

# NORTHEASTERN ONTARIO

Experimental Waterfowl Breeding Population and Habitat Survey  
2004



# 2004 Waterfowl Breeding Population Survey Northeastern Ontario

## EXPERIMENTAL STRATUM

May 2004

Stratum Surveyed

57

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

### Abstract

This stratum has been surveyed during five of the past fifteen years in conjunction with the Black Duck Joint Venture to provide waterfowl breeding population estimates for northeastern Ontario to the south and west of James Bay. This experimental stratum was not surveyed in 2003 as a result of crew illness. The winter of 2003-2004 was slightly warmer than normal in this region with normal snowfall levels. Spring phenology was slightly delayed, however by the time the survey was conducted in late May the relatively stable breeding habitat in the region was good and waterfowl pairs were well distributed in the stratum. Timing of the survey was good. No lake ice was observed south of Fort Albany. The largest and deepest lakes north of Fort Albany retained patchy ice cover at the time of the survey in late May. Total dabbling ducks decreased from 2002 levels. Total diving duck abundance increased from 2002. The estimate of breeding Canada geese increased 24.5% from the 2002 estimate. Despite slightly cooler than normal temperatures during the survey period, the production outlook for 2004 is normal.

### Methods

The procedures followed in conducting this survey are detailed in the Standard Operating Procedures for Waterfowl Breeding Population and Habitat Survey, Section III, revised April 1987. A Partenavia P68 Observer aircraft was used for the survey. Visibility corrections were obtained using Bayesian updating procedures and pooled data from an ongoing helicopter visibility bias correction study being conducted in eastern Canada. Also, as a special study of the Black Duck Joint Venture, observers collected auxiliary information on the distance of bird observations from the aircraft. These data will be used to investigate the use of distance sampling methods to estimate observer-specific detection rates. Methods and results of this study will be presented in publications of the Black Duck Joint Venture and are not detailed 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).

Stratum 57 has been surveyed, or partially surveyed, 5 of the past 15 years, 1992, 1993, 2001, 2002, and 2004. This stratum was not surveyed in 2003 as a result of crew illness. All 6 transects were surveyed only in 1993. Only 4 of 6 transects were flown in 2004 because of fuel unavailability north of Moosonee, Ontario. The 1992, 1993, 2001, 2002, and 2004 population estimates in Table 2 correspond to the Southern Unit of Stratum 57. The Southern Unit is a subset of Stratum 57 containing transects 1 - 4. Estimates for the Southern Unit are presented for the sake of comparison among the 5 years that the survey has been conducted, since only transects 1 – 4 have been surveyed in all years. Additionally, because the stratum areas used in the 1992 and 1993 pilot reports were inaccurate, we present population estimates for the entire Stratum 57 for 1993 (Table 3). Visibility correction factors used in estimating populations in all years are presented in Table 4.

### **Weather and Habitat Conditions**

Stratum 57: Terrain in this stratum varies from slightly rolling, elevated, and drier south of James Bay to the nearly flat, wet lowlands in western portions of the stratum. Well-developed river systems drain into James Bay in this stratum. Wetlands in the southeast consist primarily of smaller bogs and wooded wetlands. Large bogs and ribbed fens commonly referred to as “string bogs” constitute much of the western portion of stratum 57, corresponding to the James Bay lowlands physiographic region.

The winter of 2003-2004 was slightly warmer than normal in this region with normal snowfall levels. Spring phenology was slightly delayed, however by the time the survey was conducted in late May the relatively stable breeding habitat in the region was good and waterfowl pairs were well distributed in the stratum. Timing of the survey was good. No lake ice was observed south of Fort Albany. The largest and deepest lakes north of Fort Albany retained patchy ice cover at the time of the survey in late May. Slightly cooler than normal temperatures prevailed during the survey period, however the production outlook for 2004 is normal.

Table 1. Survey design for Northeastern Ontario, 2004.

STRATUM	57
<u>Survey Design</u>	
Square Miles in Stratum	69,302
Linear Miles Sampled in Stratum	1188
Number of Transects in Stratum	6
Number of Segments in Stratum	66
Expansion Factor	233.34

<u>Current Year Coverage</u>	
Square Miles in Stratum (So. Unit)	42,382.5
Linear Miles in Sample	900
Number of Transects in Sample	4
Number of Segments in Sample	50
Expansion Factor	188.37
<u>1993 Coverage</u>	
Square Miles in Stratum (So. Unit)	42,382.5
Linear Miles in Sample	792
Number of Transects in Sample	4
Number of Segments in Sample	44
Expansion Factor	214.05
<u>1993 Coverage</u>	
Square Miles in Stratum (Full Stratum)	69,302
Linear Miles in Sample	1080
Number of Transects in Sample	6
Number of Segments in Sample	60
Expansion Factor	256.67
<u>1992 Coverage</u>	
Square Miles in Stratum (So. Unit)	42,382.5
Linear Miles in Sample	738
Number of Transects in Sample	4
Number of Segments in Sample	41
Expansion Factor	229.71

### **Breeding Populations**

Dabblers decreased 49.1% from 2002. Mallards decreased 30.9% from 2002 and American green-winged teal decreased 89.2%. The American black duck estimate was up 78.6% from 2002. Divers and sea ducks, overall, increased from 2002 estimates. Scaup increased by 102.2% and mergansers by 62.0%, while goldeneye and bufflehead estimates declined 15.4 and 66.5%, respectively from 2002. Ring-necked ducks increased 42.3% from 2002. The estimated number of breeding Canada geese increased 24.5% from the 2002 estimate.



Table 2. Status of waterfowl breeding populations (in thousands, adjusted for visibility bias) by species for the Northeastern Ontario, Southern Unit, with comparisons to previous years.

Stratum 57 (Southern Unit)						
Species	1992	1993	2001	2002	2004	%Change from 2002
<b>Ducks</b>						
<b>Dabblers</b>						
Mallard	49.6	4.7	17.6	62.5	43.2	-30.9
American black duck	21.2	0.0	6.5	11.4	20.4	78.6
Gadwall	0.0	1.3	0.0	0.0	0.0	--
American wigeon	2.4	2.2	0.0	5.1	0.0	-100.0
American green_winged teal	4.9	0.0	8.1	75.9	8.2	-89.2
Blue_winged teal	0.0	0.0	0.0	0.0	0.0	--
Northern shoveler	0.0	0.0	0.0	0.0	2.6	--
Northern pintail	2.4	0.0	0.0	3.0	6.0	99.6
Subtotal	80.5	8.2	32.2	157.9	80.4	-_49.1
<b>Divers</b>						
Redhead	0.0	0.0	0.0	0.0	0.0	--
Canvasback	0.0	0.0	0.0	0.0	0.0	--
Scaup	6.9	3.6	11.9	32.4	65.6	102.2
Ring_necked duck	11.4	30.3	73.6	45.2	64.3	42.3



Table 3. Status of waterfowl breeding population estimates (thousands, adjusted for visibility bias) by species in 1993 for the Northeastern Ontario.

Stratum 57 (Entire Stratum)	
Species	1993
Ducks	
Dabblers	
Mallard	22.9
American black duck	8.7
Gadwall	1
American wigeon	1.6
American green-winged teal	2.8
Blue-winged teal	0
Northern shoveler	0
Northern pintail	1.7
Subtotal	38.7
Divers	
Redhead	0
Canvasback	0
Scaup	6.5
Ring-necked duck	26.8
Goldeneye	18.2
Bufflehead	0.5
Ruddy duck	0
Subtotal	52
Miscellaneous	
Long-tailed duck	0
Eider	0
Scoter	3.6
Merganser	5.5
Subtotal	9.1
Total Ducks	99.8
Canada goose	97.3
Swan	0
American coot	0



Table 4. Visibility correction factors by species and year used in waterfowl breeding population estimation for Northeastern Ontario.

Stratum 57					
Species	1992	1993	2001	2002	2004
Ducks					
Dabblers					
Mallard	2.84	3.65	1.94	1.94	1.94
Black duck	2.88	2.76	2.17	2.17	2.17
Gadwall	3.04	3.04	3.04	3.04	3.04
American wigeon	5.24	5.24	4.53	4.53	4.53
Green-winged teal	1.18	1.49	5.37	5.37	5.37
Blue-winged teal	7.43	7.43	10.31	10.31	10.31
Northern shoveler	3.48	3.48	3.49	3.49	3.49
Northern pintail	2.65	2.65	2.66	2.66	2.66
Divers					
Redhead	3.11	3.11	3.11	3.11	3.11
Canvasback	2.58	2.58	2.59	2.59	2.59
Scaup	0.68	0.68	1.98	1.98	1.98
Ring-necked duck	3.83	4.16	3.08	3.08	3.08
Goldeneye	7.72	7.72	7.55	7.55	7.55
Bufflehead	1.53	1.53	2.02	2.02	2.02
Ruddy duck	5.94	5.94	5.94	5.94	5.94
Miscellaneous					
Oldsquaw	1.99	1.99	1.99	1.99	1.99
Eider	0.00	0.00	3.58	3.58	3.58
Scoter	1.27	1.27	1.45	1.45	1.45
Merganser	0.77	1.10	1.30	1.30	1.30
Canada goose	2.73	2.73	2.72	2.72	2.72
Swan	1.00	1.00	1.00	1.00	1.00
American coot	4.71	4.71	4.71	4.71	4.71