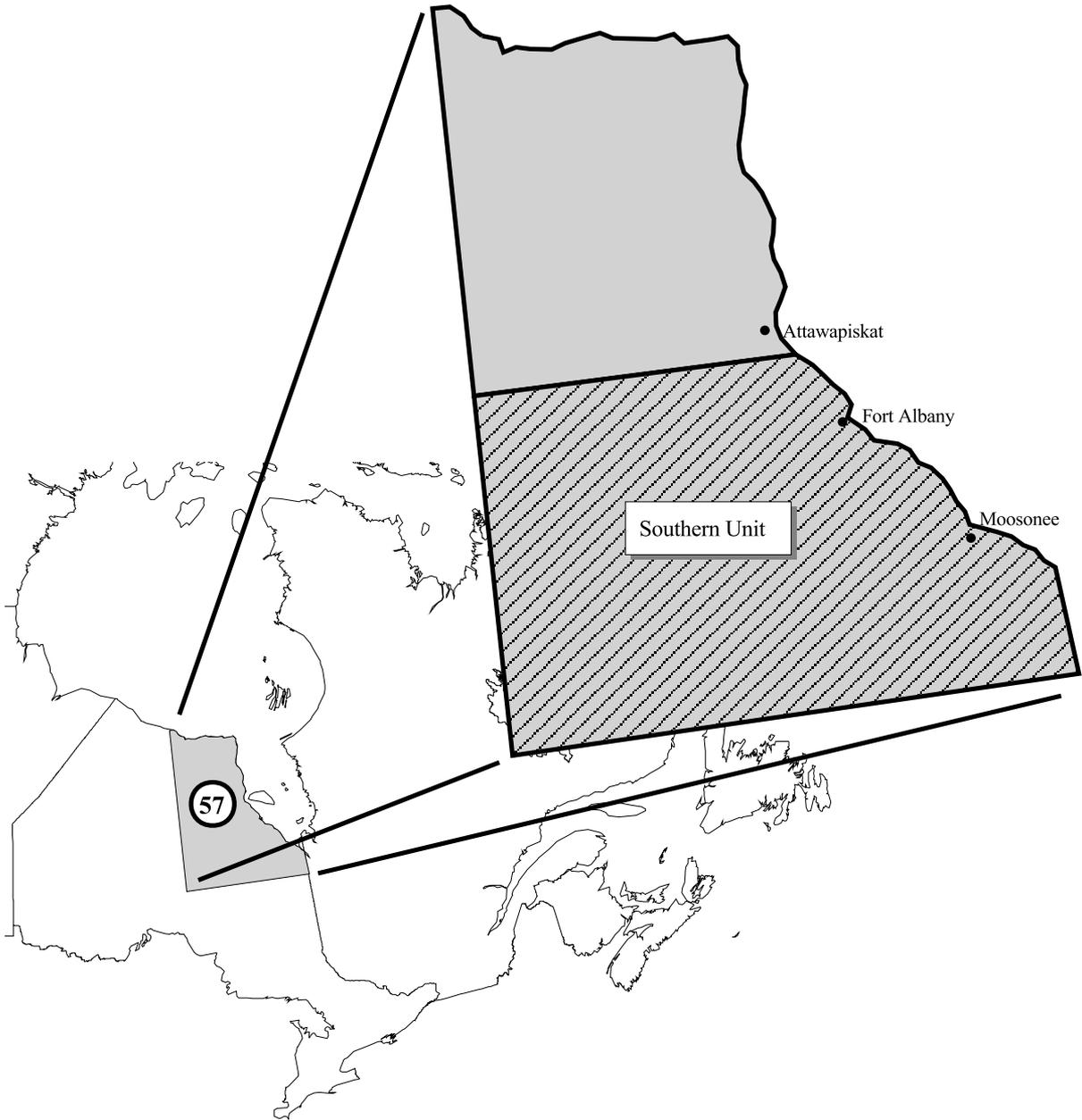


# WESTERN JAMES BAY LOWLANDS

## Experimental Waterfowl Breeding Population Survey 2002



## 2002 Waterfowl Breeding Population Survey Northeastern Ontario

### EXPERIMENTAL STRATUM

May 2002

Stratum Surveyed

57

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

#### Aerial Crew

Pilot/Observer  
Observer

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

#### Abstract

This stratum has been surveyed during four of the past thirteen 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. The winter of 2001-2002 was relatively warm in this region, however, significant snowfall was experienced and resulting breeding habitat conditions were good. During the survey period, a jet-stream pattern known as an “omega block” developed which funneled cold arctic air and snow into this region. Ice had retreated from all smaller wetlands and bog habitats before the survey was initiated. Patch ice remained on some of the larger, deeper lakes during the survey period. Dabblers increased over 2001 estimates possibly due to redistribution from drying mid-continent breeding areas.. Diver abundance overall declined although numbers of scaup and mergansers increased. No scoters or oldsquaw were observed. The estimate of breeding Canada geese increased 30.4% from the 2001 estimate.

#### 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. 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.

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, 4 of the past 13 years, 1992, 1993, 2001, and 2002. All 6 transects have been surveyed only in 1993. Only 4 of 6 transects were flown in 2002 because of fuel unavailability north of Moosonee, Ontario. The 1992, 1993, 2001, and 2002 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 4 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 3 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 2001-2002 in this region was relatively mild, but with and good snow accumulations. Wetland conditions were good and ice completely retreated from all but the largest lakes prior to the initiation of the survey. Cold and blustery conditions prevailed during the survey period, however, with a return to more seasonal weather prior to the hatching period, waterfowl production in 2002 should be good.

Table 1. Survey design for Northeastern Ontario, 2002.

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 increased 390.9% from 2001 due mainly to a 256.2% increase in mallards and a 837.5% increase in American green-winged teal. The increase in mallards may be partially attributable to redistribution from mid-continent regions which were experiencing drier conditions than over the past several years. The American black duck estimate was up 75% from 2001. Divers and sea ducks, overall, declined from 2001 estimates. Scaup increased by 171.9% and mergansers by 40.0%, while goldeneye and bufflehead estimates declined 13.3 and 52.6%, respectively from 2001. Ring-necked ducks declines 38.6% from 2001, but remained numerous in the Southern Unit with an estimated population of 45.2 thousand birds. No scoters or oldsquaw were observed in 2001 on transects 1 – 4. The estimated number of breeding Canada geese increased 30.4% from the 2001 estimate.

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

Stratum 57 (Southern Unit)					
Species	1992	1993	2001	2002	%Change from 2001
Ducks					
Dabblers					
Mallard	49.6	4.7	17.6	62.5	256.2
Black duck	21.2	0.0	6.5	11.4	75.0
Gadwall	0.0	1.3	0.0	0.0	--
American wigeon	2.4	2.2	0.0	5.1	--
Green-winged teal	4.9	0.0	8.1	75.9	837.5
Blue-winged teal	0.0	0.0	0.0	0.0	--
Northern shoveler	0.0	0.0	0.0	0.0	--
Northern pintail	2.4	0.0	0.0	3.0	--
Subtotal	80.5	8.2	32.2	157.9	390.9
Divers					
Redhead	0.0	0.0	0.0	0.0	--
Canvasback	0.0	0.0	0.0	0.0	--
Scaup	6.9	3.6	11.9	32.4	171.9
Ring-necked duck	11.4	30.3	73.6	45.2	-38.6
Goldeneye	14.2	13.2	42.7	37.0	-13.3
Bufflehead	2.8	0.0	14.5	6.9	-52.6
Ruddy duck	0.0	0.0	0.0	0.0	--
Subtotal	35.3	47.1	142.7	121.5	-14.9
Miscellaneous					
Oldsquaw	0.9	0.0	0.0	0.0	--
Eider	0.0	0.0	0.0	0.0	--
Scoter	26.8	0.0	0.0	0.0	--
Merganser	6.9	6.1	7.3	10.2	40.0
Subtotal	34.7	6.1	7.3	10.2	40.0
Total Ducks	150.4	61.5	182.2	289.7	59.0
Canada goose	77.8	63.7	70.8	92.3	30.4
Swan	0.0	0.0	0.0	0.4	--
American coot	0.0	0.0	0.0	0.0	--

Table 3. Status of waterfowl breeding population estimates (thousands, adjusted for visibility bias) by species in 1993 for the western James Bay lowlands.

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 the Western James Bay Lowlands.

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