139.3	36.4
Blue-winged teal	6.1	0.0	0.0	7	0.0
N. shoveler	0.0	0.5	1.2	0	0.6
N. pintail	0.0	0.0	0.0	2	1.3
Subtotal	171.5	217.8	253.9	418.7	237.1
Divers					
Redhead	0.5	2.3	0.0	0	0.0
Canvasback	0.0	0.0	0.0	0	1.1
Scaups	13.1	0.3	0.0	16.4	33.2
Ring-necked duck	21.9	27.1	115.1	74.7	84.9
Goldeneyes	11.9	33.6	8.5	72.4	50.7
Bufflehead	7.3	35.0	28.5	18	12.2
Ruddy Duck	0.0	0.0	3.1	0	2.0
Subtotal	54.6	98.3	155.2	181.4	184.1
Miscellaneous					
Oldsquaw	10.0	0.0	0.0	0	0.9
Eiders	0.0	0.0	0.0	0	0.0
Scoters	0.0	0.0	0.0	0	0.0
Mergansers	24.3	13.3	65.7	39.1	34.6
Subtotal	34.3	13.3	65.7	39.1	35.6
Total Ducks	260.4	329.4	474.9	639.2	456.7
Canada Goose	176.9	1703.0	461.5	523.7	140.9
Am. coot	0.0	0.0	1.0	0	0.0