Summary of the 1999 Waterfowl Population

by Joseph W. Hammond

Every year the U.S. Fish and Wildlife Service (USFWS) publishes a report detailing the status of North American waterfowl populations in order to aid the establishment of hunting regulations. *Waterfowl Population Status, 1999* contains information on habitat quality and availability as well as waterfowl breeding population and production derived from surveys conducted by the USFWS, the Canadian Wildlife Service, State and Provincial agencies, and private organizations. Here are summarized the results published in this report, forming an overall picture of the continental waterfowl population in 1999. All in all, it was a very successful year for these species in North America.

The Duck Population

Two areas were surveyed to determine the populations of ducks in North America: the Traditional Survey Area (TSA), which encompasses Alaska, central and western Canada, and the north-central U.S., and the Eastern Survey Area (ESA), located in Ontario, Quebec, and Maine. Other outlying regions were also sampled, but these data are not included in this summary.

Due to unusually high spring precipitation, the condition of breeding habitat in the TSA was rated as good to excellent, better than in 1998. The number of ponds during May in Prairie Canada and the north-central U.S. was estimated at 6.70 million, 46% higher than 1998's total of 4.59 million ponds and 37% higher than the long-term average (LTA) from 1974-1998 of 4.88 million ponds. Conditions in the ESA were less favorable after unusually dry spring weather, which resulted in fewer ponds and low water levels in permanent wetlands, and production was expected to be limited in this area. Because summer weather also influences duck populations, a July pond survey was conducted in the TSA. Excellent conditions continued in Prairie Canada and the north-central U.S., with 5.21 million ponds available in July. This estimate was the largest on record, 24% higher than 1998 (4.20 million ponds) and 94% higher than the LTA (1974-1998) of 2.68 million ponds.

Overall, the estimated breeding population for all ducks (excluding scoters, eiders, oldsquaws, mergansers, and wood ducks) in the TSA was 43.4 million birds. This, the largest on record, was 11% higher than 1998's estimate of 39.1 million and 32% higher than the LTA (1955-1998) of 32.8 million. The estimated breeding population for all ducks (excluding scoters, eiders, oldsquaws, mergansers, and wood ducks) in the ESA was 1.25 million birds. Although not a statistically significant change, this estimate was 23% higher than 1998's estimate of 1.01 million and 26% higher than the LTA (1995-1998) of 0.99 million.

Of 10 principal duck species in the TSA, five (mallard, green-winged teal, northern shoveler, northern pintail, and scaup—greater and lesser combined) showed significant increases over 1998, while one—gadwall—showed a slightly significant decrease (Table 1). The mallard estimate of 10.8 million was the second highest on record, after 11.2 million in 1958. Although gadwall decreased from 1998, the 1999 estimate of 3.24 million was the third highest on record: only 1997 (3.90 million) and 1998 (3.74 million) were higher. The green-winged teal estimate of 2.63 million was

the second highest on record, the highest having been 1959's 2.65 million. Blue-winged teal set a new record with 7.15 million in 1999. The northern shoveler estimate (3.89 million) in 1999 was the second highest, after 1997's estimate of 4.12 million. The redhead estimate of 0.97 million was also the second highest, next to 1.01 million in 1998. Finally, the canvasback estimate of 0.72 million in 1999 was the fourth highest on record.

Looking at the LTAs for the 10 principal species in the TSA we find that seven species were significantly above the LTA (1955-1998) (Table 1). Such increases included: mallards 47%, gadwall 110%, green-winged teal 50%, blue-winged teal 65%, northern shovelers 95%, redheads 60%, and canvasbacks 29% (Table 1). Two species were significantly lower than their LTAs, northern pintail by 30% and scaup (greater and lesser combined) by 18% (Table 1).

In the ESA, data were presented for the 10 most abundant duck species. Most species' population estimates were statistically similar to those of 1998 (Table 2). The goldeneye (common and Barrow's combined) estimate of 308,000 in 1999, though 196% higher than in 1998, was only marginally statistically significant (Table 2). Scaup (greater and lesser combined) showed a 93% decrease from 1998, but again this was only marginally significant (Table 2). Only three species in the ESA showed significant changes from their LTAs (1995-1998) in 1999 (Table 2). Blue-winged teal were down by 95%, scaup (greater and lesser combined) down by 90%, and goldeneye (common and Barrow's combined) up by 287% (Table 2).

American black ducks are monitored each year through mid-winter surveys in the Atlantic and Mississippi flyways and through spring surveys in the ESA (see above). In these flyways, the 1999 winter count was 318,000 birds, 31% higher than in 1998 (243,000) and 11% above the most recent 10-year average (287,500). Over 80% of these birds were found in the Atlantic flyway. It should be noted that even though the Mississippi flyway count (46,700) was 14% higher than in 1998, it was still 34% lower than the most recent 10-year average of 70,500.

Wood ducks are monitored through the North American Breeding Bird Survey yearly during May and June. Unfortunately, wood ducks are not encountered very often on these roadside counts and therefore the amount of usable data is limited. Some trends have been noted however, and it seems the number of wood ducks in the Atlantic and Mississippi flyways has increased by 5-6% over the long term (1966-1998) and the short term (1980-1998) as well.

Evidently, ducks had a very good year in 1999 (especially in the TSA) and were noted in record or near-record numbers. An indication of what will be witnessed in the autumn of 1999 is the fall flight index. This number is based on surveys in the TSA and six other states (California, Colorado, Minnesota, Nebraska, Wisconsin, and Wyoming) and estimates the total number of ducks (again excluding scoters, eiders, oldsquaws, mergansers, and wood ducks) set to migrate through North America. Hold onto your seats, because the 1999 total duck fall flight index is predicted to be *105 million* birds! This is a new record. Of these 105 million birds, fully 13.6 million are expected to be mallards.

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Table 1. Duck breeding population estimates (in thousands) for the Traditional Survey Area. Reproduced from *Waterfowl Population Status, 1999* by the USFWS.

			Change from 1998			Change from LTA	
Species	1998	1999	%	*P*	LTA[a]	%	*P*
Mallard	9640	10806	+12	0.011	7374	+47	<0.001
Gadwall	3742	3235	-14	0.054	1538	+110	<0.001
American Wigeon	2858	2920	+2	0.791	2641	+11	0.127
Green-winged Teal	2087	2631	+26	0.015	1756	+50	<0.001
Blue-winged Teal	6399	7149	+12	0.128	4337	+65	<0.001
Northern Shoveler	3183	3890	+22	0.006	1999	+95	<0.001
Northern Pintail	2521	3058	+21	0.045	4348	-30	<0.001
Redhead	1005	973	-3	0.822	610	+60	<0.001
Canvasback	686	716	+4	0.767	556	+29	0.046
Scaup[b]	3472	4412	+27	0.002	5405	-18	<0.001
Total[c]	39082	43436	+11	<0.001	32797	+32	<0.001

[a] Long-term average (1955-1998).
[b] Greater and lesser combined.
[c] Includes American black duck, ring-necked duck, goldeneye, bufflehead, and ruddy duck; excludes scoter, eider, oldsquaw, merganser, and wood duck.

Table 2. Duck breeding population estimates (in thousands, for the 10 most abundant species) for the Eastern Survey Area. Reproduced from *Waterfowl Population Status, 1999* by the USFWS.

			Change from 1998			Change from LTA	
Species	1998	1999	%	*P*	LTA[a]	%	*P*
Mallard	309	245	-21	0.410	275	-11	0.518
American Black Duck	176	126	-28	0.223	167	-25	0.232
Gadwall	4	14	+241	0.328	11	+25	0.821
American Wigeon	21	77	+268	0.201	22	+258	0.199
Green-winged Teal	142	185	+30	0.627	123	+50	0.267
Blue-winged Teal	15	2	-89	0.151	29	-95	<0.001
Scaup[b]	21	1	-93	0.073	15	-90	0.018
Ring-necked Duck	177	213	+20	0.662	228	-7	0.842
Goldeneye[c]	104	308	+196	0.053	80	+287	0.028
Bufflehead	40	64	+58	0.305	34	+88	0.159
Total[d]	1013	1247	+23	0.219	993	+26	0.114

[a] Long-term average (1995-1998).
[b] Greater and lesser combined.
[c] Common and Barrow's combined.
[d] Includes northern shoveler, northern pintail, redhead, canvasback, and ruddy duck; excludes scoter, eider, oldsquaw, merganser, and wood duck.

The Goose and Swan Populations

Unlike those of ducks, goose and swan population estimates are derived from independent surveys conducted by federal, state, and provincial biologists, as well as universities and government agencies, instead of coordinated annual surveys. As a result, some estimates are of wintering birds while others are of breeders. Despite this, a clear picture is formed regarding the status of geese and swans in North America.

Spring weather conditions in the Arctic and Subarctic had an effect on breeding success that varied according to region. The onset of spring was average or earlier than average in the south-central and southeastern Arctic, but later than average in the western and high Arctic and Alaska. Spring weather conditions in southern Canada and the U.S. were very favorable for staging and nesting geese.

Canada Geese

Atlantic Population—In 1999, a spring survey on the Ungava Peninsula in northern Quebec revealed 77,451 breeding pairs. This was an increase of 84% over 1998, but the rate of change since 1989 has not differed significantly from a stable population's. A June 1999 estimate of total population size was 428,166 birds, similar to the 1998 estimate.

North Atlantic Canada Geese—Nest densities in Labrador were significantly higher in 1999.

Atlantic Flyway Resident Population—A spring 1999 survey in the northeastern U.S. revealed a population estimate of 999,496 birds. This estimate was close to 1998's, but overall this population has been increasing by an average of 14% per year since 1989.

Southern James Bay Population—A spring survey estimated a population of 136,623 birds, similar to 1998. Over the last 10 years, there has been a significant increase in size of this population.

Mississippi Valley Population—969,499 geese were counted in a spring 1999 survey. This was a 118% increase over 1998, but there has been no steady trend in the population over the last 10 years.

Mississippi Flyway Giant Population—The spring 1999 population estimate was 1,390,200 birds, similar to 1998. These are Ohio's resident geese.

Eastern Prairie Population—The breeding population was estimated at 270,540 birds in spring 1999, 68% more than in 1998. Still, there has been no overall trend in the population over the last 10 years.

Western Prairie Population/Great Plains Population—467,162 geese were counted in a January 1999 survey, a number similar to 1998's. These populations have been increasing at a rate of 4% per year over the last 10 years.

Tall Grass Prairie Population—In the Central flyway, 548,206 geese were counted in January 1999. This number was 63% higher than the December 1997 estimate. There has been a trend toward growth in the population over the last 10 years.

Short Grass Prairie Population—In January 1999, surveys revealed 403,197 geese. This number is similar to the previous year's count; there has been no steady trend in the population over the last 10 years.

Hi-Line Population—A January 1999 survey estimated 119,500 geese, 37% less than 1998's estimate. Over the last 10 years, however, this population has increased at

an average rate of 7% per year.

Rocky Mountain Population—114,416 birds were counted in the January 1999 survey. Although this number was slightly higher than the 1998 count, no trend has been noted over the last 10 years. This population has increased in size over the longer term, however.

Pacific Population—The number of nesting pairs and overall production in California in 1999 were low relative to the 10-year average. Other Pacific regions reported numbers similar to or less than 1998's.

Dusky Canada Geese—The January 1999 population estimate was 13,447 geese, 36% lower than the previous winter's.

Cackling Canada Geese—The fall 1998 count was 195,516 geese, slightly larger than the fall 1997 count. Overall, this population has been increasing at an average of 12% per year for the last 10 years.

Lesser Canada Geese—Because these geese mix with other Canada geese in winter, no reliable population estimates are available.

Greater Snow Geese

The spring 1999 photographic survey revealed 800,387 geese, a new record high count, and 15% higher than in 1998. This population has grown by 14% per year on average since 1989, increasing eight-fold since 1970. The report did indicate poor breeding success this year, resulting in a fall flight expected to be lower than in 1998.

Lesser Snow Geese

Mid-Continent Population—The January 1999 survey revealed 2,575,700 'light' geese (mostly lesser snow geese, with some Ross's geese). This number was slightly lower than 1998's count, but this population has been increasing at an average rate of 5% per year over the last 10 years. Overall, it has tripled since 1970.

Western Central Flyway Population—The January 1999 survey counted 236,400 'light' geese. This was a 100+% increase over 1998, and this population has increased at an average rate of 9% per year over the last 10 years. Since 1980, it has increased almost six-fold.

Western Arctic/Wrangel Island Population—The winter 1999 estimate was 354,300 'light' geese, 15% lower than the 1998 estimate. This is the only population of 'light' geese in decline (approximately 6% per year over the last 10 years).

Ross's Geese

Because Ross's geese are included in snow goose counts, no estimate of winter population size is available. Breeding surveys in Canada suggest a steady increase since the mid-1960s, and preliminary estimates from Canadian biologists suggest that there are approximately 1,000,000 Ross's geese in North America.

Greater White-fronted Geese

Pacific Population—Fall 1998's population estimate was 413,000 geese, 29% higher than fall 1997's. The population has increased at an average rate of 7% per year

over the last 10 years.

Mid-Continent Population—The fall 1998 estimate of 1,058,300 geese was 70% higher than the fall 1997 estimate. There has been no larger trend in the population over the last seven years.

Brant

Atlantic Brant—The January 1999 estimate was 171,628 birds, 24% higher than in 1998. There has been no trend in the overall population over the last 10 years, but the 1999 estimate was 25% higher than the 10-year average.

Pacific Brant—129,208 were counted in January 1999. This number was 7% lower than the 1998 count, but there has been no trend in the population over the last 10 years.

Emperor Geese

The spring 1999 count revealed 54,600 birds, 38% more than in 1998. There has been no large-scale trend in the population over the last 10 years, but the population has declined overall since the late 1970s and early 1980s.

Tundra Swans

Western Population—The January 1999 estimate of 119,800 birds was 70% higher than 1998's. This population has increased at an average rate of 7% per year since 1989.

Eastern Population—The January 1999 population estimate was 109,000 birds, 13% more than 1998's. There has been no trend in this population over the last 10 years.

Conclusions

Many populations of ducks, geese, and swans increased in 1999. Record high counts and estimates above long-term averages are encouraging, meaning that we—as a growing population—are realizing more keenly that the continent's wildlife is intrinsically valuable and should be preserved. Granted, many people do not appreciate our large population of Mississippi Flyway Giant Canada geese, but the next time they complain, remind them that these geese were not here just a few years ago and that they are a valued part of our reintroduced wildlife, just like trumpeter swans. Furthermore, you are armed with data; there are demonstrably no more of these geese now than a year ago. On the serious side, the continuing overall decline of northern pintail, scaup, and American black ducks is disheartening, but as with other species, good management practices and habitat preservation promise to bring these populations back up to historical levels. Enjoy the fall migration as 105 million ducks and seemingly countless numbers of geese and swans traverse the continent to their wintering areas.