The Waterfowl Breeding Population and Habitat Surveys and the Waterfowl Status Report are the result of a collaborative effort conducted annually by the U.S. Fish and Wildlife Service, Canadian Wildlife Service, and the Atlantic, Mississippi, Central, and Pacific Flyway Councils.

U.S. Fish & Wildlife Service

Waterfowl

Population Status, 2025

Waterfowl Population Status, 2025

September 2, 2025

In the United States, the process of establishing hunting regulations for waterfowl is conducted annually. This process involves a number of scheduled meetings in which information regarding the status of waterfowl is presented to individuals within the agencies responsible for setting hunting regulations. In addition, the proposed regulations are made available for public comment. This report includes the most current breeding population and production information available for waterfowl in North America and is a result of cooperative efforts by the U.S. Fish and Wildlife Service (USFWS), the Canadian Wildlife Service (CWS), various state and provincial conservation agencies, and private conservation organizations. In addition to providing current information on the status of populations, this report is intended to aid the development of waterfowl harvest regulations in the United States for the 2026–2027 hunting season.

Cover: 2024 Federal Duck Stamp contest winner, Adam Grimm. A pair of spectacled Eiders in acrylic. Used with permission from the Federal Duck Stamp Office.

Acknowledgments

The information contained in this report is the result of the efforts of numerous individuals and organizations. Principal contributors include the Canadian Wildlife Service, U.S. Fish and Wildlife Service, state wildlife conservation agencies, and provincial conservation agencies from Canada. In addition, several conservation organizations, other state and federal agencies, universities, and private individuals provided information or cooperated in survey activities. Appendix A.1 provides a list of individuals responsible for the collection and compilation of data for the "Status of Ducks" section of this report. Appendix A.2 provides a list of individuals who were primary contacts for information included in the "Status of Geese and Swans" section. We apologize for any omission of individuals from these lists, and thank all participants for their contributions.

This report was compiled by the U.S. Fish and Wildlife Service, Division of Migratory Bird Management, branches of Assessment and Decision Support, Monitoring and Data Management, and Migratory Bird Surveys. The principal authors are Joshua Dooley, Walt Rhodes, and Nathan Zimpfer. The preparation of this report involved substantial efforts on the part of many individuals. Support for the processing of data and publication was provided by Meghan Eyler, John Yeiser, Frank Rivera, and Jeff Hostetler. Kathy Fleming and Phil Thorpe provided the maps. We especially would like to recognize Lara Mitchell for her statistical support while detailed to the Division of Migratory Bird Management.

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All Waterfowl Population Status reports are available from our website (`https://www.fws.gov/library/collections/waterfowl-population-status-reports`).

Executive Summary

This report summarizes the most recent information about the status of North American waterfowl populations and their habitats to facilitate the development of harvest regulations. The annual status of these populations is monitored and assessed through abundance and harvest surveys. This report details abundance estimates; harvest survey results are discussed in separate reports. The data and analyses were those most currently available when this report was written. Future analyses may yield slightly different results as databases are updated and new analytical procedures become available.

Habitat conditions during the 2025 WBPHS generally continued to decline over a large portion of the surveyed area relative to 2024. The majority of the decline was in the traditional survey area of interior Canadian provinces and portions of the northcentral U.S. With the exception of February 2025, most of the Canadian prairies had a mild winter with above- to well-above-average precipitation, however, because of underlying dry soil conditions, much of the precipitation had percolated below ground by spring. Well-above average temperatures in April and May combined with below-average precipitation only reinforced the dry conditions. Some rainfall did occur on portions of the prairies later in the spring but not in time to benefit most initial nesting waterfowl. There was some improvement in the western boreal forest but most remained dry and had wildfires roaring as soon as spring began. The northcentral U.S. experienced a similar weather pattern as the Canadian prairies without the benefit of above-average winter precipitation. As in 2024, nearly all of eastern Canada and the Great Lakes region had good to excellent habitat conditions. Minnesota was the only area that experienced a substantial decline in habitat quality since last year. In 2025, spring phenology was early or average across most areas in the Subarctic and Arctic, although later than average spring phenology occurred in some areas of northern Alaska and the western Canadian Arctic. The total pond estimate (Prairie Canada and northcentral U.S. combined) was 4.2 ± 0.1 million, which was 19% below the 2024 estimate of 5.2 ± 0.2 million, and 20% below the long-term average (5.2 ± 0.03 million). The 2025 estimate of ponds in Prairie Canada was 2.6 ± 0.1 million. This estimate was similar to the 2024 estimate of 2.7 ± 0.1 million and 27% below the long-term average (3.5 ± 0.02 million). The pond estimate for the northcentral U.S. was 1.6 ± 0.08 million, which was 34% below the 2024 estimate (2.5 ± 0.1 million) and similar to the long-term average of 1.7 ± 0.01 million.

Summary of Duck Populations

In the traditional survey area, which includes strata 1–18, 20–50, and 75–77, the total duck population estimate (excluding scoters [*Melanitta* spp.], eiders [*Somateria* spp. and *Polysticta* spp.], long-tailed ducks [*Clangula hyemalis*], mergansers [*Mergus* spp. and *Lophodytes cucullatus*], and wood ducks [*Aix sponsa*]) was 34.0 ± 0.6 million birds. This estimate was unchanged from the 2024 estimate and 4% below the long-term average of 35.4 ± 0.09 million. Estimated total mallard (*Anas platyrhynchos*) abundance was 6.6 ± 0.3 million, which was nearly equal to the 2024 estimate and 17% below the long-term average of 7.9 ± 0.04 million. The estimate of gadwall (*Mareca strepera*; 2.4 ± 0.1 million), and American wigeon (*M. americana*; 3.2 ± 0.3 million) were similar to their 2024 estimates and were 17% and 22% above their long-term averages of 2.1 ± 0.02 million and 2.6 ± 0.02 million, respectively. Estimates of green-winged teal (*Anas crecca*; 2.6 ± 0.2 million) and northern shoveler (*Spatula clypeata*; 2.8 ± 0.2 million) were similar to their 2024 estimates

and their long-term averages. The estimate for blue-winged teal (*S. discors*; 4.4 ± 0.2 million) was also similar to the 2024 estimate and 13% below the long-term average of 5.1 ± 0.04 million. The northern pintail (*Anas acuta*) estimate was 2.2 ± 0.2 million, which was similar to the 2024 estimate and 41% below the long-term average of 3.8 ± 0.03 million. Estimates of redheads (*Aythya americana*) and canvasbacks (*A. valisineria*) were 0.9 ± 0.08 million and 0.7 ± 0.06 million, which were similar to their 2024 estimates. The redhead estimate was 25% above their long-term average of 0.7 ± 0.01 million, while the canvasback estimate was similar to their long-term average. The combined estimate of lesser and greater scaup (*A. affinis* and *A. marila*; 3.7 ± 0.2 million) was similar to the 2024 estimate and 25% lower than the long-term average of 4.9 ± 0.04 million.

A time series for assessing changes in green-winged teal, ring-necked duck (*A. collaris*), goldeneye (*Bucephala clangula* and *B. islandica*), merganser, and American black duck (*Anas rubripes*) population status in the eastern survey area is provided by breeding waterfowl surveys conducted by the U.S. Fish and Wildlife Service (USFWS) and Canadian Wildlife Service (CWS) in Maine and eastern Canada. In the eastern survey area, the estimate of goldeneyes was 0.7 ± 0.2 million, which was 25% below the 2024 estimate and similar to the long-term average. The green-winged teal estimate was 0.3 ± 0.08 million, which was 24% below the 2024 estimate and similar to the long-term average. The 2025 estimate of mergansers (1.1 ± 0.1 million) was similar to their 2024 estimate and remains 28% above their long-term average. The 2025 estimates of ring-necked ducks (0.8 ± 0.2 million) and American black ducks in the eastern survey area (0.8 ± 0.09 million) were similar to their 2024 estimates and their long-term average. Eastern mallard population status is derived by integrating data from the eastern survey area and ground plot surveys conducted in the northeastern U.S. states of Virginia north to New Hampshire. The estimated abundance of mallards in eastern North America was 1.1 ± 0.2 million, which was similar to the 2024 estimate and 10% below the long-term average.

Summary of Goose and Swan Populations

Of the 26 goose and tundra swan (*Cygnus columbianus*) populations, the primary monitoring indices for 8 of these populations had significant ($P < 0.05$) negative trends (% change per year) during the most recent 10-year period: cackling/minima (–9%) and Taverner's (–4%) cackling geese (*Branta hutchinsii*), Midcontinent Population lesser (–12%) and greater (–6%) snow geese (*Anser caerulescens*), Pacific Population greater white-fronted geese (*A. albifrons*; –6%), Atlantic brant (*B. bernicla*; (–4%), emperor geese (*A. canagicus*; –5%), and Western Population tundra swans (–7%). One population had a significant positive trend: Wrangel Island Population lesser snow geese (+7%). Of the 21 populations for which primary indices included variance estimates, the most recent estimate for 6 populations significantly increased from the prior year's estimate: Atlantic Population (+68%) and Dusky (+45%) Canada geese (*B. canadensis*), Ross's geese (*A. rossii*; +217%), Midcontinent Population lesser snow geese (+71%), Midcontinent Population greater white-fronted geese (+115%), and emperor geese (+29%). One population's most recent estimate decreased from the prior year's estimate: greater snow geese (–32%). Of the 5 populations for which primary indices did not include variance estimates, the most recent count was greater than the prior count for Mississippi Flyway Giant Population Canada geese (+1%), Atlantic brant (+19%), and Eastern Population tundra swans (+20%) and less than the prior count for Western Arctic (–11%) and Wrangel Island (–14%) Population lesser snow geese.

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Status of Ducks

This section summarizes the most recent information about the status of North American duck populations and their habitats. The annual status of these populations is assessed using databases resulting from surveys which include estimates of breeding populations and harvest. This report details abundance estimates; harvest survey results are discussed in separate reports. The data and analyses were the most current available when this report was written. Future analyses may yield slightly different results as databases are updated and new analytical procedures become available.

Methods

Waterfowl Breeding Population and Habitat Survey (WBPHS)

Federal, provincial, and state agencies conduct surveys each spring to estimate the size of breeding waterfowl populations and to evaluate habitat conditions. These surveys are conducted by ground (Atlantic Flyway Breeding Waterfowl Survey; Sauer et al. 2014) or by airplanes and helicopters, and cover over 2.0 million square miles that encompass principal breeding areas of North America. The traditional survey area (strata 1–18, 20–50, and 75–77) comprises parts of Alaska, Canada, and the northcentral U.S., and covers approximately 1.3 million square miles (Figure 1). Specifics on the survey design are provided in Smith (1995). The eastern survey area (strata 51–53, 56, and 62–72) includes parts of Ontario, Quebec, Labrador, Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, and Maine, covering an area of approximately 0.7 million square miles (Figure 1). Historically, surveys in the east were also conducted in strata 54, 55, and 57–59. Surveys in strata 57–59 were discontinued in 2011 due to a reduction in aviation staff. In 2012, stratum 55 was discontinued primarily because it overlapped with an existing ground survey. In 2017, stratum 54 was discontinued due to increased aviation hazards such as wind turbines and power lines. None of the discontinued strata in the eastern survey are part of existing management frameworks. In Prairie and Parkland Canada and the northcentral U.S., aerial waterfowl counts are corrected annually for visibility bias by conducting ground counts along a subsample of survey segments. In some northern regions of the traditional survey area, visibility corrections were derived from comparisons between airplane and past helicopter surveys. In the eastern survey area, duck estimates are adjusted using visibility-correction factors derived from a comparison of airplane and helicopter counts. Annual estimates of duck abundance are available since 1955 for the traditional survey area and since 1996 for the eastern survey area (except stratum 69); however, some portions of the eastern survey area have been surveyed since 1990 (strata 51–53, 56, 63–64, 66–68, 70–72). In the traditional survey area, visibility-corrected estimates of pond abundance in Prairie Canada are available since 1961, and in the northcentral U.S. since 1974. Several provinces and states also conduct breeding waterfowl surveys using various methods; some have survey designs that allow for calculation of measures of precision for their estimates. Information about habitat conditions was supplied primarily by biologists working in those survey areas. Unless otherwise noted, z-tests were used for assessing statistical significance, with alpha levels set at 0.1; P-values are given in tables along with wetland and waterfowl estimates.

Since 1990, the U.S. Fish and Wildlife Service (USFWS) has conducted aerial transect surveys using airplanes in portions of the eastern survey area, similar to those in the traditional

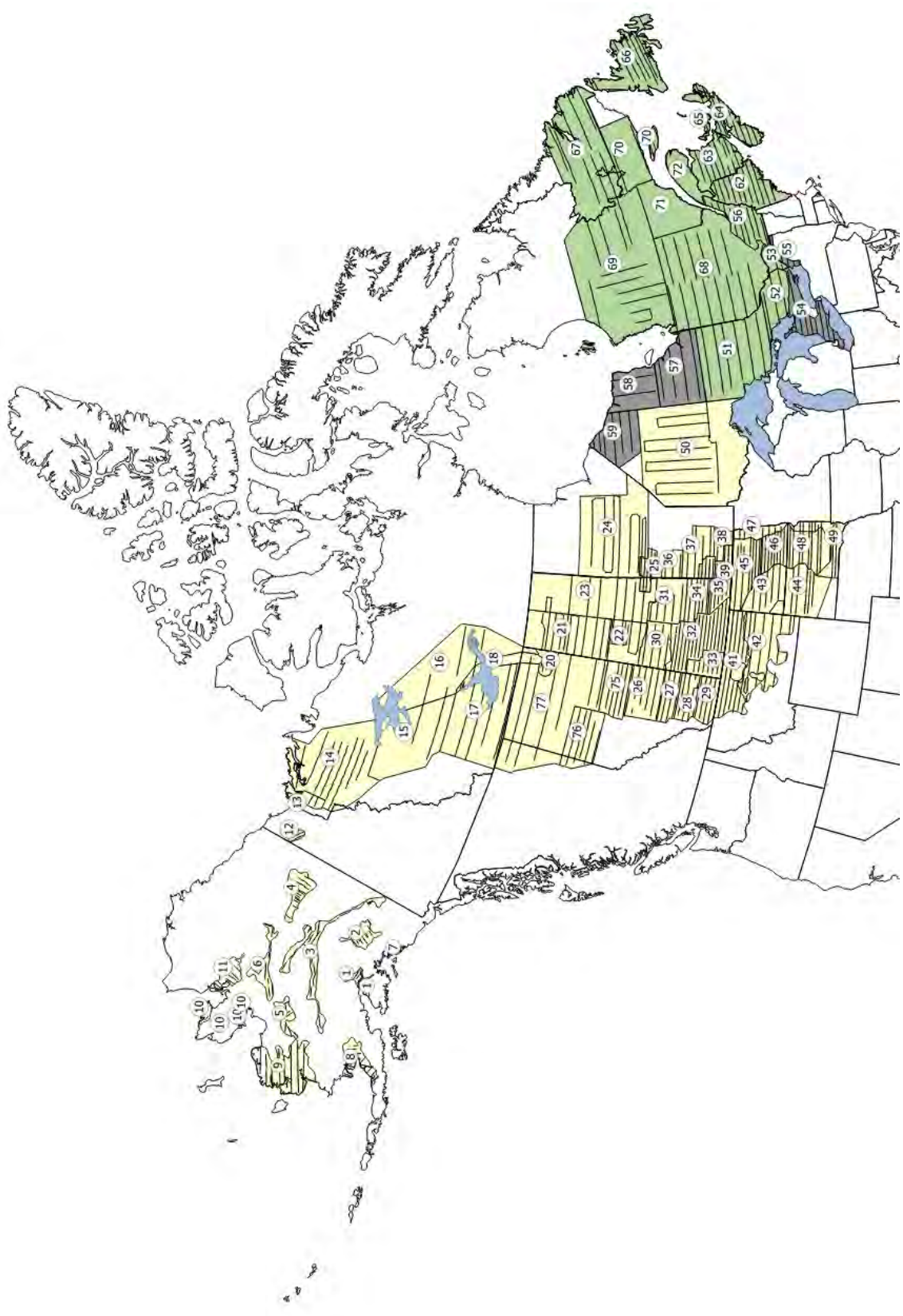

Figure 1. Strata and transects of the Waterfowl Breeding Population and Habitat Survey (yellow = traditional survey area, green = eastern survey area, grey = discontinued strata).

survey area, to estimate waterfowl abundance. Additionally, the Canadian Wildlife Service (CWS) has conducted a helicopter-based aerial plot survey in core American black duck (*Anas rubripes*) breeding regions of Ontario, Quebec, and the Atlantic Provinces. Initially, data from these surveys were analyzed separately despite overlap in geographic areas of inference. In 2004, the USFWS and CWS agreed to integrate the two surveys, produce composite estimates from both sets of survey data, and expand the geographic scope of the survey in eastern North America. Consequently, since 2005, waterfowl abundances for eastern North America have been estimated using a hierarchical-modeling approach that combines USFWS and CWS data (Zimmerman et al. 2012). In cases where the USFWS has traditionally not recorded observations to the species level (e.g., mergansers, goldeneyes), estimates are produced for multi-species groupings. Previously, this report provided composite estimates for the eastern survey area using only data collected in strata 51, 52, 63, 64, 66–68, and 70–72, which corresponds to the area covered by the CWS plot survey. These strata contain either (1) both USFWS airplane survey transects and CWS helicopter plots or (2) only helicopter plots (strata 71 and 72). Since 2018, eastern breeding waterfowl population estimates have been presented at the full eastern survey scale (strata 51–53, 56, 62–72) or eastern North America scale, depending on the breeding distribution of the species. The eastern North America scale includes the full eastern survey area plus data from the Atlantic Flyway Breeding Waterfowl Survey (AFBWS, Sauer et al. 2014). The AFBWS is a ground-based survey conducted annually from Virginia north to New Hampshire. The time series at these larger scales is shorter (1998–present) but provides a more complete assessment of the status of waterfowl in the east.

For widely distributed and abundant species including American black ducks, mallards (*A. platyrhynchos*), green-winged teal (*A. crecca*), ring-necked ducks (*Aythya collaris*), goldeneyes (common [*Bucephala clangula*] and Barrow's [*B. islandica*]) and mergansers (common [*Mergus merganser*], red-breasted [*M. serrator*], and hooded [*Lophodytes cucullatus*]), composite estimates of abundance were constructed using a hierarchical model (Zimmerman et al. 2012), which estimated the mean count per unit area surveyed for each stratum, year, and method (i.e., airplane or helicopter). These mean counts were then extrapolated over the area of each stratum to produce a stratum-year-method- specific population estimate. Estimates from the airplane surveys were adjusted for visibility bias by multiplying them by the total CWS helicopter survey estimates for all years, divided by the total USFWS airplane survey estimates for all years that the two surveys overlapped. For strata containing both CWS and USFWS surveys (51, 52, 63, 64, 66–68, and 70), USFWS estimates were adjusted by visibility-correction factors derived from CWS plot estimates, and the CWS and adjusted USFWS estimates were then averaged to derive stratum-level estimates. For strata containing just USFWS surveys (strata 53, 56, 62, 65, and 69) visibility-correction factors based on the ratio of counts from helicopters to fixed-wing aircraft along selected segments were used to adjust counts (Zimmerman et al. 2012). No visibility adjustments were made for strata with only CWS plots (strata 71 and 72). For two species groups, goldeneyes and mergansers, for which there are many survey units with no observations, a zero-inflated Poisson distribution (Martin et al. 2005) was used to fit the model. Using this technique, the binomial probability of encountering the species on a transect or a plot is modeled separately. Not enough green-winged teal, ring-necked ducks, goldeneyes, and mergansers were counted in the AFBWS to fit the models for those species at the eastern North America scale. Black duck and mallard counts were adequate to fit the model to the AFBWS data and derive breeding population estimates at the eastern North America scale. We present estimates for American black ducks, green-winged teal, ring-necked ducks, goldeneyes, and mergansers at the eastern survey scale, and estimates for mallards at the eastern North America scale.

The zero-inflated Poisson modeling approach was not adequate for the following species that occur at lower densities and are more patchily distributed in the eastern survey area: scaup (lesser [*Aythya affinis*] and greater [*A. marila*]), scoters (black [*Melanitta americana*], white-winged [*M. deglandi*], and surf [*M. perspicillata*]), bufflehead (*Bucephala albeola*), and American wigeon (*Anas americana*). This model-based approach and changes in analytical procedures for some species may preclude comparisons with results from previous reports. We will continue to investigate methods that might allow us to estimate abundance of these rarer species within a hierarchical-modeling framework.

Since the implementation of the Eastern Breeding Waterfowl and Habitat Survey and associated composite estimation procedure (Zimmerman et al. 2012), American black duck total indicated pairs were calculated using the CWS method of scaling. The CWS scaling is based on sex-specific observations collected during previous CWS helicopter surveys in eastern Canada, which indicated that approximately 50% of black duck pair observations are actually two males. Thus, observed black duck pairs were scaled by 1.5 rather than the 1.0 scaling traditionally applied by the USFWS. These indicated pairs were then used to calculate indicated birds based on the USFWS protocol. The Black Duck Joint Venture completed a review of this estimation procedure using updated observation data from Quebec and New Jersey for the period 1990–2009. The results indicated the majority of 2-bird observations consisted of female/male pairings in similar proportions to mallards and green-winged teal. Therefore, starting in 2023 the full time series for black duck total indicated pairs are estimated using the standard USFWS protocols that 2 birds equal 1 breeding pair. Further, total indicated birds are calculated using standard USFWS protocols.

Total Duck Species Composition

In the traditional survey area, our estimate of total ducks excludes scoters, eiders (common [*Somateria mollissima*], king [*S. spectabilis*], spectacled [*S. fisheri*], and Steller's [*Polysticta stelleri*]), long-tailed ducks (*Clangula hyemalis*), mergansers, and wood ducks (*Aix sponsa*) because the traditional survey area does not include a large portion of their breeding ranges (Smith 1995).

Results and Discussion

2025 Overall Habitat Conditions and Population Status

Habitat conditions during the 2025 WBPHS generally continued to decline over a large portion of the surveyed area relative to 2024. The majority of the decline was in the traditional survey area of interior Canadian provinces and portions of the northcentral U.S. With the exception of February 2025, most of the Canadian prairies had a mild winter with above- to well-above-average precipitation, however, because of underlying dry soil conditions, much of the precipitation had percolated below ground by spring. Well-above average temperatures in April and May combined with below-average precipitation only reinforced the dry conditions. Some rainfall did occur on portions of the prairies later in the spring but not in time to benefit most initial nesting waterfowl. There was some improvement in the western boreal forest but most remained dry and had wildfires roaring as soon as spring began. The northcentral U.S. experienced a similar weather pattern as the Canadian prairies without the benefit of above-average winter precipitation. As in 2024, nearly all of eastern Canada and the Great Lakes region had good to excellent habitat conditions. Minnesota was the only area that experienced a substantial decline in habitat quality since last year. The total pond estimate (Prairie Canada and northcentral U.S. combined) was 4.2 ± 0.01 million, which was 19% below the 2024 estimate of 5.2 ± 0.2 million, and 20% below the long-term average (5.2 ± 0.03 million; Table 1, Figure 3). The 2025 estimate of ponds in Prairie Canada was 2.6 ± 0.1 million. This estimate was similar to the 2024 estimate of 2.7 ± 0.1 million and 27% below the long-term average (3.5 ± 0.02 million). The pond estimate

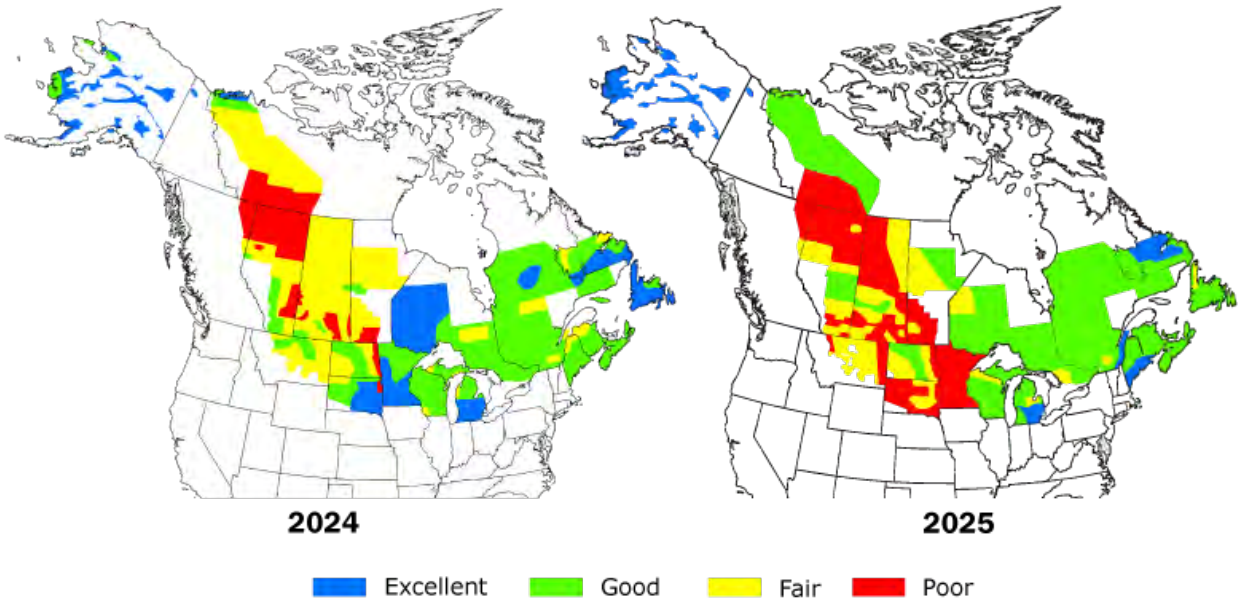

Figure 2. Breeding waterfowl habitat conditions during the 2024 and 2025 Waterfowl Breeding Population and Habitat Surveys, as judged by U.S. Fish and Wildlife Service and Canadian Wildlife Service biologists.

for the northcentral U.S. was 1.6 ± 0.08 million, which was 34% below the 2024 estimate (2.5 ± 0.1 million) and similar to the long-term average of 1.7±0.01 million. In the WBPHS traditional survey area, the total duck population estimate (34.0±0.6 million) remained unchanged from 2024 and was 4% below the long-term average of 35.4 ± 0.09 million.

In the eastern Dakotas, the total duck estimate (4.6 ± 0.2 million) was 21% below the 2024 estimate and 12% below the long-term average of 5.3 ± 0.04 million. Total duck numbers in the Montana–western Dakotas crew area (1.8 ± 0.08 million) were similar to the 2024 estimate and to the long-term average. In the southern Alberta region, the total duck estimate of 3.1 ± 0.1 million was 17% above the 2024 estimate and 27% below the long-term average of 4.3 ± 0.02 million. Total ducks in the southern Saskatchewan region (6.7 ± 0.2 million) were 22% above their 2024 estimate and 15% below the long-term average (7.9 ± 0.04 million). In southern Manitoba, the total duck population estimate of 1.2 ± 0.07 million, was 21% above the 2024 estimate and 23% below the long-term average of 1.5±0.01 million. Total ducks in the northern Saskatchewan–northern Manitoba–western Ontario region (3.0±0.2 million) were similar to the 2024 estimate and 12% below the long-term average (3.4 ± 0.03 million). In the Alaska–Yukon Territory–Old Crow Flats (2.6±0.1 million) and the central and northern Alberta–northeastern British Columbia–Northwest Territories crew areas (11 ± 0.5 million), the total duck estimate was similar to their 2024 estimates and were 30% below and 44% above their respective long-term averages.

Several states and provinces conduct breeding waterfowl surveys in areas outside the geographic extent of the WBPHS (estimates are provided in Appendix B.2). Where possible we report year-over-year changes relative to the last year surveyed. In California, Oregon, Washington, British Columbia, Michigan, and Wisconsin, measures of precision for estimates of total duck numbers are available (Table 2). The total duck estimate in California and Oregon was similar to the 2024 estimate and the long-term average (California: 1992–2024, Oregon: 1994–2024). In Washington, the total duck

estimate was unchanged from the 2024 estimate and 19% below the long-term average (2010–2024). In Michigan, the total duck estimate was 79% below the 2024 estimate and 76% below the long-term average (1991–2024). Wisconsin's 2025 total duck estimate was similar to the 2024 estimate and the long-term average (1973–2024). British Columbia's total duck estimate was similar to the 2024 estimate and 16% above the long-term average (2006–2024). In Minnesota, which does not have a measure of precision for total duck numbers, the 2025 estimate of total ducks was 6% lower than the 2024 estimate and 32% below the long-term average (1968–2024).

Trends and annual breeding population estimates for 10 principal duck species for the traditional survey area are provided in this report (Tables 3–12, Figure 4, Appendix B.3). Percent change was computed prior to rounding of estimates and therefore may not match the rounded values presented in the tables and text. Estimated total mallard abundance was 6.6 ± 0.3 million, which was nearly equal to the 2024 estimate (6.6 ± 0.3 million) and 17% below the long-term average of 7.9 ± 0.04 million (Table 3). In the eastern Dakotas, the mallard estimate was 0.8 ± 0.05 million, which was similar to the 2024 estimate and 25% below the long-term average (1.1 ± 0.01 million). The mallard estimate in southern Alberta (0.7 ± 0.05 million) was similar to the 2024 estimate and 35% below the long-term average of 1.1 ± 0.01 million. In the central and northern Alberta–northeastern British Columbia–Northwest Territories and the northern Saskatchewan–northern Manitoba–western Ontario survey areas, mallard estimates of 1.3 ± 0.2 million and 1.2 ± 0.2 million were similar to their 2024 estimates and their long-term averages. In the southern Manitoba survey area, the estimate of mallards (0.3 ± 0.03 million) was 55% above the 2024 estimate (0.2 ± 0.03 million) and 15% below the long-term average of 0.4 ± 0.01 million. The estimated abundance of mallards in the Montana–western Dakotas survey area (0.5 ± 0.03 million) was similar to the 2024 estimate and the long-term average. Mallard numbers in southern Saskatchewan were similar to the 2024 estimate and 37% below the long-term average (2.1 ± 0.02 million). In the Alaska–Yukon Territory–Old Crow Flats survey area, the mallard estimate of 0.4 ± 0.04 million was similar the 2024 estimate and the long-term average of 0.4 ± 0.01 million.

The estimated abundance of mallards in eastern North America was 1.1 ± 0.2 million, which was similar to the 2024 estimate and 10% below the long-term average (Table 13, Figure 5). Estimates of mallards from the AFBWS have been integrated into the estimate of mallards for eastern North America since 2018 and are no longer reported separately. Mallard abundances with estimates of precision are also available for other areas where surveys are conducted (British Columbia, California, Michigan, Minnesota, Oregon, Washington, and Wisconsin; Table 3). In Wisconsin, Oregon, and British Columbia, mallard estimates were similar to the 2024 estimates and to their long-term averages (Wisconsin: 1973–2024, Oregon: 1994-2024, British Columbia: 2006–2024). The mallard estimate from Washington was similar to the 2024 estimate and 16% below the long-term average (2010–2024). The California mallard estimate was 49% above the 2024 estimate and similar to the long-term average (1992–2024). Minnesota's mallard was similar to the 2024 estimate and 28% below the long-term average (1968–2024). In Michigan, the 2025 mallard estimate was 65% below the 2024 estimate and 72% below the long-term average (1991–2024).

In the traditional survey area, the 2025 estimates of gadwall (2.4 ± 0.1 million) and American wigeon (3.2 ± 0.3 million) were similar to their 2024 estimates and were 17% and 22% above their long-term averages of 2.1 ± 0.02 million (Table 4) and 2.6 ± 0.02 million (Table 5), respectively. Estimates of green-winged teal (2.6 ± 0.2 million) and northern shoveler (2.8 ± 0.2 million) were similar to their 2024 estimates and their long-term averages (Tables 6 and 7). The estimate for blue-winged teal (4.4 ± 0.2 million) was also similar to the 2024 estimate and 13% below the long-term average of 5.1 ± 0.04 million (Table 8). The northern pintail estimate was 2.2 ± 0.2 million, which was similar to the 2024

Table 1. Estimated number (in thousands) of May ponds in portions of Prairie and Parkland Canada and the northcentral U.S.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Prairie & Parkland Canada							
S. Alberta	580	677	−14	0.214	779	−26	<0.001
S. Saskatchewan	1,508	1,454	+4	0.708	2,064	−27	<0.001
S. Manitoba	465	550	−16	0.124	655	−29	<0.001
Subtotal	2,552	2,681	−5	0.453	3,498	−27	<0.001
Northcentral U.S.							
Montana & Western Dakotas	540	655	−18	0.028	591	−9	0.103
Eastern Dakotas	1,088	1,823	−40	<0.001	1,134	−4	0.512
Subtotal	1,628	2,478	−34	<0.001	1,725	−6	0.209
Total	4,180	5,159	−19	<0.001	5,228	−20	<0.001

[a] Long-term average. Prairie and Parkland Canada, 1961–2024; northcentral U.S. and Total 1974–2024.

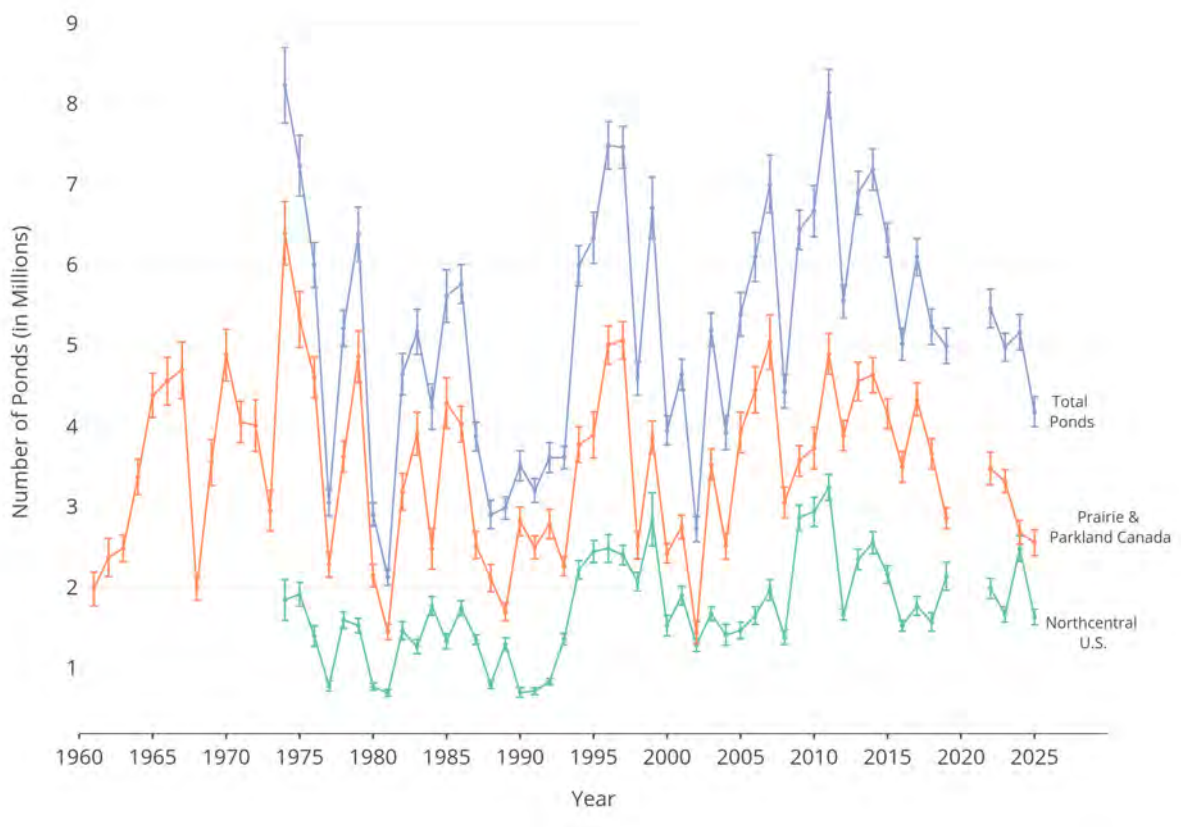

Figure 3. Number of ponds in May and 90% confidence intervals in Prairie and Parkland Canada, the northcentral U.S., and both areas combined (Total ponds).

Table 2. Total duck breeding population estimates (in thousands) for regions in the traditional survey area and other regions.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Traditional Survey Area							
Alaska Yukon Territory–Old Crow Flats	2,560	2,449	+5	0.590	3,639	−30	<0.001
C. & N. Alberta–N.E. British Columbia–NWT	10,975	11,248	−2	0.677	7,609	+44	<0.001
N. Saskatchewan–N. Manitoba–W. Ontario	2,990	3,290	−9	0.279	3,410	−12	0.041
S. Alberta	3,132	2,686	+17	0.025	4,308	−27	<0.001
S. Saskatchewan	6,690	5,476	+22	<0.001	7,886	−15	<0.001
S. Manitoba	1,193	989	+21	0.021	1,540	−23	<0.001
Montana & Western Dakotas	1,798	1,942	−7	0.325	1,764	+2	0.666
Eastern Dakotas	4,642	5,908	−21	<0.001	5,262	−12	<0.001
Total	33,980	33,988	0	0.993	35,418	−4	0.027
Other Regions							
British Columbia	417	437	−5	0.481	359	+16	0.002
California	474	374	+27	0.113	537	−12	0.223
Michigan	142	674	−79	<0.001	601	−76	<0.001
Oregon	267	302	−12	0.418	263	+1	0.823
Washington	156	156	0	0.994	192	−19	0.001
Wisconsin	547	375	+46	0.105	446	+23	0.294

[a] Includes 10 species in Appendix B.3, plus American black ducks, ring-necked ducks, goldeneyes, bufflehead, and ruddy ducks (*Oxyura jamaicensis*); excludes eiders, long-tailed ducks, scoters, mergansers, and wood ducks for regions within the traditional survey area, British Columbia, Michigan, and Wisconsin. California, Washington and Oregon also include wood ducks as part of the total duck estimate.

[b] Long-term average for regions in the traditional survey area, 1955–2024; years for other regions vary (see Appendix B.2)

estimate and 41% below the long-term average of 3.8 ± 0.03 million (Table 9). Estimates of redheads and canvasbacks were 0.9±0.08 million and 0.7 ± 0.06 million, respectively, which were similar to their 2024 estimates (Tables 10 and 11). The redhead estimate was 25% above their long-term average of 0.7 ± 0.01 million, while the canvasback estimate was similar to their long-term average. The combined estimate of lesser and greater scaup (3.7 ± 0.2 million) was similar to the 2024 estimate and 25% lower than the long-term average of 4.9 ± 0.04 million (Table 12).

In the eastern survey area, the estimate of goldeneyes was 0.7 ± 0.2 million, which was 25% below the 2024 estimate and similar to the long-term average (Table 13, Figure 5, Appendix B.5). The green-winged teal estimate was 0.3 ± 0.08 million, which was 24% below the 2024 estimate and similar to the long-term average. The 2025 estimate of mergansers (1.1 ± 0.1 million) was similar to their 2024 estimate and remains 28% above their long-term average. The 2025 estimates of ring-necked ducks (0.8 ± 0.2 million) and American black ducks in the eastern survey area (0.8 ± 0.09 million) were similar to their 2024 estimates and their long-term average. In addition, black duck population estimates for northeastern states from New Hampshire south to Virginia were also available from the Atlantic

Table 3. Mallard breeding population estimates (in thousands) for regions in the traditional survey area and other regions.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Traditional Survey Area							
Alaska Yukon Territory–Old Crow Flats	389	507	−23	0.108	392	−1	0.962
C. & N. Alberta–N.E. British Columbia–NWT	1,332	1,606	−17	0.217	1,164	+14	0.269
N. Saskatchewan–N. Manitoba–W. Ontario	1,152	1,159	−1	0.973	1,145	+1	0.968
S. Alberta	696	630	+11	0.434	1,078	−35	<0.001
S. Saskatchewan	1,314	1,163	+13	0.180	2,073	−37	<0.001
S. Manitoba	336	216	+55	0.001	394	−15	0.031
Montana & Western Dakotas	502	517	−3	0.787	536	−6	0.307
Eastern Dakotas	833	811	+3	0.780	1,107	−25	<0.001
Total	6,554	6,609	−1	0.879	7,888	−17	<0.001
Other Regions							
British Columbia	81	97	−16	0.107	80	+1	0.864
California	266	178	+49	0.052	320	−17	0.184
Michigan	88	251	−65	<0.001	319	−72	<0.001
Minnesota	164	141	+16	0.591	229	−28	0.044
Oregon	80	71	+12	0.384	88	−10	0.221
Washington	77	86	−11	0.421	92	−16	0.039
Wisconsin	149	118	+27	0.265	181	−17	0.207

[a] Long-term average, 1955–2024; years for other regions vary (see Appendix B.2)

Flyway Breeding Waterfowl Survey. For the northeastern states, the estimate of black ducks was 64,700, which was 139% above the 2024 estimate and similar to the long-term (1993–2024). These northeastern state estimates for American black ducks are not explicitly integrated with the eastern survey area as is done for mallards.

Trends in wood duck populations are available from the North American Breeding Bird Survey (BBS). The BBS, a series of roadside routes surveyed during May and June each year, provides the only long-term range-wide breeding population index for this species. Wood ducks are encountered with low frequency along BBS routes, which limits the amount and quality of available information (Sauer and Droege 1990). However, hierarchical analysis of these data (J. Hostetler, U.S. Geological Survey Biological Resources Division, unpublished data) incorporated adjustments for spatial and temporal variation in BBS route quality, observer skill, and other factors that may affect detectability (Link and Sauer 2002). This analysis also produces annual abundance indices and measures of variance, in addition to the trend estimates (average % change per year) and associated 95% credible intervals (lower, upper credible interval in parentheses following trend estimates) presented in this report. In the Atlantic and Mississippi flyways combined, the BBS wood duck index increased by an average of 0.74% per year (0.36%, 1.09%) over the entire survey period (1966–2024), while the 10-year (2015–2024) and 20-year trend indices (2005–2024) declined by an average of −0.52% (−1.79%, 0.74%) and −0.19% (−0.86%, 0.51%), respectively. The At-

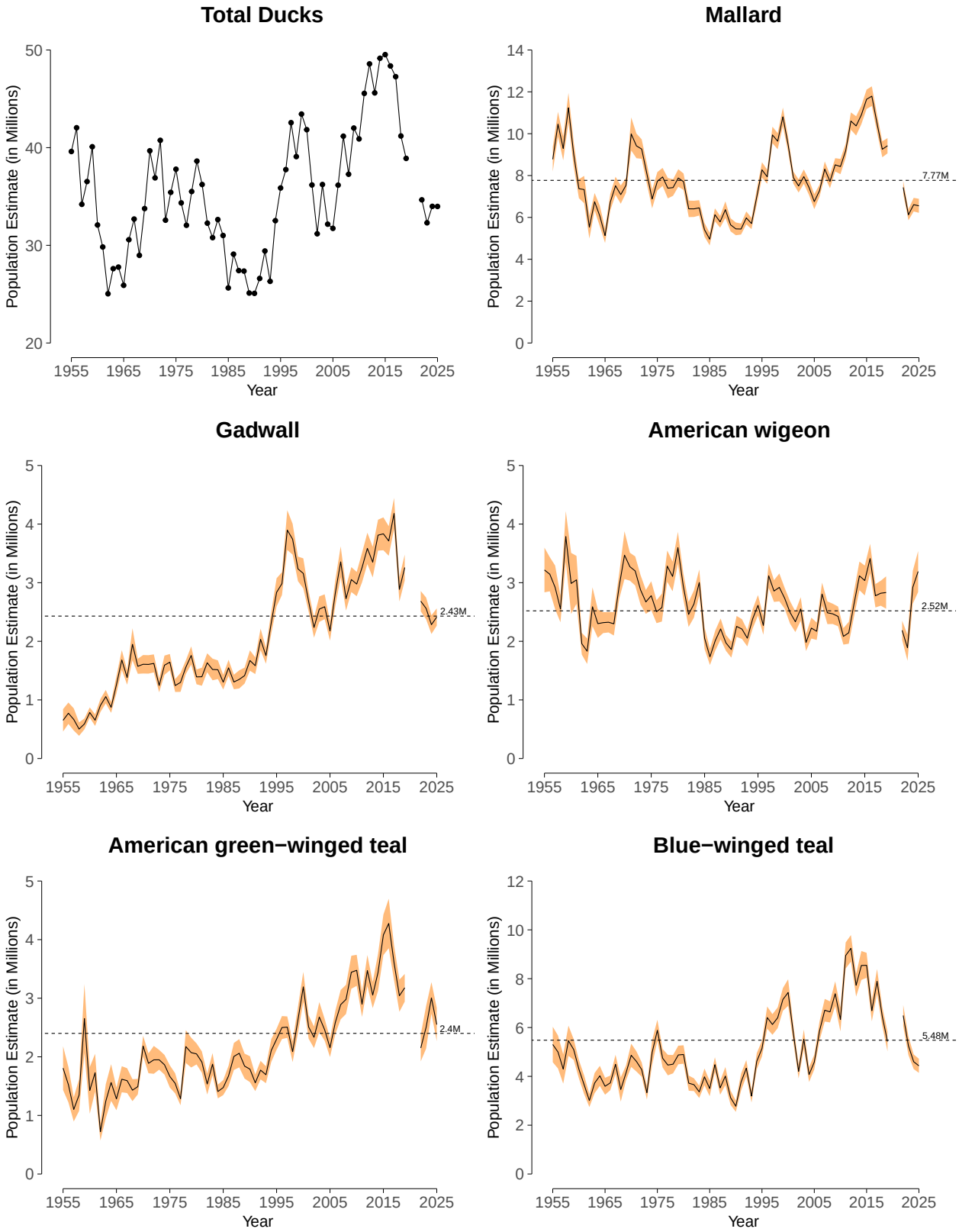

Figure 4. Breeding population estimates, 90% confidence intervals, and North American Waterfowl Management Plan population objectives (dashed line; North American Waterfowl Management Plan Committee 2024) for selected species in the traditional survey area (strata 1–18, 20–50, 75–77).

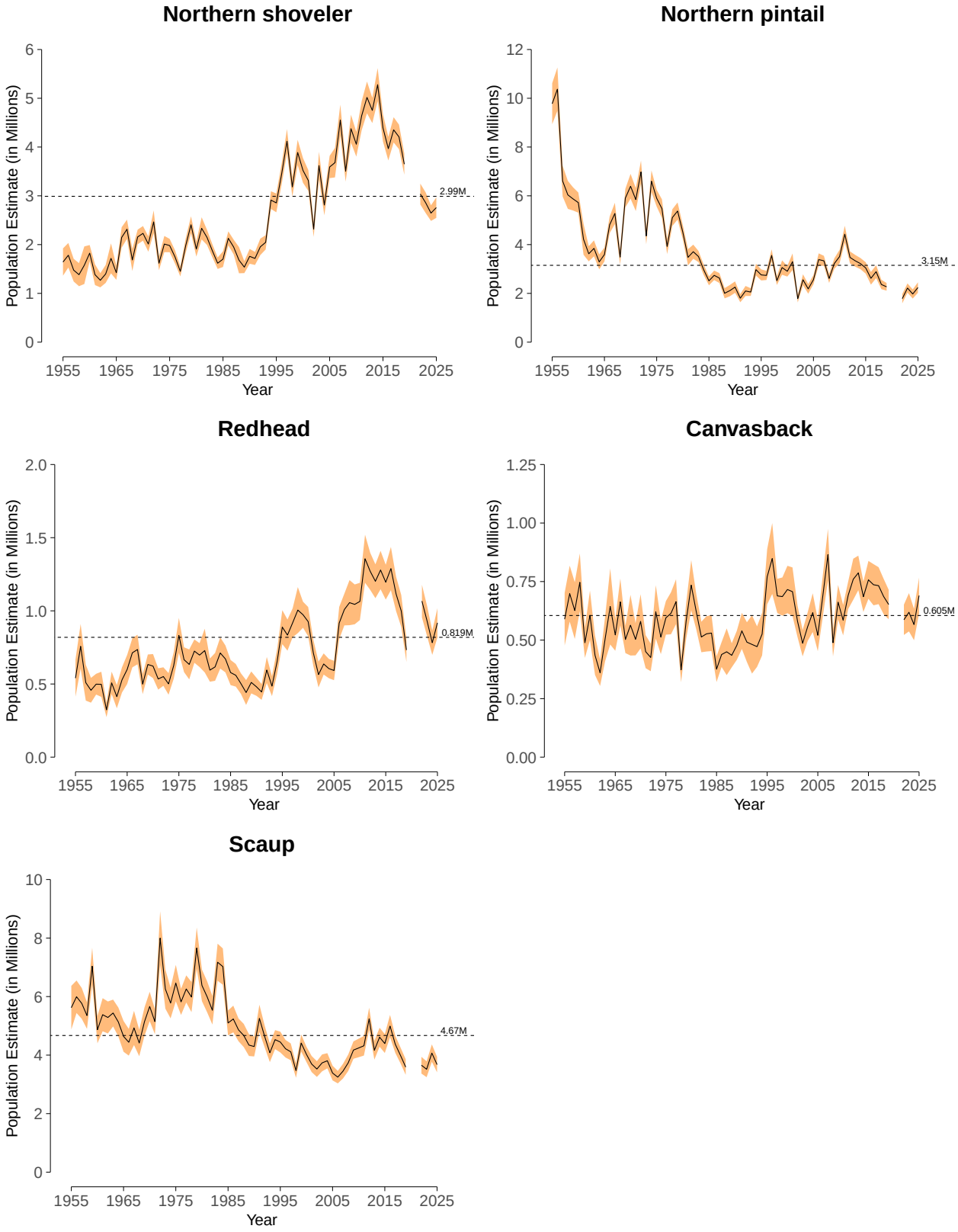

Figure 4. Continued.

Table 4. Gadwall breeding population estimates (in thousands) for regions in the traditional survey area.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Alaska Yukon Territory–Old Crow Flats	0	1	–50	0.534	2	–82	<0.001
C. & N. Alberta–N.E. British Columbia–NWT	155	124	+25	0.502	54	+189	0.016
N. Saskatchewan–N. Manitoba–W. Ontario	8	5	+59	0.467	24	–69	<0.001
S. Alberta	428	389	+10	0.601	348	+23	0.089
S. Saskatchewan	871	649	+34	0.015	706	+23	0.032
S. Manitoba	74	77	–3	0.897	82	–9	0.671
Montana & Western Dakotas	228	213	+7	0.760	229	0	0.971
Eastern Dakotas	649	826	–21	0.076	624	+4	0.623
Total	2,414	2,284	+6	0.445	2,068	+17	0.003

[a] Long-term average, 1955–2024

Table 5. American wigeon breeding population estimates (in thousands) for regions in the traditional survey area.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Alaska Yukon Territory–Old Crow Flats	295	212	+39	0.068	549	–46	<0.001
C. & N. Alberta–N.E. British Columbia–NWT	2,108	1,928	+9	0.592	962	+119	<0.001
N. Saskatchewan–N. Manitoba–W. Ontario	233	174	+34	0.239	223	+4	0.823
S. Alberta	155	72	+115	0.008	270	–42	<0.001
S. Saskatchewan	168	191	–12	0.490	382	–56	<0.001
S. Manitoba	3	4	–25	0.561	49	–94	<0.001
Montana & Western Dakotas	104	114	–9	0.739	112	–8	0.584
Eastern Dakotas	125	226	–45	0.029	66	+90	0.028
Total	3,191	2,922	+9	0.442	2,613	+22	0.035

[a] Long-term average, 1955–2024

Table 6. Green-winged teal breeding population estimates (in thousands) for regions in the traditional survey area.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Alaska Yukon Territory–Old Crow Flats	196	220	−11	0.608	410	−52	<0.001
C. & N. Alberta–N.E. British Columbia–NWT	1,419	1,829	−22	0.150	937	+51	0.021
N. Saskatchewan–N. Manitoba–W. Ontario	160	217	−26	0.205	202	−21	0.167
S. Alberta	166	86	+92	0.002	205	−19	0.076
S. Saskatchewan	354	280	+26	0.256	277	+28	0.148
S. Manitoba	34	42	−19	0.556	56	−40	0.013
Montana & Western Dakotas	99	63	+57	0.294	42	+137	0.043
Eastern Dakotas	122	268	−54	0.001	67	+83	0.015
Total	2,550	3,005	−15	0.137	2,196	+16	0.113

[a] Long-term average, 1955–2024

Table 7. Northern shoveler breeding population estimates (in thousands) for regions in the traditional survey area.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Alaska Yukon Territory–Old Crow Flats	179	205	−13	0.519	297	−40	<0.001
C. & N. Alberta–N.E. British Columbia–NWT	305	430	−29	0.162	254	+20	0.503
N. Saskatchewan–N. Manitoba–W. Ontario	17	18	−4	0.935	37	−54	<0.001
S. Alberta	397	306	+29	0.116	443	−10	0.301
S. Saskatchewan	1,016	828	+23	0.187	805	+26	0.070
S. Manitoba	68	62	+10	0.691	112	−39	<0.001
Montana & Western Dakotas	210	228	−8	0.702	181	+16	0.272
Eastern Dakotas	566	569	−1	0.971	517	+9	0.452
Total	2,758	2,646	+4	0.586	2,647	+4	0.502

[a] Long-term average, 1955–2024

Table 8. Blue-winged teal breeding population estimates (in thousands) for regions in the traditional survey area.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Alaska Yukon Territory–Old Crow Flats	0	0	0	1.000	1	−100	<0.001
C. & N. Alberta–N.E. British Columbia–NWT	552	677	−18	0.452	308	+79	0.059
N. Saskatchewan–N. Manitoba–W. Ontario	45	72	−37	0.252	216	−79	<0.001
S. Alberta	573	588	−3	0.903	645	−11	0.288
S. Saskatchewan	1,109	930	+19	0.184	1,438	−23	0.002
S. Manitoba	280	197	+42	0.085	366	−24	0.050
Montana & Western Dakotas	478	442	+8	0.644	319	+50	<0.001
Eastern Dakotas	1,394	1,693	−18	0.115	1,828	−24	<0.001
Total	4,432	4,599	−4	0.606	5,122	−13	0.003

[a] Long-term average, 1955–2024

Table 9. Northern pintail breeding population estimates (in thousands) for regions in the traditional survey area.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Alaska Yukon Territory–Old Crow Flats	712	548	+30	0.230	895	−20	0.082
C. & N. Alberta–N.E. British Columbia–NWT	736	540	+36	0.197	378	+95	0.003
N. Saskatchewan–N. Manitoba–W. Ontario	10	7	+33	0.563	34	−71	<0.001
S. Alberta	125	43	+192	<0.001	613	−80	<0.001
S. Saskatchewan	302	214	+41	0.068	1,047	−71	<0.001
S. Manitoba	17	7	+151	0.034	91	−82	<0.001
Montana & Western Dakotas	100	142	−29	0.117	250	−60	<0.001
Eastern Dakotas	237	475	−50	<0.001	507	−53	<0.001
Total	2,239	1,975	+13	0.236	3,814	−41	<0.001

[a] Long-term average, 1955–2024

Table 10. Redhead breeding population estimates (in thousands) for regions in the traditional survey area.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Alaska Yukon Territory–Old Crow Flats	6	1	+604	0.206	1	+305	0.258
C. & N. Alberta–N.E. British Columbia–NWT	164	61	+170	0.008	42	+288	<0.001
N. Saskatchewan–N. Manitoba–W. Ontario	4	4	+11[b]	0.905	24	−82	<0.001
S. Alberta	84	71	+19	0.574	133	−36	0.011
S. Saskatchewan	306	261	+17	0.519	241	+27	0.226
S. Manitoba	101	60	+70	0.178	77	+31	0.373
Montana & Western Dakotas	16	31	−48	0.198	12	+32	0.472
Eastern Dakotas	236	294	−20	0.197	207	+14	0.363
Total	918	782	+17	0.179	737	+25	0.021

[a] Long-term average, 1955–2024
[b] Rounded values mask actual change in estimates

Table 11. Canvasback breeding population estimates (in thousands) for regions in the traditional survey area.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Alaska Yukon Territory–Old Crow Flats	53	68	−22	0.682	83	−36	0.315
C. & N. Alberta–N.E. British Columbia–NWT	108	56	+93	0.157	78	+37	0.256
N. Saskatchewan–N. Manitoba–W. Ontario	52	29	+80	0.275	49	+7	0.852
S. Alberta	49	45	+9	0.792	67	−27	0.044
S. Saskatchewan	246	197	+25	0.239	202	+22	0.159
S. Manitoba	58	85	−32	0.172	58	0	0.991
Montana & Western Dakotas	13	14	−12	0.743	10	+21	0.464
Eastern Dakotas	112	72	+56	0.155	44	+154	0.003
Total	690	566	+22	0.119	591	+17	0.103

[a] Long-term average, 1955–2024

Table 12. Scaup (greater and lesser combined) breeding population estimates (in thousands) for regions in the traditional survey area.

			Change from 2024			Change from LTA	
Region	2025	2024	%	*P*	LTA[a]	%	*P*
Alaska Yukon Territory–Old Crow Flats	575	553	+4	0.822	872	−34	<0.001
C. & N. Alberta–N.E. British Columbia–NWT	1,983	2,191	−10	0.438	2,477	−20	0.007
N. Saskatchewan–N. Manitoba–W. Ontario	444	361	+23	0.162	526	−16	0.035
S. Alberta	250	251	−1	0.980	326	−23	0.043
S. Saskatchewan	225	274	−18	0.412	410	−45	<0.001
S. Manitoba	68	56	+22	0.606	121	−44	0.009
Montana & Western Dakotas	17	60	−71	0.050	47	−63	<0.001
Eastern Dakotas	114	324	−65	<0.001	136	−17	0.326
Total	3,675	4,069	−10	0.204	4,914	−25	<0.001

[a] Long-term average, 1955–2024

lantic Flyway wood duck index increased 0.25% (−0.34%, 0.79%) annually over the entire time series (1966–2024). The 10-year (2015–2024) and 20-year (2005–2024) trends also showed annual increases of (0.09%; −1.73%, 2.02%) and 0.07% (−0.92%, 1.12%), respectively. In the Mississippi Flyway, the corresponding BBS wood duck indices increased by 0.74% (0.36%, 1.09%, 1966–2024), decreased by −0.19% (−0.86%, 0.51%) from 2005 to 2024, and decreased by −0.52% (−1.79%, 0.74%) from 2015 to 2024 (J. Hostetler, U.S. Geological Survey Biological Resources Division, unpublished data). A model-based estimate of wood duck populations using data from the Atlantic Flyway incorporates the Atlantic Flyway Breeding Waterfowl Survey data for the northeast states from New Hampshire south to Virginia with the Breeding Bird Survey. The 2025 estimate of wood ducks in the Atlantic Flyway was 0.9 ± 0.1 million, which was similar to the long-term average.

Regional Habitat Conditions

A description of habitat conditions and duck populations for each of the major breeding areas follows. In the past this information was taken from more detailed reports of specific regions. Although these reports are no longer produced, habitat and population status for each region will continue to be summarized in this report. More detailed information on regional waterfowl and habitat conditions during the May waterfowl survey is also available on the USFWS website (`https://www.fws.gov/library/collections/waterfowl-breeding-population-and-habitat-survey-field-reports`).

Southern Alberta (strata 26–29, 75–76)
reported by biologist-pilot Rob Spangler

Precipitation returned to portions of southern Alberta, improving habitat conditions in some locations, but elsewhere declines continued. Habitat conditions near Lethbridge were poorer compared to 2024. Fall and winter precipitation was well-below average (40–60%) and below average (60–85%) during spring 2025. Habitat quantity and quality declined near Calgary, and conditions were reduced from good to fair compared to last year. However, habitat quality improved from poor to fair east of Calgary due to increased precipitation (85–115%). Moving north towards Edmonton and Lloydminster, wetland conditions continued to improve due to an upturn in spring precipitation (85–150%).

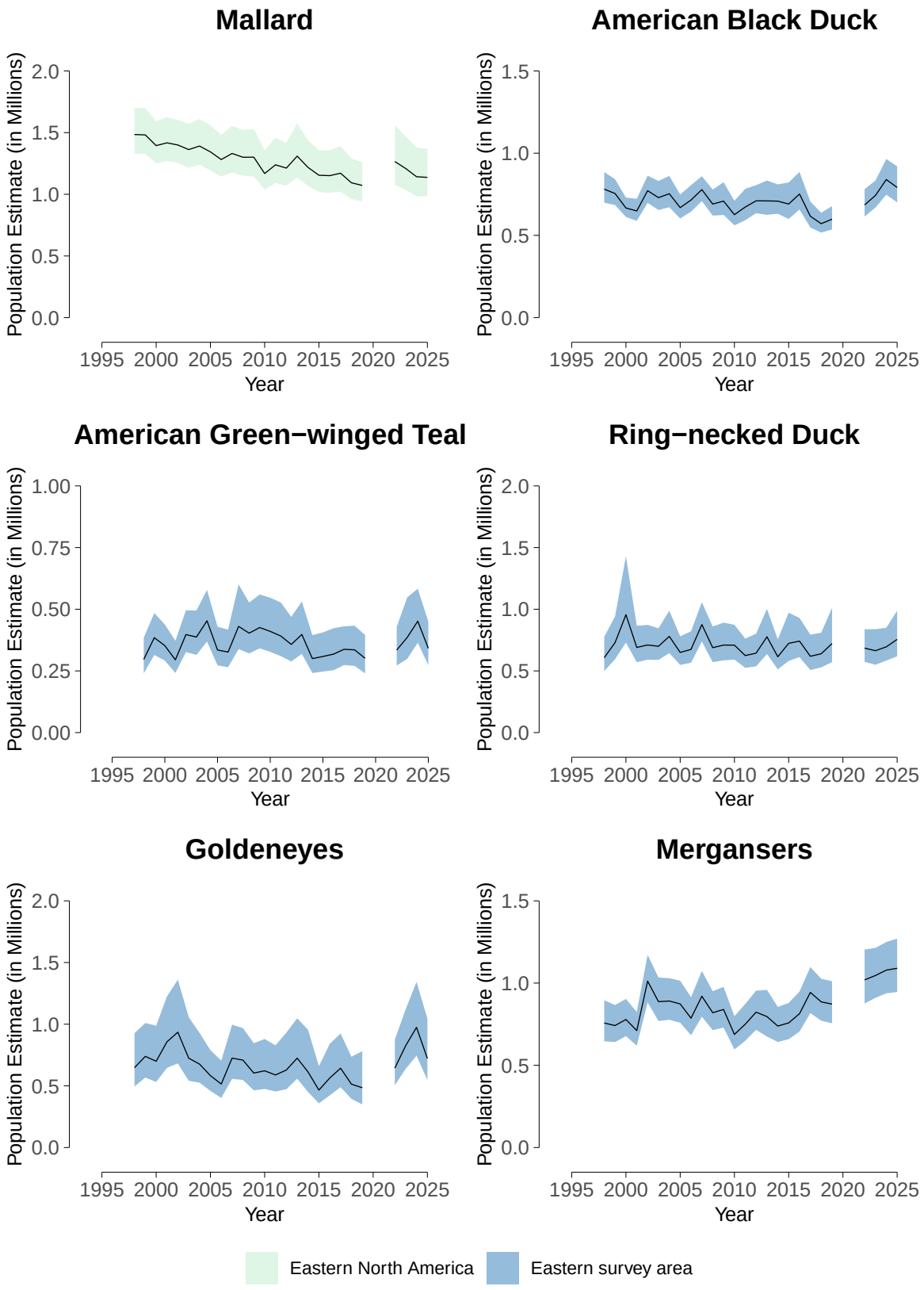

Figure 5. Breeding population estimates and 90% credible intervals from Bayesian hierarchical models for species in the eastern survey area. Time series are presented for two spatial scales: eastern survey area (Blue; strata 51–53, 56, 62–72 for black ducks, green-winged teal, ring-necked ducks, goldeneyes, and mergansers) and eastern North America (Light green; eastern survey area plus the northeastern states from Virginia north to New Hampshire for mallards).

Table 13. Duck breeding population estimates (in thousands) for the six most abundant species in the eastern survey area. Estimates for black ducks, green-winged teal, ring-necked ducks, goldeneyes, and mergansers are at the eastern survey scale (strata 51–53, 56, 62–72) and mallards at the eastern North America scale (eastern survey area plus Virginia north to New Hampshire).

	2025	2024	% Change from 2024	Average[a]	% Change from average
Mallard	1,137	1,142	0	1,276	–10[b]
American Black Duck	791	840	–6	704	+11
American Green-winged Teal	342	452	–24[b]	365	–7
Ring-necked Duck	756	695	+9	705	+6
Goldeneyes (common and Barrow's)	722	974	–25[b]	668	+7
Mergansers (common, red-breasted, and hooded)	1,090	1,079	+1	849	+28[b]

[a] Average for 1998–2024.
[b] Indicates significant change. Significance ($P \leq 0.10$) determined by non-overlap of Bayesian credibility intervals.

The moisture fell early enough when migrating waterfowl arrived, and habitat was rated as good. Precipitation was average (85–115%) in the Grand Prairie region where, similar to 2024, fair habitat conditions were observed. Overall, mostly fair and good habitat conditions were observed in southern Alberta, with poor habitat found near Lethbridge and Medicine Hat.

Southern Saskatchewan (strata 30–33)
reported by biologist-pilot Phil Thorpe

Southern Saskatchewan once again had a mix of wetland conditions in 2025 but overall habitat has continued a multi-year decline. Fall and winter precipitation across the crew area was average to above average (85–115%). That weather pattern came to an end in March 2025, and the remainder of spring had below-average precipitation (40–60%) in the grasslands and well-below average (<40%) across the Parklands. Late summer and fall 2024 temperatures were normal to 2–4°C above normal. Early winter temperatures were above average (2 to 4°C), but February 2025 was well-below average (greater than -5°C). March and April temperatures were average, and May was warmer (2 to 3°C). Long-standing high-temperature records in early May were broken with high temperatures reaching 29 to 31°C. Poor recruitment was expected over most of the grasslands from the U.S. border northwest towards Kindersley. The southwest and north and central grasslands may see fair recruitment. Southeast of Saskatoon, good recruitment was expected in the small area of mixed grassland/Parkland habitat of the Allan Hills. The Parklands were similar to 2024 and fair production was predicted, however, poor recruitment was likely to occur in an exceptionally dry area of the northeast Parklands.

Southern Manitoba (strata 34–40; includes southeast Saskatchewan)
reported by biologist-pilot Sarah Yates

Southern Manitoba and southeastern Saskatchewan have once again experienced dry conditions and habitats appeared to have continued a multi-year deterioration. Summer and fall 2024 had average temperatures (-2 to 2°C), with the exception of a very warm September 2024 (4 to 6°C), and average precipitation that trended drier towards winter. Well below-average temperatures (-6 to -4°C) were recorded in February 2025 during an otherwise average winter that had below-average precipitation (40–85%). Spring started warm and windy and areas in southeastern Saskatchewan and far southwestern Manitoba recorded above-average precipitation (115–200%), but it was quickly absorbed with minimal runoff. Well-below average spring precipitation (<40%) occurred

elsewhere. I have flown this crew area since 2013, and this is the driest I have seen it. Nearly the entire area was rated as poor with only pockets of fair conditions. Stratum 38 remained poor as expected due to a general lack of habitat. The majority of seasonal wetlands, streams and ditches in stratum 39 were dry and larger wetlands that had water were low, with large groups of birds crowded into any decent habitats. Deeper, semi-permanent wetlands in stratum 40 consistently provided good habitat but these were lower in 2025 and rated as fair. Stratum 35 in southeastern Saskatchewan had slightly better conditions but many seasonal wetlands remained dry and bird were grouped on higher-quality habitats. Areas around Yorkton in stratum 34 were fair but were poor closer to Regina. The Parkland and boreal forest farther to the north in Manitoba (strata 36 and 37) were exceptionally dry, and even the large lakes, including Lake Manitoba and Winnipegosis, were the lowest I have observed them in over a decade. All smaller streams, ditches, and seasonal wetlands were dry and the only water on the landscape was provided by beaver ponds and artificial dugouts. Forest fires became prevalent in all northern strata.

Montana and western Dakotas (strata 41–44)
reported by biologist-pilots Terry Liddick, Rob Spangler, and Phil Thorpe

Habitat conditions in north-central and northeastern Montana (stratum 41) declined from good and excellent in spring 2024 to a mix of fair and poor this year. Fall 2024 lacked any substantial precipitation, resulting in abnormally dry conditions in the western and central areas and extreme drought in the far northeastern portion of the state. Early winter precipitation helped somewhat but most of the area remained in moderate drought. Conditions worsened in spring and much of the area was in a moderate to severe drought. While many of the seasonal wetlands were dry when waterfowl arrived, permanent wetlands and reservoirs still held water at 50–75% capacity, particularly in the center of the stratum, where production is expected to be fair. However, areas in the western and eastern portions of the stratum were generally drier and rated as poor.

Eastern and southeastern Montana (stratum 42) experienced a dry, warm winter and spring in 2024–25. Precipitation levels were well-below average and a below-average snowpack contributed to ongoing moderate to severe drought conditions, especially in the eastern quarter of the stratum. Above-normal temperatures during this period exacerbated the situation by increasing evapotranspiration and causing early snowmelt, further reducing soil moisture levels. Given the dry conditions and lack of available natural wetlands, waterfowl production was rated as poor in the eastern parts of the stratum. Fair production was expected elsewhere due to a few more natural wetlands and consistently full stock ponds.

Strata 43 and 44 in western North and South Dakota were abnormally dry. Conditions improved substantially with 13–20 cm of rain in mid-May but was too late to provide much benefit for nesting waterfowl. Western South Dakota (stratum 44) was rated as poor while fair production was expected in western North Dakota (stratum 43).

Eastern Dakotas (strata 45–49)
reported by biologist-pilot Terry Liddick

Habitat conditions in the eastern Dakotas crew area declined in 2025 and again demonstrated a south-to-north gradient in quality. Much of South Dakota has been in some level of drought since April 2024 following below-average precipitation. There was little snow during winter 2024–25 and below-average precipitation continued in April and May. Above-average winter and spring temperatures only exacerbated dry conditions. Dust devils were observed many days during the survey. Nearly all wetlands were low (<50%) or dry and most seasonal wetlands had been plowed during the last several years of drought. The best area of the state for nesting waterfowl was south of Interstate 90 and west of Platte. Observed conditions in North Dakota were better than South Dakota but were substantially drier than 2024. Most of the state had below-average

precipitation. An abundance of rain fell in May across central and northwest North Dakota, improving habitats, but too late to benefit most nesting waterfowl. The Missouri Coteau and northwest of Devil's Lake was a bright spot but even here lacked full wetlands. North and northeast of Devil's Lake was mainly dry due to large-scale tiling and wetland drainage. Wetlands were greater than 50% full in the coteau region of North Dakota but the drift plain region was significantly drier than 2024.

In strata 48 and 49 in South Dakota, conditions were fair west of the James River and poor to the east. Most wetlands were less than 50% full in stratum 48 and all streams and rivers were flowing but with the least flow in years. Production was expected to be poor to fair in South Dakota.

Habitat conditions declined from 2024 in strata 45 and 46 in North Dakota. Some abundant rain in mid- to late-May improved wetlands, particularly near Minot, but was too late for nesting waterfowl, especially early migrants. The drift plain region had been good in 2023 and 2024 but were as poor as 2021 and 2022 conditions this year. Permanent and semi-permanent wetlands were only 30–60% full. Stratum 47 remained poor as expected.

Overall, most of the eastern Dakotas crew area was rated poor to fair. The coteau regions of both states were rated as good and should produce average numbers of waterfowl. South Dakota was fair south of Interstate 90, fair from Interstate 90 north Aberdeen, and good from Aberdeen to the North Dakota border. North Dakota habitat conditions remained similar to 2024 as a result of late-spring precipitation but waterfowl production was expected to lower than last year due to precipitation timing.

Northern Saskatchewan, northern Manitoba, and western Ontario (strata 21–25, 50)
reported by biologist-pilots Walt Rhodes and John Rayfield

Northern Saskatchewan and northern Manitoba (strata 21–25) generally experienced average to above-average temperatures and average to below-average precipitation amounts since September 2024. Temperatures routinely ran 0 to greater than 5°C above average through January 2025. February and March 2025 were extremely cold (-2 to greater than -5°C below average), April was average, and temperatures rebounded to above average (0 to greater than 5°C) in May and June 2025. Precipitation tended to be below average (40–60%) along the western side of the crew area and trended wetter moving eastward, often being average to slightly above average (85–150%) in northern Manitoba. Despite the crew area as a whole having average winter precipitation (1 November 2024–31 March 2025), growing season precipitation (1 April–16 June 2025) was below average (60–85%) and any available moisture went right into the ground due to ongoing drought conditions. Wildfires were again common. Multiple communities were evacuated for fires near Candle Lake and La Ronge, Saskatchewan, and Flin Flon and Pukatawagon, Manitoba. Smaller fires east of The Pas out towards Norway House and Cross Lake, MB, only made things worse by contributing to reduced visibilities. Ice-out was normal and no staging snow geese were observed in the Parklands and no staging tundra swans remained on the Saskatchewan River Delta along the Saskatchewan—Manitoba border. Several flocks of molt-migrant Canada geese were observed in early June heading north across Manitoba and nesting trumpeter swan pairs continued to be commonplace across the crew area. Parkland and Boreal wetlands remained low and seasonal wetlands and sheet water were absent in the usual areas of the Saskatchewan Parklands. Habitat conditions improved once into Manitoba but the only good waterfowl production was expected in the eastern side of stratum 24.

Western Ontario (stratum 50) was characterized by winter and early spring temperatures average to slightly-below average (0 to -2°C) and precipitation well-above average (115–200%), except in the northwest where precipitation was below average (40–60%). Spring phenology was later across the survey area, with the majority of lakes remaining frozen much longer. Fair production was expected in the northwest where

it was drier but good-to-excellent waterfowl production was predicted elsewhere.

Central and northern Alberta, northeastern British Columbia, and Northwest Territories (strata 13–18, 20, 77)
reported by biologist-pilot Garrett Wilkerson

Persistent drought continued throughout most of the surveyed area of northern Alberta, northeastern British Columbia and the southern portion of the Northwest Territories (NT). Most of the region experienced below normal fall, winter, and early spring precipitation, and several major lakes and rivers reached their lowest levels and flow rates on record. Winter and spring temperatures varied, with average to below-average temperatures in much of NT, while portions of northern Alberta were above average (2 to 5°C). Most of habitat in the crew area south of Yellowknife was rated as poor. Semi-permanent wetlands remained largely dry and severely low water levels continued in permanent wetlands. Many fen complexes were completely dry as well. Although drier than normal with greatly reduced wetland areas, the Peace-Athabasca River Delta was rated as fair. Habitats north and east of Great Slave Lake had a cooler, wetter winter and early spring. Ice-out was slightly delayed (2–3 days) but runoff was high, resulting in inundated basins. Good waterfowl production was expected in these basins. North and west of Yellowknife to Colville Lake, NT, conditions were slightly better due to receiving late-winter and early-spring snowfall. April 2025 temperatures averaged 2°C below normal and ice-out was delayed (5–7 days). Snowmelt and spring rains were pooling in depressional wetlands and larger basins, that had adequate grass margins, although slightly lower than 2024. Habitat conditions were rated fair to good. Slow ice breakup and early-spring snowfall and rains resulted in good wetlands conditions in the Mackenzie River Delta and east to Paulatuk, NT. Ice-out was slightly late (4–5 days), and staging scoters, white-fronted geese, and light geese were observed on the southern Arctic tundra. This area continued to receive scattered showers through mid-June, and waterfowl production was rated as good.

Alaska, Yukon Territory, and Old Crow Flats (strata 1–12)
reported by biologist-pilots Heather Wilson and Tamara Zeller

Alaska and Old Crow Flats experienced warmer-than-average fall and winter conditions in 2024/25, resulting in an early spring thaw in most areas. Much of interior and western Alaska had below-average snowfall, which reduced snowpack and lead to early wetland drying. This may impact nesting habitat. Southeastern regions received more rain due to warm temperatures and coastal areas of the state experienced many rain-on-snow events. Spring break-up was generally early for all survey areas. River and lake ice break-up occurred 7–10 days early. Outliers were the Yukon Flats of Alaska and Old Crow Flats in the Yukon Territory area where many lakes were either totally covered with ice or partially covered, which has not been observed in either area during the last five surveys. Although early thawing in most areas opened nesting sites sooner, limited snow and precipitation may affect brood survival, especially in interior and western areas of Alaska and Old Crow Flats. Despite this, waterfowl production potential was generally good especially in areas such as the Copper River Delta and Kenai–Susitna, where late spring rains helped maintain average wetland levels.

Eastern survey area (strata 51–72)
reported by biologist-pilots Mark Koneff, John Rayfield, and Steve Earsom

Central and southern Ontario and Quebec (strata 51–53, 56 and 68) had a mild winter with generally above-average precipitation. A large portion of the St. Lawrence River valley from Toronto to just south of Quebec City, however, had below-average precipitation (60–85%). Higher elevations farther west and north of Quebec City and north and west of Ottawa were average (85–115%). There were localized areas within the crew area with well-above average winter precipitation (115–150%), mainly farther north in Quebec and west in Ontario near

Lake Superior and Georgian Bay. Much of the crew area experienced average to above-average April 2025 precipitation (85–115%), with most of the north being well-above average (150–200%). May was near normal in southern areas but drier (40–85%) north of Georgian Bay and east of Lake Superior. Winter and early spring temperatures were above average (2 to 5°C), except for February and April that were slightly below average. Ice-out was near normal and most streams, beaver ponds, string bogs, and lakes were full or nearly so. Waterfowl production was rated as good with small areas of fair or excellent.

Spring seemed only slightly delayed in northern Quebec (stratum 69) following a winter of average temperatures (-2 to 2°C). April and May 2025 temperatures were slightly-above average (0 to 2°C). Winter precipitation was well-above average (85–150%) across the stratum and continued into the spring in the southern portion but was below average (60–85%) farther north. Habitat conditions were similar to 2024, and waterfowl production was expected to be good.

Ice-out and spring phenology were normal to somewhat early in southern and coastal Maine, but ice lingered in northern and western Maine. Southern and coastal Maine habitat conditions were rated as excellent. Still recovering from persistent abnormally dry conditions, northern Maine and much of New Brunswick and Nova Scotia were rated as good. An early spring and good wetland water levels led to excellent conditions on Prince Edward Island. Newfoundland also had an early spring and ice-out and received substantial April precipitation. Wetlands and lake were in good condition, but streams and rivers still seemed to be running low. Most of the island was rated as good except for a narrow strip in the north. Spring was normal to slightly advanced in Labrador and most wetlands were ice-free during the survey. Central and eastern Labrador habitat conditions were excellent while some drier areas in western Labrador were rated as good. Several wildfires were burning in northwestern Labrador during the survey.

Other areas

Pacific Flyway breeding-waterfowl habitat conditions outside of Alaska were generally dry in the northern regions and average to above average in the central regions before becoming drier farther south. There was below-normal snowpack in interior British Columbia, resulting in very dry conditions, particularly near Chilcotin. It was a late spring and birds were settling onto breeding habitats notably later than 2024. Conditions across Washington were variable in 2025. The west side was categorized mostly as abnormally dry with portions of the North and South Puget Lowlands in moderate drought. The only regions not in any drought status were portions of the Chehalis and Hood Canal strata. Fewer sheetwater habitats appeared available and urban retention ponds seemed lower than normal. East side habitats continued to improve from 2023, one of the driest years on record, and most had no drought intensity. Areas of abnormally dry habitats were recorded on the border with Idaho and the Irrigated and Potholes strata; however, overall impression was wetter than 2024, with Potholes stratum the most improved. Oregon snowpack was above average in nearly all basins. The Klamath, Oregon Closed, John Day, and Baker basins had exceptional snowpack (>150% above average). April 2025 was abnormally dry and warm across all Oregon basins, resulting in rapid snowmelt. Despite the dry month, precipitation was above average for the third consecutive winter and spring in eastern Oregon, which continued to improve habitat conditions following years of drought. Klamath, Lake, and Harney County wetland conditions were excellent. Many seasonal playas, lake, and wetlands were filled, with water inundating upland sagebrush edges. Northeast Oregon had more variable habitat conditions. The Baker Valley was excellent but only fair conditions in the Grande Ronde Valley and Columbia Basin. Western Oregon habitat conditions are less affected by snowpack and low-elevation rain normally maintains abundant temporary and seasonal wetlands in the Willamette Valley. Minimal April rainfall led to a lack of sheetwater and flooded low

depressional habitats. Accumulated California precipitation declined in a southerly direction. Northern California was near to above average, central California average to slightly-below average, and southern California received below-average precipitation. Statewide water storage levels were at or above historical averages except San Luis Reservoir, which was 88% of its historical average. Water allocations for wetland management was 100% for all Central Valley Project management areas. Water allocation for the Klamath Basin National Wildlife Refuge Complex in northeastern California was currently unknown; however, water deliveries were expected to remain limited. Other areas in northeastern California should have adequate water supply for wetland management.

The midwestern U.S. was dry in the west but improved slightly as spring progressed and generally wet conditions continued across the Great Lakes region. Ice out was two to three weeks early in southern Minnesota but about a week late in the north. The entire state was dry early May. Wetlands remained low and drainage and invasive hybrid cattails remain a problem. Poor production was expected statewide, with maybe slightly better production from Alexandria to Fergus Falls and in north-central Minnesota. Precipitation later in May and June may benefit what broods were produced. Although drier conditions were recorded, Michigan habitat conditions remained generally good to excellent. Fair conditions were expected from Saginaw Bay into mid-Michigan, excellent conditions in the southeastern Lower Peninsula, and good habitats were noted in the Upper Peninsula and the remainder of the Lower Peninsula. The statewide wetland index was 20% lower than 2024 and 22% below the long-term average. Great Lakes water levels were slightly below the long-term average for lake Superior, Michigan, and Huron but slightly above the long-term average for St. Clair and Erie. Wisconsin was generally wetter than 2024. Wetland types increased across all regions, except for a sliver of the north, and all regions remain well above their long-term averages. Good production was expected nearly statewide. Much of the northeast experienced drought conditions during the winter (January–March) and entered the breeding season (April) with below average precipitation, above average temperatures, and advanced phenology. Habitat conditions in the early season were fair to below average. Above average precipitation in May resulted in improved nesting and brood rearing conditions in the mid-late breeding season.

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Status of Geese and Swans

This section summarizes information on the status of goose and swan populations in North America. Information was compiled from a broad geographic area and is provided to assist managers in regulating harvest. Most populations of geese and swans in North America nest in the Arctic and Subarctic regions of Alaska and northern Canada (Figure 6), but several Canada goose (*Branta canadensis*) populations nest in temperate regions of the United States and southern Canada ("temperate-nesting" populations). Arctic-nesting geese rely predominantly on stored reserves for egg production. Thus, persistent snow cover reduces nest site availability, delays nesting activity, and often results in depressed reproductive effort and productivity. In general, goose productivity will be above average if nesting begins by late May in western and central portions of the Arctic and by early June in the eastern Arctic. Production usually is poor if nest initiation is delayed much beyond 15 June. For temperate-nesting Canada goose populations, productivity is generally less variable among years, but recruitment can be affected by local factors such as drought or weather events.

Methods

We have used common nomenclature for various goose and swan populations, but they may differ from other published information. Species nomenclature follows the List of Migratory Birds in Title 50 of the Code of Federal Regulations, Section 10.13, revised 31 July 2023 (88 FR 49310). Some of the goose populations described herein are composed of more than one subspecies, and some light goose populations contain two species (i.e., snow and Ross's geese). Population estimates for geese (Appendix C.1, C.2, and C.3) are derived from a variety of surveys conducted by biologists from federal, state, and provincial agencies, or from universities (Appendices A.2). Surveys include the Waterfowl Breeding Population and Habitat Survey (WBPHS), the Midwinter Survey (MWS), the Yukon–Kuskokwim Delta (YKD) Coastal Zone Survey, the Arctic Coastal Plain (ACP) Survey, and surveys that are specifically designed for various goose populations. Where survey methodology allowed, 95% confidence intervals were calculated. Trends of population estimates were calculated by regressing the natural logarithms of survey results on year, and slope coefficients were presented and tested for equality to zero (t-statistic). Changes in population indices between the most recently available and previous years were calculated and, where possible, assessed with a two-tailed z-test using the sum of sampling variances for the two estimates. All statistical tests and analyses were conducted using an alpha level of 0.05. Primary abundance indices used as management plan population objectives are described, graphed, and included in appendices. Beginning in 2019, we only report the primary abundance indices for goose populations. Other survey information can be found in the Flyway Databooks at: `https://fws.gov/library/collections/migratory-bird-flyway-data-books`. Information was the best available at the time of finalizing this report but can differ from final estimates or observed conditions.

Results and Discussion

Conditions in the Arctic and Subarctic

In 2025, spring phenology was early or average across most areas in the Subarctic and Arctic, although later than average spring phenology occurred in some areas of northern Alaska and the western Canadian Arctic. Biologists noted reduced snowpack or drier than normal con-

Figure 6. Important goose and swan nesting areas in Arctic and Subarctic North America.

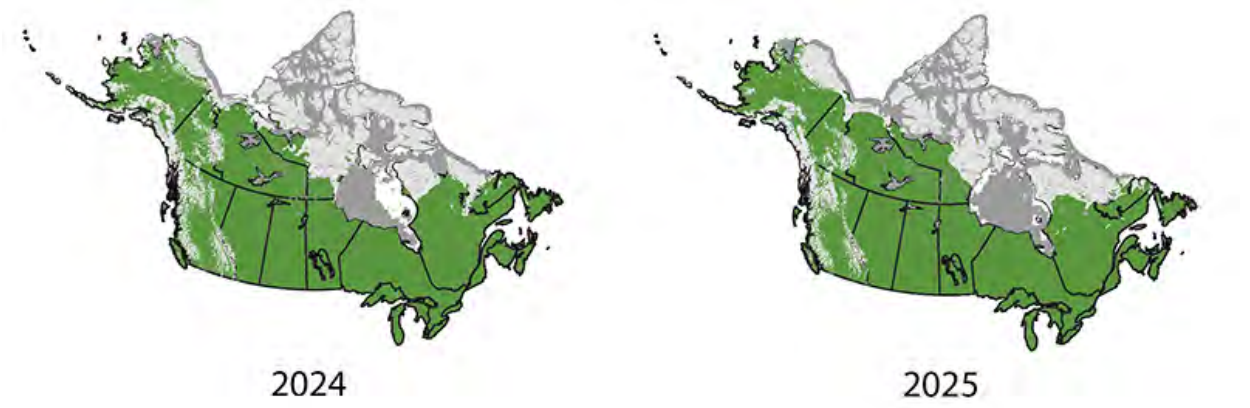

Figure 7. The extent of snow (light gray) and ice (dark gray) cover in North America on 2 June 2024 and 2 June 2025 (National Ice Center 2025).

ditions in some areas of central and eastern Canada. The snow and ice cover graphics (Figure 7) illustrate that ice or snow cover on 2 June 2025 compared to the same date in 2024 was similar across many areas of Alaska and the central Canadian Subarctic and Arctic and more extensive in the eastern Canadian Arctic (National Ice Center 2025).

Conditions in Southern Canada and the United States

In 2025, habitat conditions in many western lower 48 U.S. states and Canadian prairie provinces remained relatively dry and in some level of drought, similar to 2024. Long-term precipitation levels and habitat conditions were generally average or above-average in most central and eastern lower 48 states, although spring flooding occurred in some southern and mid-latitude states. Biologists noted early spring phenology in some central and eastern states and provinces.

Description of Populations and Primary Monitoring Surveys

Canada and Cackling Geese

See Figure 10, Table 14, and Appendices C.1.

North Atlantic Population

North Atlantic Population Canada geese principally nest in Newfoundland and Labrador. They commingle during winter with other Atlantic Flyway Canada goose populations, although North Atlantic Population Canada geese have a more coastal distribution than other populations (Figure 8). In 2016, biologists revised the index used to monitor this population to a composite estimate that combines data from both the Canadian Wildlife Service (CWS) helicopter plot survey and the WBPHS (strata 66, 67, and 70). The new composite time series is updated annually due to the estimation procedure. Estimates presented are mean and 2.5% and 97.5% Bayesian credible intervals.

Atlantic Population

Atlantic Population Canada geese nest throughout much of Quebec, especially along Ungava Bay, the eastern shore of Hudson Bay, and on the Ungava Peninsula. This population winters from New England to South Carolina, but the largest concentrations occur on the Delmarva Peninsula (Figure 8). This population is monitored by a spring survey of the Ungava Peninsula in northern Quebec (Atlantic Flyway Council 2008).

Atlantic Flyway Resident Population

Atlantic Flyway Resident Population Canada geese were introduced and established throughout the Atlantic Flyway during the early 20^{th} century and are composed of various subspecies. This population of large Canada geese inhabits all states of the Atlantic Flyway and southern portions of Quebec and the Maritime provinces (Figure 8). The breeding population is estimated during the spring via the Atlantic Flyway Breeding Waterfowl Plot Survey (Atlantic Flyway Council 2011).

Southern Hudson Bay Population

Southern Hudson Bay Population Canada geese nest in the Hudson Bay Lowlands, on Akimiski Island, and along the eastern and southern portions of Hudson and James Bays, and they concentrate during fall and winter throughout Manitoba, Ontario, and the Mississippi Flyway states (Figure 8). This population is comprised of the former Southern James Bay, Mississippi Valley, and Eastern Prairie Populations of Canada geese. In 2016 a new aerial survey was developed to monitor Southern Hudson Bay Population Canada geese along the south and west coastal areas of the Hudson and James Bays (Mississippi Flyway Council 2021*a*).

Mississippi Flyway Giant Population

Mississippi Flyway Giant Population Canada geese nest in the Mississippi Flyway states and in southern Ontario and southern Manitoba. Giant Canada geese were reestablished or introduced in all Mississippi Flyway states (Figure 8), and they now represent a large proportion of all Canada geese in the Mississippi Flyway. The total population is estimated during spring surveys within the Mississippi Flyway states and provinces (Mississippi Flyway Council 2021*a*).

Western Prairie and Great Plains Populations

Western Prairie Population Canada geese nest in eastern Saskatchewan and western Manitoba. Great Plains Population Canada geese are composed of large Canada geese resulting from restoration efforts in Saskatchewan, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas. These two populations are managed jointly. Geese from these breeding populations commingle during migration and winter with Canada geese from other populations (Figure 8). The WBPHS (strata 21–25, 31, 34–40, 43–49) provides indices of this population within its primary breeding range.

Midcontinent Cackling Geese

Midcontinent cackling geese (*B. hutchinsii*) nest across the Canadian Arctic and winter throughout the Central and Mississippi Flyways (Figure 8). Lincoln estimates of the adult cohort are the primary management indices for this population. Lincoln estimates are derived from annual estimates of total harvest and harvest rate and represent an indirect measure of abundance. Due to the methodology, Lincoln estimates are typically not available from the most recent years. Alternative nomenclature, Central Flyway Arctic Nesting geese (Central and Mississippi Flyway Councils 2013), has also been used for this population.

Hi-line Population

Hi-line Population Canada geese nest in southeastern Alberta, southwestern Saskatchewan, eastern Montana and Wyoming, and Colorado. This population winters in these states and New Mexico (Figure 8). A breeding index of Hi-line Population geese is based on the WBPHS estimates from portions of Alberta (strata 26–29), Saskatchewan (strata 30, 32, 33), and Montana (strata 41–42; (Central Flyway Council 2010).

Western Population

Western Population Canada geese nest and winter in the Pacific Flyway west of the Rocky Mountains from northern Alberta and British Columbia to southern California and Arizona (Figure 8). The Pacific Flyway updated the management plan for this population in 2023, which

replaced prior management guidelines for Pacific and Rocky Mountain Populations of Canada geese. An index of breeding Western Population Canada geese is based on standardized surveys in British Columbia, Washington, Oregon, and California and the WBPHS estimates from strata 76 in Alberta, portions of strata 26–29 in Alberta, and portions of strata 41–42 in Montana (Pacific Flyway Council 2023).

Dusky Canada Geese

Dusky Canada geese nest on the Copper River Delta of south-central Alaska and winter in the Willamette and Lower Columbia River Valleys of Oregon and Washington (Figure 8). Dusky Canada geese are surveyed on their breeding grounds on the Copper River Delta and Middleton Island, Alaska (Pacific Flyway Council 2015).

Cackling/minima Cackling Geese

Cackling/minima cackling geese nest on the YKD of western Alaska and primarily winter in the Willamette and Lower Columbia River Valleys of Oregon and Washington (Figure 8). The total fall population is estimated from counts of adults during the YKD Coastal Zone Survey during the spring, expanded by a ratio derived from neck-collared individuals observed in the fall and winter (Pacific Flyway Council 2016*a*).

Lesser Canada Geese

Lesser Canada geese nest throughout interior and south-central Alaska and winter in Washington, Oregon, and California (Figure 8). Population indices are based on WBPHS estimates in stratum 1 (Kenai-Susitna), stratum 2 (Nelchina), stratum 3 (Tanana-Kuskokwim), stratum 4 (Yukon Flats), and stratum 12 (Old Crow Flats).

Taverner's Cackling Geese

Taverner's cackling geese nest throughout tundra areas of the North Slope and western Alaska and winter in Washington, Oregon, and California (Figure 8). Population indices are derived from three breeding survey efforts: the Arctic Coastal Plain Survey, the YKD Coastal Zone Survey, and the WBPHS (stratum 9 [inland portions of the YKD], stratum 10 [Seward Peninsula], and stratum 11 [Kotzebue Sound]).

Aleutian Cackling Geese

Aleutian cackling geese nest primarily on the Aleutian Islands and winter along the Pacific Coast as far south as central California (Figure 8). The total population during the fall and winter is estimated from mark-resight observations of neck-banded geese (Pacific Flyway Council 2006*a*).

Light Geese

See Figure 11, Table 15, and Appendices C.2.

The term light geese collectively refers to Ross's geese (*Anser rossii*) and both the lesser (*A. caerulescens caerulescens*) and greater (*A. c. atlantica*) snow goose subspecies (including all hybrids and both white and blue color phases). There are three populations of lesser snow geese based on their breeding ranges (Wrangel Island, Western Arctic, and Midcontinent). Lesser snow geese and Ross's geese occur in many wintering areas together and are not typically differentiated during the Midwinter Survey, so we report indices of light geese from this survey.

Ross's Geese

Ross's geese nest primarily in the Queen Maud Gulf region, but increasing numbers are nesting in other areas of the central and eastern Arctic and along the western coast of Hudson Bay. Ross's geese primarily winter in California, New Mexico, Texas, and Mexico, with increasing numbers wintering in other portions of the Central and Mississippi Flyways (Figure 9). The management plan for Ross's geese was updated in 2021 (Mississippi Flyway Council 2021*b*), and Lincoln estimates of the adult cohort are now the primary management indices.

Midcontinent Population

Midcontinent Population lesser snow geese winter in the Central and Mississippi Flyways and nest primarily from Banks Island in the western Arctic to Baffin Island in the eastern Arctic (Figure 9). The management plan for this population was updated in 2018 and replaced prior management guidelines for Midcontinent and Western Central Flyway Population lesser snow geese (Mississippi Flyway Council 2018, Central Flyway Council 2018). Lincoln estimates of the adult cohort are now the primary management indices.

Western Arctic and Wrangel Island Populations

Lesser snow geese in the Pacific Flyway originate from nesting colonies in the western and central Arctic and on Wrangel Island, Russia. Western Arctic lesser snow geese nest primarily on Banks Island, with smaller colonies in coastal areas of the Northwest Territories, and along the Alaskan Arctic Coastal Plain. Wrangel Island lesser snow geese nest on Wrangel Island. Both populations mix during winter and also occur with Midcontinent Population lesser snow geese and Ross's geese. Western Arctic lesser snow geese primarily winter in central and southern California, the western Central Flyway, and the northern highlands of Mexico. Wrangel Island lesser snow geese principally winter in the Skagit-Fraser River Deltas in British Columbia and Washington and in northern and central California (Figure 9). In 2023, the Pacific Flyway updated the harvest strategies for these populations. The primary monitoring indices for Western Arctic lesser snow geese are winter indices of snow geese in California. The primary monitoring indices for Wrangel Island lesser snow geese are winter indices of adult snow geese in the Skagit-Fraser area. In the past, breeding ground surveys were conducted for Western Arctic (Pacific Flyway Council 2013) and Wrangel Island lesser snow geese (Pacific Flyway Council 2006*b*).

Greater Snow Geese

Greater snow geese nest on Bylot, Axel Heiberg, Ellesmere, and Baffin Islands, and in Greenland, and winter along the Atlantic coast from New Jersey to North Carolina (Figure 9). This population is monitored on spring staging areas near the St. Lawrence Valley in Quebec by an annual aerial photographic survey (Atlantic Flyway Council 2009).

Greater White-fronted Geese

See Figure 12, Table 16, and Appendices C.3.

Pacific Population

Pacific Population greater white-fronted geese (*A. albifrons*) primarily nest on the YKD in Alaska and winter in the Central Valley of California (Figure 9). This population is monitored using a predicted fall population index, which is based on the number of indicated total birds from the YKD Coastal Zone Survey and the WBPHS in the Bristol Bay area (stratum 8) and interior portions of the YKD (stratum 9) and expanded by a factor derived from the correlation of these indices with past fall counts in Oregon and California (Pacific Flyway Council 2003).

Midcontinent Population

Midcontinent Population greater white-fronted geese nest from central and northwestern Alaska to the west coast of Hudson Bay and the Melville Peninsula. This population concentrates in southern Saskatchewan and Alberta during the fall and in southern Central and Mississippi Flyway states and Mexico during the winter (Figure 9). The management plan for this population was updated in 2023, and Lincoln estimates of the adult cohort are now the primary management indices (Central, Mississippi, and Pacific Flyway Councils 2023).

Brant

See Figure 12, Table 16, and Appendices C.3.

Atlantic Brant

Atlantic brant (*B. bernicla hrota*) primarily nest on islands in the eastern Canadian Arctic and winter along the Atlantic Coast from Massachusetts to North Carolina (Figure 9). The Midwinter Survey provides an index of this population within its winter range in the Atlantic Flyway (Atlantic Flyway Council 2002).

Pacific Brant

Pacific brant include black brant (*B. b. nigricans*) and western high arctic brant (*B. b. hrota*). Black brant nest across the YKD and North Slope in Alaska, Banks Island, other islands of the western and central Arctic, the Queen Maud Gulf, and Russia. They stage during fall at Izembek Lagoon, Alaska, and winter as far south as Mexico. Western high arctic brant nest on the Parry Islands of the Northwest Territories and Nunavut. They stage during fall at Izembek Lagoon, Alaska, and predominantly winter in the Padilla, Samish, and Fidalgo Bays of Washington and near Boundary Bay, British Columbia, although some individuals have been observed as far south as Mexico (Figure 9). In 2024, the Pacific Flyway updated the primary monitoring indices for this population to a photographic survey conducted at Izembek Lagoon, Alaska during the fall. Winter counts in the U.S., Canada, and Mexico are also conducted (Pacific Flyway Council 2018).

Emperor Geese

Emperor geese (*A. canagicus*; Figure 12, Table 16, and Appendices C.3) breed along coastal areas of the Bering Sea, with the largest concentration on the YKD in Alaska. Emperor geese stage along the Alaska Peninsula during the fall and spring and winter along the Aleutian Islands (Figure 9). This population is monitored during spring by the YKD Coastal Zone Survey (Pacific Flyway Council 2016*b*).

Swans

See Figure 12, Table 16, and Appendices C.3.

Western Population Tundra Swans

Western Population tundra swans (*Cygnus columbianus*) nest along the coastal lowlands of western Alaska, and the YKD is a primary breeding area. Western Population tundra swans primarily winter in California, Utah, and the Pacific Northwest (Figure 9). The management plan for Western Population tundra swans was updated in 2017, and the primary management indices are derived from the YKD Coastal Zone Survey and the WBPHS (stratum 8 [Bristol Bay], stratum 9 [inland portions of the YKD], stratum 10 [Seward Peninsula], and stratum 11 [Kotzebue Sound]; Pacific Flyway Council 2017).

Eastern Population Tundra Swans

Eastern Population tundra swans nest from the Seward Peninsula of Alaska to the northeast shore of Hudson Bay and Baffin Island. The Mackenzie River Delta and adjacent areas in the Northwest Territories are of particular importance. This population predominantly winters in coastal areas from Maryland to North Carolina (Figure 9). The Midwinter Survey provides an index of this population within its winter range of the Atlantic and Mississippi Flyways (Atlantic, Mississippi, Central, and Pacific Flyway Councils 2007).

Trumpeter Swans

Trumpeter swans (*C. buccinator*) nest south of the Brooks Range and east of the YKD in Alaska and within localized areas of Yukon Territory, western Northwest Territories, southern Canadian provinces from British Columbia to Quebec, and some northern U.S. states from Washington to New York. There are three recognized North American populations: the Pacific Coast, Rocky Mountain, and Interior Populations. Trumpeter swan information can be found at: `https://www.fws.gov/species/trumpeter-swan-cygnus-buccinator`.

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Pacific Flyway Council. 2006*b*. Pacific Flyway Management Plan for the Wrangel Island Population of Lesser Snow Geese.

Pacific Flyway Council. 2013. Pacific Flyway Management Plan for the Western Arctic Population of Lesser Snow Geese.

Pacific Flyway Council. 2015. Pacific Flyway Management Plan for the Dusky Canada Goose.

Pacific Flyway Council. 2016*a*. Management Plan for the Cackling Canada Goose.

Pacific Flyway Council. 2016*b*. Management Plan for the Emperor Goose.

Pacific Flyway Council. 2017. Management Plan for the Western Population of Tundra Swans.

Pacific Flyway Council. 2018. Management Plan for the Pacific Population of Brant.

Pacific Flyway Council. 2023. Management Plan for the Pacific Flyway Population of Western Canada Geese.

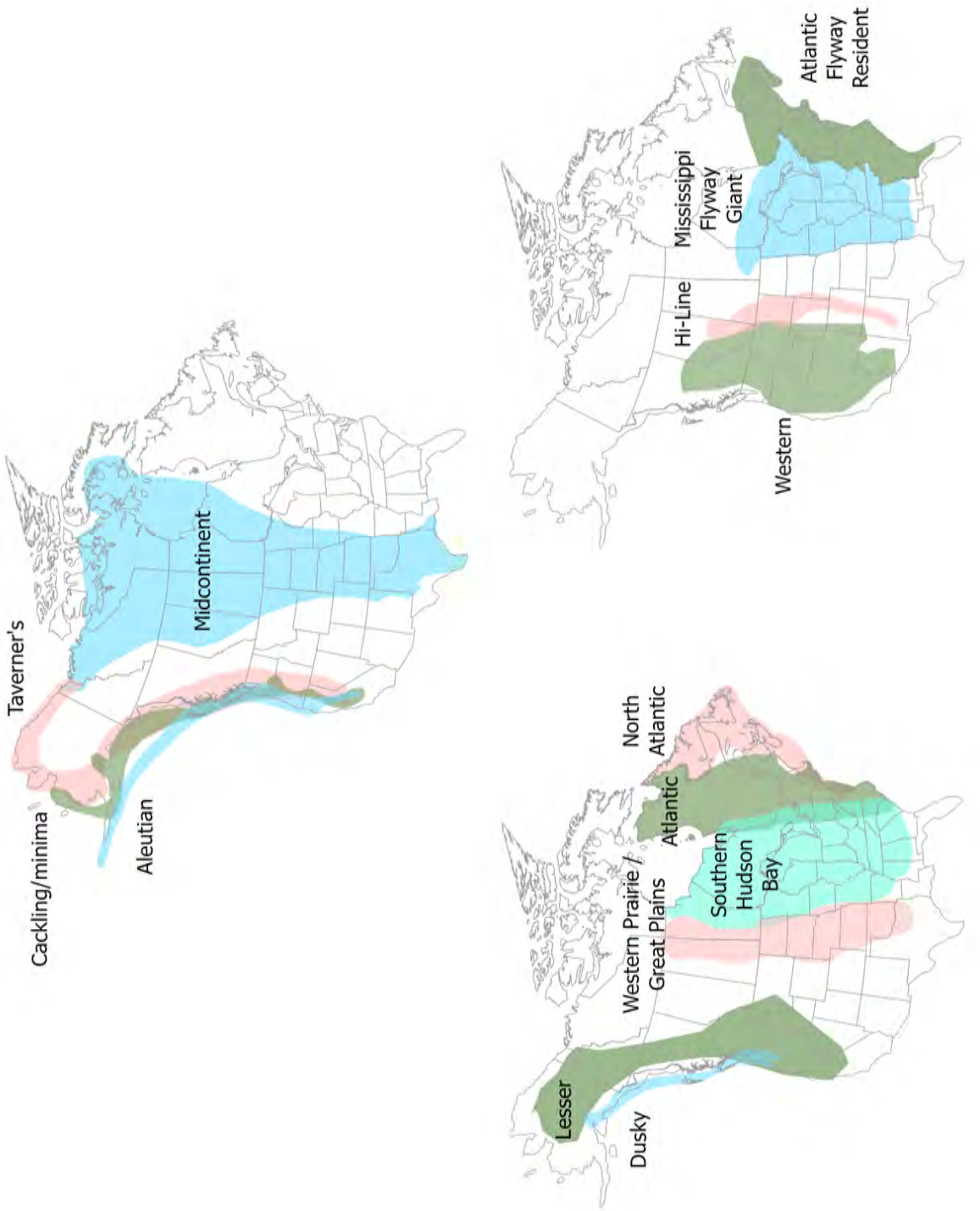

Figure 8. Approximate ranges of Canada and cackling goose populations in North America.

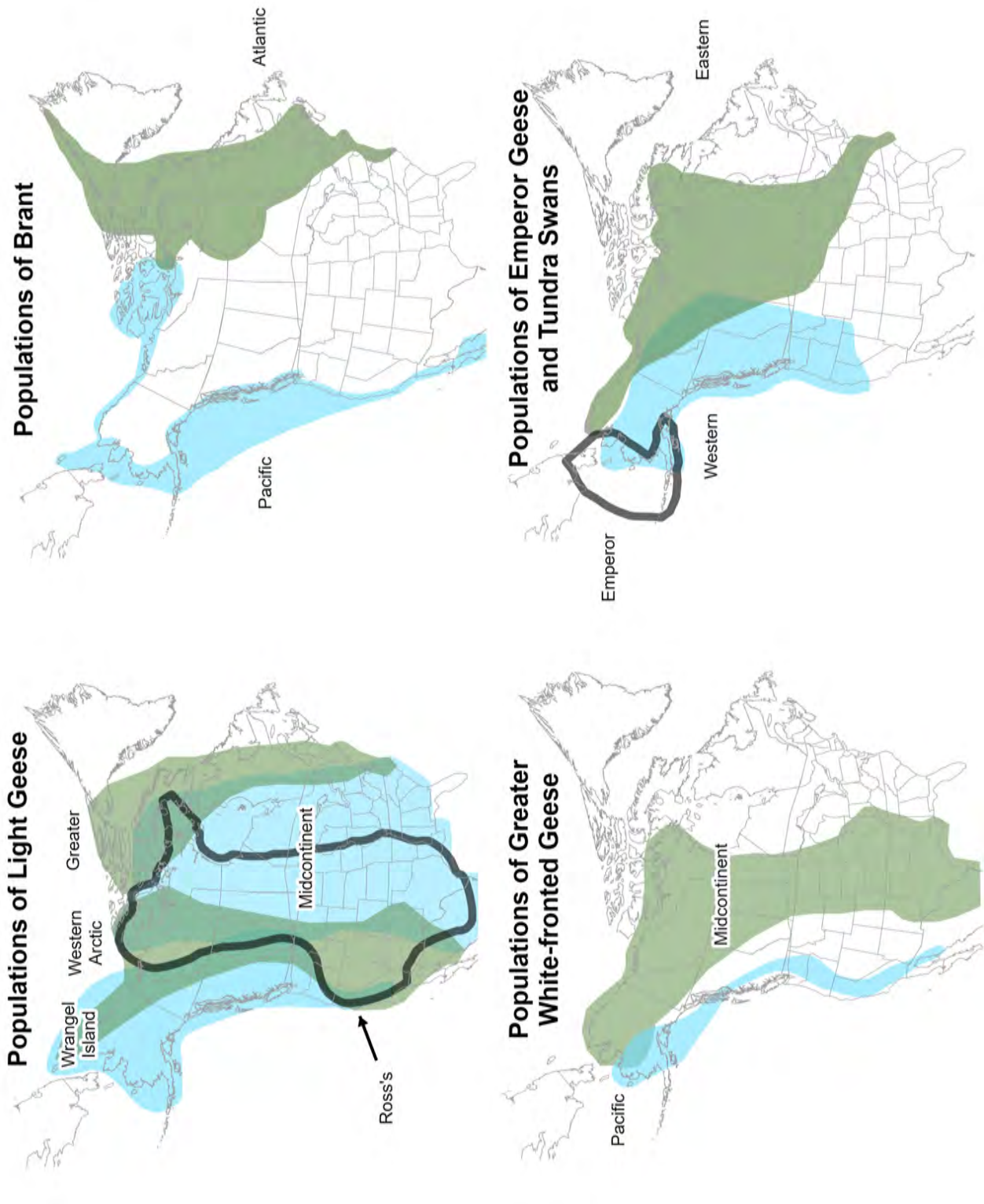

Figure 9. Approximate ranges of light goose, brant, greater white-fronted goose, emperor goose, and tundra swan populations in North America.

Table 14. Canada and cackling goose indices (in thousands) from primary monitoring surveys.

	Most recent		Previous		Change from previous		10-year trend	
Population	Year	Estimate	Year	Estimate	%	*P*	%/yr	*P*
North Atlantic	2025	57	2024	55	+4	0.882	+1	0.314
Atlantic	2025	150	2024	89	+68	0.001	−3	0.269
Atlantic Flyway Resident	2025	1,003	2024	933	+8	0.543	0	0.929
Southern Hudson Bay	2024	89	2023	95	−7	0.215	−2	0.092
Mississippi Flyway Giant	2025	1,432	2024	1,423	+1	–	0	0.612
Western Prairie & Great Plains	2025	1,168	2024	1,128	+4	0.735	−3	0.195
Midcontinent	2023	1,734	2022	1,501	+16	0.441	−5	0.071
Hi-Line	2025	331	2024	329	+1	0.965	−2	0.160
Western	2025	425	2024	320	+33	0.216	−2	0.220
Dusky	2025	12	2024	8	+45	0.004	−5	0.058
Cackling/minima	2025	124	2024	124	0	0.981	−9	0.001
Lesser	2025	11	2024	3	+306	0.067	+5	0.606
Taverner's	2025	34	2024	38	−12	0.505	−4	0.022
Aleutian	2025	205	2024	161	+27	0.328	+2	0.257

Table 15. Light goose (Ross's and snow goose) indices (in thousands) from primary monitoring surveys.

	Most recent		Previous		Change from previous		10-year trend	
Population	Year	Estimate	Year	Estimate	%	*P*	%/yr	*P*
Ross's geese	2023	3,409	2022	1,076	+217	<0.001	−7	0.266
Midcontinent Population lesser snow geese	2023	7,993	2022	4,686	+71	<0.001	−12	0.013
Western Arctic Population lesser snow geese	2025	1,007	2024	1,132	−11	–	−2	0.352
Wrangel Island Population lesser snow geese	2023	87	2022	101	−14	–	+7	<0.001
Greater snow geese	2025	428	2024	628	−32	<0.001	−6	0.008

Table 16. Greater white-fronted goose, brant, emperor goose, and tundra swan indices (in thousands) from primary monitoring surveys.

Population	Most recent		Previous		Change from previous		10-year trend	
	Year	Estimate	Year	Estimate	%	*P*	%/yr	*P*
White-fronted goose								
Pacific	2025	469	2024	415	+13	0.415	−6	0.008
Midcontinent	2023	2,750	2022	1,278	+115	<0.001	−4	0.255
Brant								
Atlantic	2025	134	2024	113	+19	–	−4	0.030
Pacific	2024	189	2023	245	−23	0.512	−6	0.086
Emperor goose	2025	22	2024	17	+29	0.002	−5	0.006
Tundra swan								
Western	2025	73	2024	74	−1	0.959	−7	0.005
Eastern	2025	77	2024	64	+20	–	−4	0.127

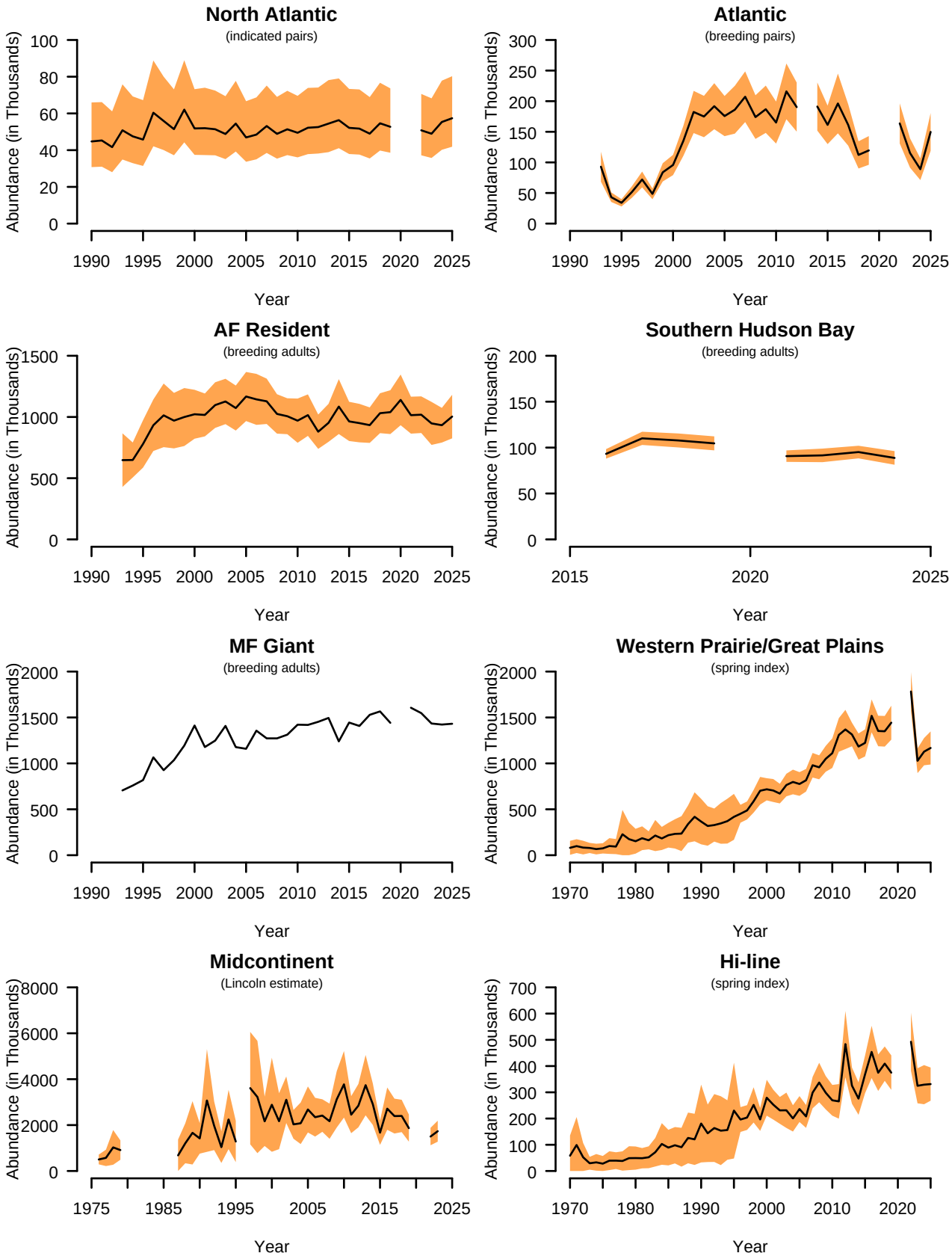

Figure 10. Abundance indices (and 95% confidence intervals, where applicable) of Canada and cackling goose populations based on primary management surveys.

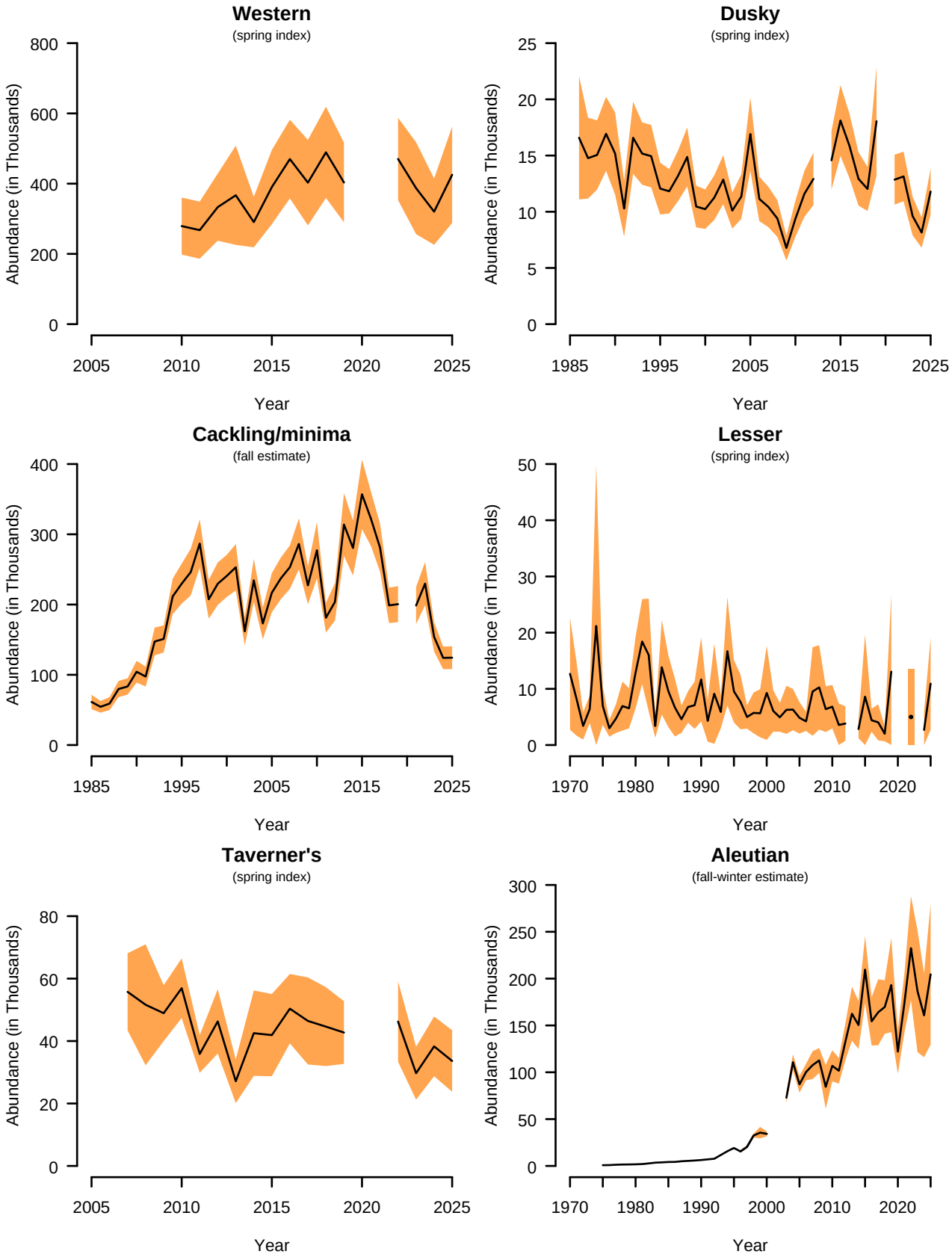

Figure 10. Continued.

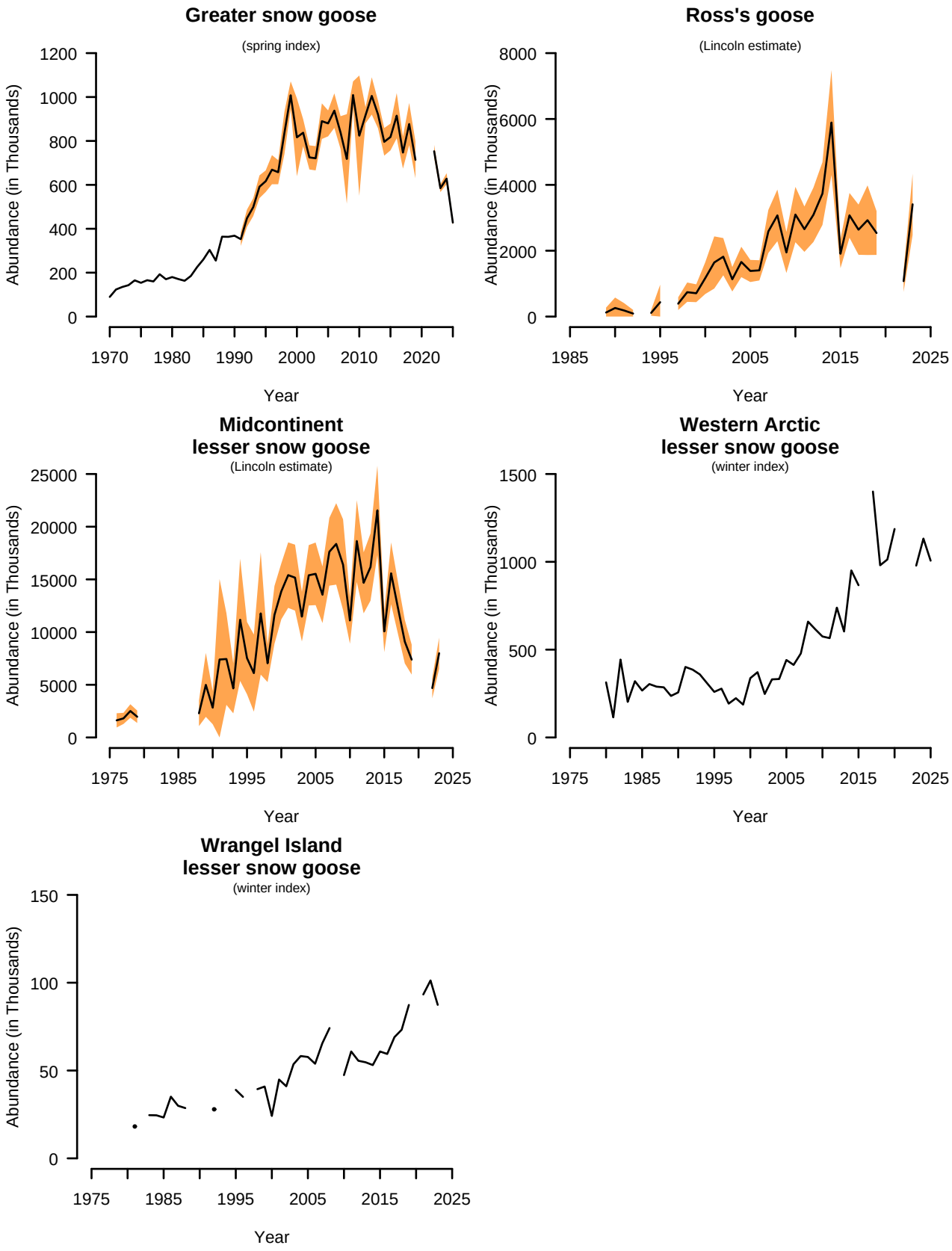

Figure 11. Abundance indices (and 95% confidence intervals, where applicable) of light goose (Ross's and snow goose) populations based on primary management surveys.

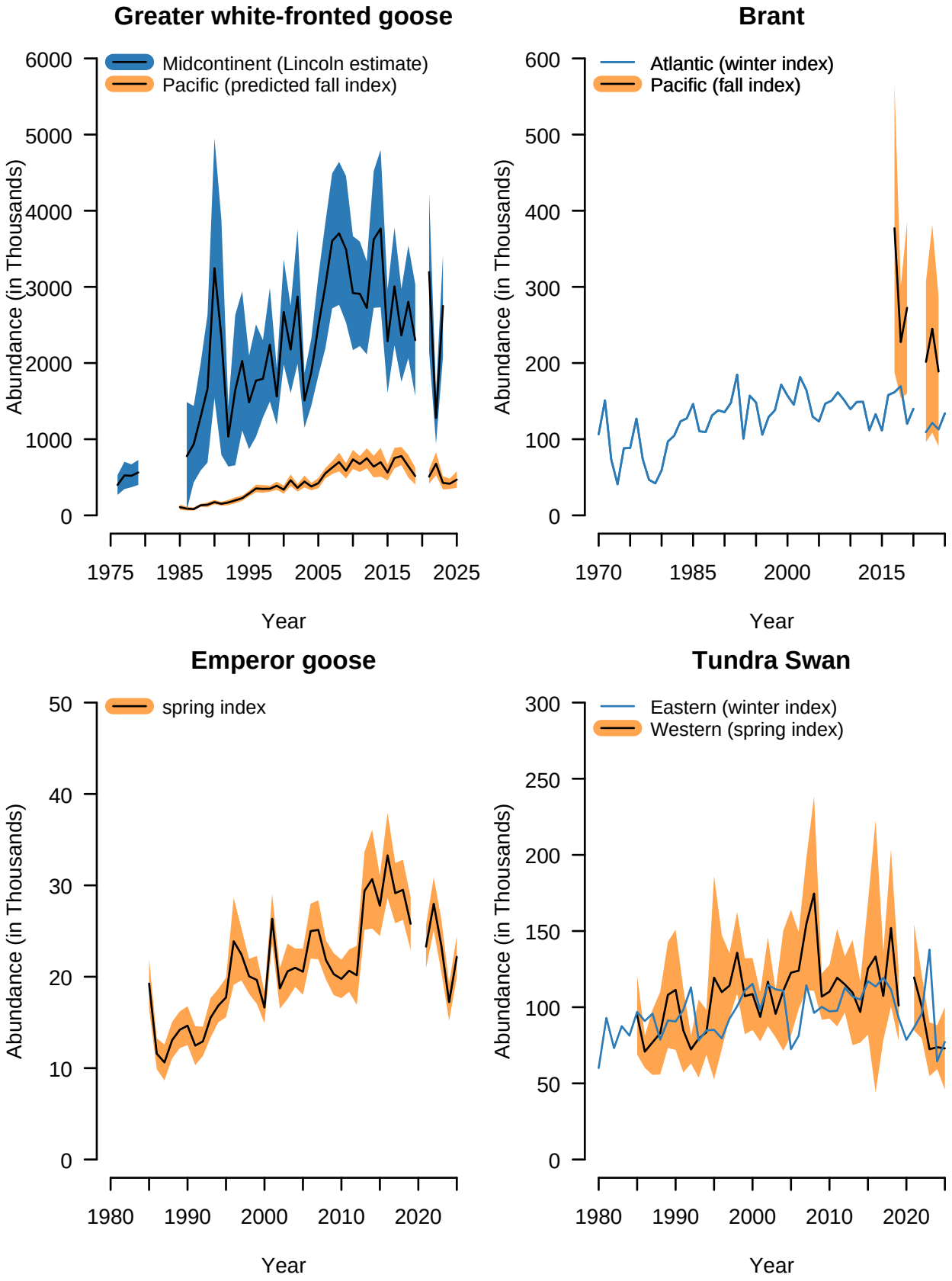

Figure 12. Abundance indices (and 95% confidence intervals, where applicable) of greater white-fronted goose, brant, emperor goose, and tundra swan populations based on primary management surveys.

A. Individuals who supplied information for the generation of this report

A.1: Individuals who supplied information on the status of ducks.

Alaska, Yukon Territory, and Old Crow Flats (Strata 1–12)

Air	H. Wilson and W. Schock
Air	B. Nigus and T. Zeller

Northern Alberta, Northeastern British Columbia, and Northwest Territories (Strata 13–18, 20, and 77)

Air	G. Wilkerson and B. Fortier

Northern Saskatchewan and Northern Manitoba (Strata 21–25)

Air	W. Rhodes and C. Cain

Southern and Central Alberta (Strata 26–29, 75, and 76)

Air	R. Spangler and J. Sands
Ground	G. Raven[a], J. Melsted[a], E. Beck[a], M. Watmough[a], J. Dyer[a], D. Raven[a], J. Caswell[b], and G. Mack[b]

Southern Saskatchewan (Strata 30–33)

Air	P. Thorpe and S. Chandler
Ground	B. Bartzen[a], C. DeMeyer[a], F. Moore[a], M. Tan[a], T. Raven[a], and C. Hudson[a]

Southern Manitoba (Strata 34–40)

Air	S. Yates and S. Salvevold
Ground	M. Schuster[a], J. Leafloor[a], F. Baldwin[a], R. Bruce[a], O. Andrushuk[a], J. St. George[a], and H. Singer[c]

Montana and Western Dakotas (Strata 41–44)

Air	P. Thorpe and S. Chandler
Air	R. Spangler and J. Sands
Air	T. Liddick and J. Drahota
Ground	T. Cooper, S. McDowel, A. Ryba, and D. Fronczak

Eastern Dakotas (Strata 45–49)

Air	T. Liddick and J. Drahota
Ground	D. Collins, B. Maddox, K. Tierney, and M. Guay

Western Ontario and Central Quebec (Strata 50, 69–70)

Air	J. Rayfield and S. Catino

Southern Ontario and Southern Quebec (Strata 51–52, 56, 68)

air	S. Earsom and C. Bleke

Maine and Atlantic Canada (Strata 62–67)

Air M. Koneff and J. Dooley

Canadian Wildlife Service helicopter plot survey

Quebec C. Lepage[a], S. Orichefsky[a], M. Tétreault[a], Y. Zrig[d], and C. Capkun-Hout[a]

Ontario S. Meyer[a], R. Wood[a], D. Sadler[a], C. Sharp[a], and Y. Delage[d]

New Brunswick & Nova Scotia T. Barney[a], A. Hicks[a], R. Johnstone[a], and D. Johnston[d]

Newfoundland & Labrador M. English[a], B. Rogers[a], C. Ward[a], and R. Wells[a]

British Columbia

Air M. Ross[b], W. O'Shea[b], K. Bas[c], and B. Harrison[c]

California

Air M. Weaver[b] and C. Brady[b]

Michigan

Air B. Barlow[b], B. Dybas-Berger[b], C. Dole[b], C. Fedewa[b], N. Kalejs[b], T. McFadden[b], C. Eckloff[b], N. Levitte[b], H. Pulling[b], A. Shook[b], and B. Luukkonen[b]

Minnesota

Air B. Davis[b], A. Fischer[b], N. Brown[b], and T. Gray[b]

Ground W. Brininger, J. Riens, K. Spaeth, C. McCarty[b], J. Strege[b], A. Lawyer, N. Larson, D. Wheeling, A. Sidit-Slettedahl, M. Martin, G. Dehmer, and G. Smith

Oregon

Air B. Reishus[b], K. Walton[b], Z. Slick[b], C. Crossley[b], J. Journey[b], and helicopter service provided by JL Aviation Inc.[d]

Washington

Air M. Hamer[b], M. Wilson[b], and J. McHargue[d]

Wisconsin

Air N. Gaskins[b], P. Eyers[b] and S. Burns[b]

Ground E. Borchert[b], M. Carlisle[b], N. Christel[b], J. Christopher[b], J. Christopoulos[b], J. Cotter[b], N. Dhuey[b], S. Easterly[b], E. Feltes[b], T. Finger[b], , G. Friedbauer[b], A. Gerrits[b], D. Goltz[b], R. Hanson[b], D. Johnson[b], A. Kakatsch[b], T. Klein[b], C. Knab[b], E. Kroening[b], A. McDonnell[b], C. Mogen[b], K. Musser[b], S. O'brien[b], S. Sauber, A. Seitz[b], T. Shaurette[b], B. Stefanski[b], T. Tretter[b], G. Wolf[b], B. Woodall[b], B. Woodbury[b], M. Worth[b], C. Young[b], and Z. Zuleger[b]

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[a]Canadian Wildlife Service

[b]State, Provincial or Tribal Conservation Agency

[c]Ducks Unlimited Canada

[d]Other Organization

All others—U.S. Fish & Wildlife Service

A.2: Individuals who supplied information on the status of geese and swans.

Flyway and Regional Survey Reports

P. Devers, J. Fischer, C. Frost, S. Olson, E. Osnas, A. Roberts, D. Safine, T. Sanders, W. Schock, M. Swaim, and H. Wilson

Information from the Waterfowl Breeding Population and Habitat Survey

See Appendix A.1

Atlantic Population Canada Geese

J. Lefebvre[a], R. Spangler, and F. St-Pierre[a]

Southern Hudson Bay Population Canada Geese

R. Brook[b]

Mississippi Flyway Population Giant Canada Geese

O. Jones[b]

Midcontinent Cackling Geese

F. Baldwin[a], J. Leafloor[a], R. Raftovich, A. Smith[a], and L. Walker[c]

Ross's Geese and Midcontinent Lesser Snow Geese

R. Alisauskas[a]

Wrangel Island Population Lesser Snow Geese

K. Spragens[b]

Greater Snow Geese

J. Lefebvre[a]

Midcontinent Population White-fronted Geese

J. Fischer, V. Patil[c], R. Raftovich, G. Raven[a], A. Smith[a], and L. Walker[c]

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[a]Canadian Wildlife Service
[b]State, Provincial or Tribal Conservation Agency
[c]Other Organization
All others–U.S. Fish and Wildlife Service

B. Historical estimates of May ponds and regional waterfowl populations

Table B.1. Estimated number of May ponds and standard errors (in thousands) in portions of Prairie and Parkland Canada and the northcentral U.S.

	Prairie Canada		Northcentral U.S.[a]		Total	
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$
1961	1,977.2	165.4				
1962	2,369.1	184.6				
1963	2,482.0	129.3				
1964	3,370.7	173.0				
1965	4,378.8	212.2				
1966	4,554.5	229.3				
1967	4,691.2	272.1				
1968	1,985.7	120.2				
1969	3,547.6	221.9				
1970	4,875.0	251.2				
1971	4,053.4	200.4				
1972	4,009.2	250.9				
1973	2,949.5	197.6				
1974	6,390.1	308.3	1,840.8	197.2	8,230.9	366.0
1975	5,320.1	271.3	1,910.8	116.1	7,230.9	295.1
1976	4,598.8	197.1	1,391.5	99.2	5,990.3	220.7
1977	2,277.9	120.7	771.1	51.1	3,049.1	131.1
1978	3,622.1	158.0	1,590.4	81.7	5,212.4	177.9
1979	4,858.9	252.0	1,522.2	70.9	6,381.1	261.8
1980	2,140.9	107.7	761.4	35.8	2,902.3	113.5
1981	1,443.0	75.3	682.8	34.0	2,125.8	82.6
1982	3,184.9	178.6	1,458.0	86.4	4,642.8	198.4
1983	3,905.7	208.2	1,259.2	68.7	5,164.9	219.2
1984	2,473.1	196.6	1,766.2	90.8	4,239.3	216.5
1985	4,283.1	244.1	1,326.9	74.0	5,610.0	255.1
1986	4,024.7	174.4	1,734.8	74.4	5,759.5	189.6
1987	2,523.7	131.0	1,347.8	46.8	3,871.5	139.1
1988	2,110.1	132.4	790.7	39.4	2,900.8	138.1
1989	1,692.7	89.1	1,289.9	61.7	2,982.7	108.4
1990	2,817.3	138.3	691.2	45.9	3,508.5	145.7
1991	2,493.9	110.2	706.1	33.6	3,200.0	115.2
1992	2,783.9	141.6	825.0	30.8	3,608.9	144.9
1993	2,261.1	94.0	1,350.6	57.1	3,611.7	110.0
1994	3,769.1	173.9	2,215.6	88.8	5,984.8	195.3
1995	3,892.5	223.8	2,442.9	106.8	6,335.4	248.0
1996	5,002.6	184.9	2,479.7	135.3	7,482.2	229.1

Table B.1. continued

Year	Prairie Canada		Northcentral U.S.[a]		Total	
	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$
1997	5,061.0	180.3	2,397.2	94.4	7,458.2	203.5
1998	2,521.7	133.8	2,065.3	89.2	4,586.9	160.8
1999	3,862.0	157.2	2,842.2	256.8	6,704.3	301.2
2000	2,422.5	96.1	1,524.5	99.9	3,946.9	138.6
2001	2,747.2	115.6	1,893.2	91.5	4,640.4	147.4
2002	1,439.0	105.0	1,281.0	63.4	2,720.0	122.7
2003	3,522.3	151.8	1,667.8	67.4	5,190.1	166.1
2004	2,512.6	131.0	1,407.0	101.7	3,919.6	165.8
2005	3,920.5	196.7	1,460.7	79.7	5,381.2	212.2
2006	4,449.5	221.5	1,644.4	85.4	6,093.9	237.4
2007	5,040.2	261.8	1,962.5	102.5	7,002.7	281.2
2008	3,054.8	147.6	1,376.6	71.9	4,431.4	164.2
2009	3,568.1	148.0	2,866.0	123.1	6,434.0	192.5
2010	3,728.7	203.4	2,936.3	142.3	6,665.0	248.2
2011	4,892.7	197.5	3,239.5	127.4	8,132.2	235.0
2012	3,885.1	146.5	1,658.9	52.7	5,544.0	155.6
2013	4,550.5	185.5	2,341.2	99.0	6,891.7	210.2
2014	4,629.9	168.3	2,551.3	106.5	7,181.2	199.2
2015	4,151.0	146.3	2,156.8	86.0	6,307.7	169.7
2016	3,494.5	147.2	1,518.0	52.7	5,012.5	156.4
2017	4,330.3	157.7	1,765.7	92.2	6,096.0	182.7
2018	3,660.2	147.6	1,567.2	90.2	5,227.4	173.0
2019	2,855.6	103.8	2,134.7	137.3	4,990.3	172.1
2020	No Survey					
2021						
2022	3,473.5	157.5	1,983.4	98.2	5,456.9	185.6
2023	3,313.6	114.2	1,661.5	75.2	4,975.1	136.7
2024	2,681.2	117.4	2,478.2	125.5	5,159.5	171.9
2025	2,552.3	125.3	1,628.2	75.9	4,180.5	146.5

[a] No comparable survey data available for the northcentral U.S. during 1961–1973.

Table B.2. Breeding population estimates (in thousands) for total ducks[a] and mallards for states, provinces, or regions that conduct spring surveys.

	British Columbia		California		Michigan		Minnesota	
Year	Total duck	Mallard	Total duck	Mallard	Total duck	Mallard	Total duck	Mallard
1959								
1960								
1961								
1962								
1963								
1964								
1965								
1966								
1967								
1968							321.0	83.7
1969							323.2	88.8
1970							324.2	113.9
1971							277.1	78.5
1972							217.2	62.2
1973							389.5	99.8
1974							281.6	72.8
1975							471.6	175.8
1976							684.1	117.8
1977							501.1	134.2
1978							462.5	146.8
1979							552.4	158.7
1980							690.6	172.0
1981							439.8	154.8
1982							465.2	120.5
1983							367.1	155.8
1984							528.7	188.1
1985							562.9	216.9
1986							520.8	233.6
1987							589.0	192.3
1988							725.2	271.7
1989							813.6	273.0
1990							807.9	232.1
1991					408.4	289.3	753.7	225.0
1992			497.4	375.8	867.5	385.8	973.3	360.9
1993			666.7	359.0	742.8	437.2	837.2	305.8
1994			483.2	311.7	718.1	420.5	1,115.6	426.5
1995			589.7	368.5	791.9	524.1	797.1	319.4
1996			843.7	536.7	680.5	378.2	889.1	314.8
1997			824.3	511.3	784.0	489.3	868.1	407.4
1998			706.8	353.9	1,068.5	523.0	693.1	368.4
1999			851.0	560.1	744.6	466.1	680.5	316.4

Table B.2. Continued.

	British Columbia		California		Michigan		Minnesota	
Year	Total duck	Mallard	Total duck	Mallard	Total duck	Mallard	Total duck	Mallard
2000			562.4	347.6	793.9	427.2	747.8	318.1
2001			413.5	302.2	497.8	324.2	716.4	320.6
2002			392.0	265.3	742.5	323.2	1,171.5	366.6
2003			533.7	337.1	535.4	298.9	721.8	280.5
2004			412.8	262.4	624.5	342.0	1,008.3	375.3
2005			615.2	317.9	468.3	258.1	632.0	238.5
2006	364.5	90.4	649.4	399.4	412.2	244.6	521.1	160.7
2007	383.9	98.8	627.6	388.3	641.9	337.7	488.5	242.5
2008	377.1	81.1	554.3	297.1	437.5	200.5	739.6	297.6
2009	349.7	72.5	510.8	302.0	493.6	258.9	541.3	236.4
2010	339.2	81.1	541.4	367.9	596.8	339.9	530.7	241.9
2011	277.8	69.7	558.5	314.7	472.3	259.4	687.5	283.3
2012	313.7	75.6	529.7	387.1	860.7	439.3	468.6	225.0
2013	333.6	82.9	451.3	298.6	678.6	289.4	682.9	293.2
2014	355.8	82.6	448.7	238.7	395.3	230.1	474.4	257.0
2015	365.8	81.4	315.6	173.9	431.1	237.8	524.2	206.2
2016	321.3	74.0	417.4	263.8	502.6	278.1	787.1	250.2
2017	351.3	70.9	395.0	198.4	684.5	298.1	636.0	213.6
2018	346.3	79.3	548.8	272.9	452.4	251.4	692.6	295.4
2019	418.9	75.7	469.8	239.8	333.9	179.2	694.8	286.4
2020								
2021					973.1	310.0		
2022	390.6	80.9	379.5	179.4	202.0	138.7	606.9	231.1
2023	369.1	70.8	495.4	202.1	136.4	82.7	496.0	222.2
2024	437.2	96.7	373.9	177.8	673.8	250.6	444.9	140.9
2025	416.6	81.3	474.5	265.6	142.3	88.0	417.5	163.5

[a] Species composition for the total duck estimate varies by state.

Table B.2. Continued.

	Nevada[b]	Oregon		Washington		Wisconsin	
Year	Mallard	Total duck	Mallard	Total duck	Mallard	Total duck	Mallard
1959	2.1						
1960	2.1						
1961	2.0						
1962	1.7						
1963	2.2						
1964	3.0						
1965	3.5						
1966	3.4						
1967	1.5						
1968	1.2						
1969	1.4						
1970	1.5						
1971	1.1						
1972	0.9						
1973	0.7					412.7	107.0
1974	0.7					435.2	94.3
1975	0.6					426.9	120.5
1976	0.6					379.5	109.9
1977	1.0					323.3	91.7
1978	0.6					271.3	61.6
1979	0.6					265.7	78.6
1980	0.9					248.1	116.5
1981	1.6					505.0	142.8
1982	1.1					218.7	89.5
1983	1.5					202.3	119.5
1984	1.4					210.0	104.8
1985	1.5					192.8	73.9
1986	1.3					262.0	110.8
1987	1.5					389.8	136.9
1988	1.3					287.1	148.9
1989	1.3					462.5	180.7
1990	1.3					328.6	151.4
1991	1.4					435.8	172.4
1992	0.9					683.8	249.7
1993	1.2					379.4	174.5
1994	1.4	322.8	116.4			571.2	283.4
1995	1.0	216.2	77.8			592.4	242.2
1996	1.7	289.2	102.7			536.3	314.4
1997	2.5	360.1	121.8			409.3	181.0
1998	2.1	345.7	126.0			412.8	186.9
1999	2.3	320.6	126.1			476.6	248.4

Table B.2. Continued.

	Nevada[b]	Oregon		Washington		Wisconsin	
Year	Mallard	Total duck	Mallard	Total duck	Mallard	Total duck	Mallard
2000	2.1	309.7	105.9			744.4	454.0
2001	2.0					440.1	183.5
2002	0.7	260.4	103.5			740.8	378.5
2003	1.7	244.3	87.9			533.5	261.3
2004	1.7	226.9	82.5			651.5	229.2
2005	0.7	207.8	74.1			724.3	317.2
2006	1.8	248.5	81.1			522.6	219.5
2007	2.1	318.2	92.4			470.6	210.2
2008	1.9	220.7	75.4			626.9	188.4
2009	12.7	182.5	72.6			502.4	200.5
2010	8.9	204.7	66.8	200.1	92.9	386.5	199.1
2011	2.3	155.9	61.6	155.0	71.4	513.7	187.9
2012	4.1	260.0	88.8	167.3	89.5	521.1	196.9
2013	8.8	250.6	84.3	156.1	74.4	527.3	181.2
2014	4.2	313.0	85.3	172.8	86.3	395.1	158.7
2015	5.5	278.5	87.4	191.3	86.4	372.8	176.2
2016	14.4	213.3	87.3	119.0	59.9	390.5	164.1
2017	6.3	238.9	71.7	239.0	103.4	479.1	180.9
2018	13.9	293.5	97.1	277.3	124.9	439.4	216.7
2019	10.0	251.0	83.9	244.0	126.2	413.7	204.3
2020							
2021		260.1	76.3			585.0	147.4
2022		344.0	79.4	215.2	87.4	647.1	185.6
2023		197.5	68.6	201.8	102.0	431.1	166.7
2024		302.1	71.0	156.0	86.4	375.1	117.7
2025		267.2	79.5	156.1	77.0	547.4	149.1

[b] Survey redesigned in 2009, and not comparable with previous years.

Table B.3. Breeding population estimates and standard errors (in thousands) for 10 species of ducks from the traditional survey area (strata 1–18, 20–50, 75–77), 1955–2025.

	Mallard		Gadwall		American wigeon		Green-winged teal		Blue-winged teal	
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$
1955	8,777.3	457.1	651.5	149.5	3,216.8	297.8	1,807.2	291.5	5,305.2	567.6
1956	10,452.7	461.8	772.6	142.4	3,145.0	227.8	1,525.3	236.2	4,997.6	527.6
1957	9,296.9	443.5	666.8	148.2	2,919.8	291.5	1,102.9	161.2	4,299.5	467.3
1958	11,234.2	555.6	502.0	89.6	2,551.7	177.9	1,347.4	212.2	5,456.6	483.7
1959	9,024.3	466.6	590.0	72.7	3,787.7	339.2	2,653.4	459.3	5,099.3	332.7
1960	7,371.7	354.1	784.1	68.4	2,987.6	407.0	1,426.9	311.0	4,293.0	294.3
1961	7,330.0	510.5	654.8	77.5	3,048.3	319.9	1,729.3	251.5	3,655.3	298.7
1962	5,535.9	426.9	905.1	87.0	1,958.7	145.4	722.9	117.6	3,011.1	209.8
1963	6,748.8	326.8	1,055.3	89.5	1,830.8	169.9	1,242.3	226.9	3,723.6	323.0
1964	6,063.9	385.3	873.4	73.7	2,589.6	259.7	1,561.3	244.7	4,020.6	320.4
1965	5,131.7	274.8	1,260.3	114.8	2,301.1	189.4	1,282.0	151.0	3,594.5	270.4
1966	6,731.9	311.4	1,680.4	132.4	2,318.4	139.2	1,617.3	173.6	3,733.2	233.6
1967	7,509.5	338.2	1,384.6	97.8	2,325.5	136.2	1,593.7	165.7	4,491.5	305.7
1968	7,089.2	340.8	1,949.0	213.9	2,298.6	156.1	1,430.9	146.6	3,462.5	389.1
1969	7,531.6	280.2	1,573.4	100.2	2,941.4	168.6	1,491.0	103.5	4,138.6	239.5
1970	9,985.9	617.2	1,608.1	123.5	3,469.9	318.5	2,182.5	137.7	4,861.8	372.3
1971	9,416.4	459.5	1,605.6	123.0	3,272.9	186.2	1,889.3	132.9	4,610.2	322.8
1972	9,265.5	363.9	1,622.9	120.1	3,200.1	194.1	1,948.2	185.8	4,278.5	230.5
1973	8,079.2	377.5	1,245.6	90.3	2,877.9	197.4	1,949.2	131.9	3,332.5	220.3
1974	6,880.2	351.8	1,592.4	128.2	2,672.0	159.3	1,864.5	131.2	4,976.2	394.6
1975	7,726.9	344.1	1,643.9	109.0	2,778.3	192.0	1,664.8	148.1	5,885.4	337.4
1976	7,933.6	337.4	1,244.8	85.7	2,505.2	152.7	1,547.5	134.0	4,744.7	294.5
1977	7,397.1	381.8	1,299.0	126.4	2,575.1	185.9	1,285.8	87.9	4,462.8	328.4
1978	7,425.0	307.0	1,558.0	92.2	3,282.4	208.0	2,174.2	219.1	4,498.6	293.3
1979	7,883.4	327.0	1,757.9	121.0	3,106.5	198.2	2,071.7	198.5	4,875.9	297.6
1980	7,706.5	307.2	1,392.9	98.8	3,595.5	213.2	2,049.9	140.7	4,895.1	295.6
1981	6,409.7	308.4	1,395.4	120.0	2,946.0	173.0	1,910.5	141.7	3,720.6	242.1
1982	6,408.5	302.2	1,633.8	126.2	2,458.7	167.3	1,535.7	140.2	3,657.6	203.7
1983	6,456.0	286.9	1,519.2	144.3	2,636.2	181.4	1,875.0	148.0	3,366.5	197.2
1984	5,415.3	258.4	1,515.0	125.0	3,002.2	174.2	1,408.2	91.5	3,979.3	267.6
1985	4,960.9	234.7	1,303.0	98.2	2,050.7	143.7	1,475.4	100.3	3,502.4	246.3
1986	6,124.2	241.6	1,547.1	107.5	1,736.5	109.9	1,674.9	136.1	4,478.8	237.1
1987	5,789.8	217.9	1,305.6	97.1	2,012.5	134.3	2,006.2	180.4	3,528.7	220.2
1988	6,369.3	310.3	1,349.9	121.1	2,211.1	139.1	2,060.8	188.3	4,011.1	290.4
1989	5,645.4	244.1	1,414.6	106.6	1,972.9	106.0	1,841.7	166.4	3,125.3	229.8
1990	5,452.4	238.6	1,672.1	135.8	1,860.1	108.3	1,789.5	172.7	2,776.4	178.7
1991	5,444.6	205.6	1,583.7	111.8	2,254.0	139.5	1,557.8	111.3	3,763.7	270.8
1992	5,976.1	241.0	2,032.8	143.4	2,208.4	131.9	1,773.1	123.7	4,333.1	263.2
1993	5,708.3	208.9	1,755.2	107.9	2,053.0	109.3	1,694.5	112.7	3,192.9	205.6
1994	6,980.1	282.8	2,318.3	145.2	2,382.2	130.3	2,108.4	152.2	4,616.2	259.2
1995	8,269.4	287.5	2,835.7	187.5	2,614.5	136.3	2,300.6	140.3	5,140.0	253.3
1996	7,941.3	262.9	2,984.0	152.5	2,271.7	125.4	2,499.5	153.4	6,407.4	353.9

Table B.3. Continued.

	Mallard		Gadwall		American wigeon		Green-winged teal		Blue-winged teal	
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$
1997	9,939.7	308.5	3,897.2	264.9	3,117.6	161.6	2,506.6	142.5	6,124.3	330.7
1998	9,640.4	301.6	3,742.2	205.6	2,857.7	145.3	2,087.3	138.9	6,398.8	332.3
1999	10,805.7	344.5	3,235.5	163.8	2,920.1	185.5	2,631.0	174.6	7,149.5	364.5
2000	9,470.2	290.2	3,158.4	200.7	2,733.1	138.8	3,193.5	200.1	7,431.4	425.0
2001	7,904.0	226.9	2,679.2	136.1	2,493.5	149.6	2,508.7	156.4	5,757.0	288.8
2002	7,503.7	246.5	2,235.4	135.4	2,334.4	137.9	2,333.5	143.8	4,206.5	227.9
2003	7,949.7	267.3	2,549.0	169.9	2,551.4	156.9	2,678.5	199.7	5,518.2	312.7
2004	7,425.3	282.0	2,589.6	165.6	1,981.3	114.9	2,460.8	145.2	4,073.0	238.0
2005	6,755.3	280.8	2,179.1	131.0	2,225.1	139.2	2,156.9	125.8	4,585.5	236.3
2006	7,276.5	223.7	2,824.7	174.2	2,171.2	115.7	2,587.2	155.3	5,859.6	303.5
2007	8,307.3	285.8	3,355.9	206.2	2,806.8	152.0	2,890.3	196.1	6,707.6	362.2
2008	7,723.8	256.8	2,727.7	158.9	2,486.6	151.3	2,979.7	194.4	6,640.1	337.3
2009	8,512.4	248.3	3,053.5	166.3	2,468.6	135.4	3,443.6	219.9	7,383.8	396.8
2010	8,430.1	284.9	2,976.7	161.6	2,424.6	131.5	3,475.9	207.2	6,328.5	382.6
2011	9,182.6	267.8	3,256.9	196.9	2,084.0	110.1	2,900.1	170.7	8,948.5	418.2
2012	10,601.5	324.0	3,585.6	208.7	2,145.0	145.6	3,471.2	207.9	9,242.3	425.1
2013	10,371.9	360.6	3,351.4	204.5	2,644.3	169.2	3,053.4	173.7	7,731.7	363.2
2014	10,899.8	347.6	3,811.0	206.0	3,116.7	190.4	3,439.9	247.4	8,541.5	461.9
2015	11,643.3	361.8	3,834.1	219.4	3,037.0	199.2	4,080.9	269.8	8,547.3	401.1
2016	11,792.5	367.4	3,712.0	197.3	3,411.3	196.4	4,275.4	329.8	6,689.4	340.1
2017	10,488.5	333.9	4,180.0	209.0	2,777.1	156.0	3,605.3	233.3	7,888.9	395.8
2018	9,255.2	298.9	2,885.9	161.7	2,820.4	166.5	3,042.7	213.9	6,450.5	307.7
2019	9,423.4	284.5	3,258.7	173.5	2,832.1	215.8	3,178.2	184.4	5,427.6	318.8
2020	No Survey									
2021										
2022	7,434.3	243.3	2,684.7	135.3	2,186.9	128.7	2,150.9	178.2	6,491.1	337.5
2023	6,125.7	206.1	2,561.4	145.1	1,889.7	173.3	2,502.6	284.0	5,250.3	297.0
2024	6,609.3	253.8	2,284.4	124.6	2,922.0	219.1	3,005.5	210.2	4,599.0	233.7
2025	6,553.6	261.9	2,413.9	115.1	3,191.1	273.0	2,550.2	222.4	4,431.7	225.2

Table B.3. Continued.

	Northern shoveler		Northern pintail		Redhead		Canvasback		Scaup	
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$
1955	1,642.8	218.7	9,775.1	656.1	539.9	98.9	589.3	87.8	5,620.1	582.1
1956	1,781.4	196.4	10,372.8	694.4	757.3	119.3	698.5	93.3	5,994.1	434.0
1957	1,476.1	181.8	6,606.9	493.4	509.1	95.7	626.1	94.7	5,766.9	411.7
1958	1,383.8	185.1	6,037.9	447.9	457.1	66.2	746.8	96.1	5,350.4	355.1
1959	1,577.6	301.1	5,872.7	371.6	498.8	55.5	488.7	50.6	7,037.6	492.3
1960	1,824.5	130.1	5,722.2	323.2	497.8	67.0	605.7	82.4	4,868.6	362.5
1961	1,383.0	166.5	4,218.2	496.2	323.3	38.8	435.3	65.7	5,380.0	442.2
1962	1,269.0	113.9	3,623.5	243.1	507.5	60.0	360.2	43.8	5,286.1	426.4
1963	1,398.4	143.8	3,846.0	255.6	413.4	61.9	506.2	74.9	5,438.4	357.9
1964	1,718.3	240.3	3,291.2	239.4	528.1	67.3	643.6	126.9	5,131.8	386.1
1965	1,423.7	114.1	3,591.9	221.9	599.3	77.7	522.1	52.8	4,640.0	411.2
1966	2,147.0	163.9	4,811.9	265.6	713.1	77.6	663.1	78.0	4,439.2	356.2
1967	2,314.7	154.6	5,277.7	341.9	735.7	79.0	502.6	45.4	4,927.7	456.1
1968	1,684.5	176.8	3,489.4	244.6	499.4	53.6	563.7	101.3	4,412.7	351.8
1969	2,156.8	117.2	5,903.9	296.2	633.2	53.6	503.5	53.7	5,139.8	378.5
1970	2,230.4	117.4	6,392.0	396.7	622.3	64.3	580.1	90.4	5,662.5	391.4
1971	2,011.4	122.7	5,847.2	368.1	534.4	57.0	450.7	55.2	5,143.3	333.8
1972	2,466.5	182.8	6,979.0	364.5	550.9	49.4	425.9	46.0	7,997.0	718.0
1973	1,619.0	112.2	4,356.2	267.0	500.8	57.7	620.5	89.1	6,257.4	523.1
1974	2,011.3	129.9	6,598.2	345.8	626.3	70.8	512.8	56.8	5,780.5	409.8
1975	1,980.8	106.7	5,900.4	267.3	831.9	93.5	595.1	56.1	6,460.0	486.0
1976	1,748.1	106.9	5,475.6	299.2	665.9	66.3	614.4	70.1	5,818.7	348.7
1977	1,451.8	82.1	3,926.1	246.8	634.0	79.9	664.0	74.9	6,260.2	362.8
1978	1,975.3	115.6	5,108.2	267.8	724.6	62.2	373.2	41.5	5,984.4	403.0
1979	2,406.5	135.6	5,376.1	274.4	697.5	63.8	582.0	59.8	7,657.9	548.6
1980	1,908.2	119.9	4,508.1	228.6	728.4	116.7	734.6	83.8	6,381.7	421.2
1981	2,333.6	177.4	3,479.5	260.5	594.9	62.0	620.8	59.1	5,990.9	414.2
1982	2,147.6	121.7	3,708.8	226.6	616.9	74.2	513.3	50.9	5,532.0	380.9
1983	1,875.7	105.3	3,510.6	178.1	711.9	83.3	526.6	58.9	7,173.8	494.9
1984	1,618.2	91.9	2,964.8	166.8	671.3	72.0	530.1	60.1	7,024.3	484.7
1985	1,702.1	125.7	2,515.5	143.0	578.2	67.1	375.9	42.9	5,098.0	333.1
1986	2,128.2	112.0	2,739.7	152.1	559.6	60.5	438.3	41.5	5,235.3	355.5
1987	1,950.2	118.4	2,628.3	159.4	502.4	54.9	450.1	77.9	4,862.7	303.8
1988	1,680.9	210.4	2,005.5	164.0	441.9	66.2	435.0	40.2	4,671.4	309.5
1989	1,538.3	95.9	2,111.9	181.3	510.7	58.5	477.4	48.4	4,342.1	291.3
1990	1,759.3	118.6	2,256.6	183.3	480.9	48.2	539.3	60.3	4,293.1	264.9
1991	1,716.2	104.6	1,803.4	131.3	445.6	42.1	491.2	66.4	5,254.9	364.9
1992	1,954.4	132.1	2,098.1	161.0	595.6	69.7	481.5	97.3	4,639.2	291.9
1993	2,046.5	114.3	2,053.4	124.2	485.4	53.1	472.1	67.6	4,080.1	249.4
1994	2,912.0	141.4	2,972.3	188.0	653.5	66.7	525.6	71.1	4,529.0	253.6
1995	2,854.9	150.3	2,757.9	177.6	888.5	90.6	770.6	92.2	4,446.4	277.6
1996	3,449.0	165.7	2,735.9	147.5	834.2	83.1	848.5	118.3	4,217.4	234.5
1997	4,120.4	194.0	3,558.0	194.2	918.3	77.2	688.8	57.2	4,112.3	224.2

Table B.3. Continued.

	Northern shoveler		Northern pintail		Redhead		Canvasback		Scaup	
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$
1998	3,183.2	156.5	2,520.6	136.8	1,005.1	122.9	685.9	63.8	3,471.9	191.2
1999	3,889.5	202.1	3,057.9	230.5	973.4	69.5	716.0	79.1	4,411.7	227.9
2000	3,520.7	197.9	2,907.6	170.5	926.3	78.1	706.8	81.0	4,026.3	205.3
2001	3,313.5	166.8	3,296.0	266.6	712.0	70.2	579.8	52.7	3,694.0	214.9
2002	2,318.2	125.6	1,789.7	125.2	564.8	69.0	486.6	43.8	3,524.1	210.3
2003	3,619.6	221.4	2,558.2	174.8	636.8	56.6	557.6	48.0	3,734.4	225.5
2004	2,810.4	163.9	2,184.6	155.2	605.3	51.5	617.2	64.6	3,807.2	202.3
2005	3,591.5	178.6	2,560.5	146.8	592.3	51.7	520.6	52.9	3,386.9	196.4
2006	3,680.2	236.5	3,386.4	198.7	916.3	86.1	691.0	69.6	3,246.7	166.9
2007	4,552.8	247.5	3,335.3	160.4	1,009.0	84.7	864.9	86.2	3,452.2	195.3
2008	3,507.8	168.4	2,612.8	143.0	1,056.0	120.4	488.7	45.4	3,738.3	220.1
2009	4,376.3	224.1	3,225.0	166.9	1,044.1	106.3	662.1	57.4	4,172.1	232.3
2010	4,057.4	198.4	3,508.6	216.4	1,064.2	99.5	585.2	50.8	4,244.4	247.9
2011	4,641.0	232.8	4,428.6	267.9	1,356.1	128.3	691.6	46.0	4,319.3	261.1
2012	5,017.6	254.2	3,473.1	192.4	1,269.9	99.2	759.9	68.5	5,238.6	296.8
2013	4,751.0	202.3	3,335.0	188.4	1,202.2	90.5	787.0	57.6	4,165.7	250.8
2014	5,278.9	265.3	3,220.3	179.7	1,278.7	102.5	685.3	50.7	4,611.1	253.3
2015	4,391.4	219.0	3,043.0	182.5	1,195.9	92.9	757.3	63.3	4,395.3	252.5
2016	3,966.9	189.0	2,618.5	204.2	1,288.8	115.4	736.5	68.8	4,991.7	297.6
2017	4,353.1	202.3	2,889.2	206.2	1,115.4	91.8	732.5	61.7	4,371.7	228.7
2018	4,207.9	196.5	2,365.3	150.2	999.0	85.3	686.1	59.1	3,989.3	212.5
2019	3,649.2	169.0	2,268.5	123.3	732.2	63.7	651.9	49.1	3,590.8	207.0
2020										
2021					No Survey					
2022	3,036.3	167.1	1,783.6	150.1	1,066.6	87.1	586.6	50.6	3,655.1	223.8
2023	2,858.4	165.1	2,218.5	148.3	929.9	80.6	618.9	63.9	3,517.1	211.7
2024	2,645.8	125.0	1,975.0	146.1	782.0	64.8	566.3	52.3	4,069.1	231.8
2025	2,758.2	164.4	2,238.8	167.8	918.2	77.9	690.2	60.0	3,675.5	206.0

Table B.4. Total breeding duck estimates for the traditional survey area, in thousands.

	Traditional Survey Area[a]	
Year	$\widehat{N}$	$\widehat{SE}$
1955	39,603.6	1,264.0
1956	42,035.2	1,177.3
1957	34,197.1	1,016.6
1958	36,528.1	1,013.6
1959	40,089.9	1,103.6
1960	32,080.5	876.8
1961	29,829.0	1,009.0
1962	25,038.9	740.6
1963	27,609.5	736.6
1964	27,768.8	827.5
1965	25,903.1	694.4
1966	30,574.2	689.5
1967	32,688.6	796.1
1968	28,971.2	789.4
1969	33,760.9	674.6
1970	39,676.3	1,008.1
1971	36,905.1	821.8
1972	40,748.0	987.1
1973	32,573.9	805.3
1974	35,422.5	819.5
1975	37,792.8	836.2
1976	34,342.3	707.8
1977	32,049.0	743.8
1978	35,505.6	745.4
1979	38,622.0	843.4
1980	36,224.4	737.9
1981	32,267.3	734.9
1982	30,784.0	678.8
1983	32,635.2	725.8
1984	31,004.9	716.5
1985	25,638.3	574.9
1986	29,092.8	609.3
1987	27,412.1	562.1
1988	27,361.7	660.8
1989	25,112.8	555.4
1990	25,079.2	539.9
1991	26,605.6	588.7
1992	29,417.9	605.6
1993	26,312.4	493.9
1994	32,523.5	598.2
1995	35,869.6	629.4
1996	37,753.0	779.6

Table B.4. Continued.

Year	Traditional Survey Area[a]	
	$\widehat{N}$	$\widehat{SE}$
1997	42,556.3	718.9
1998	39,081.9	652.0
1999	43,435.8	733.9
2000	41,838.3	740.2
2001	36,177.5	633.1
2002	31,181.1	547.8
2003	36,225.1	664.7
2004	32,164.0	579.8
2005	31,734.9	555.2
2006	36,160.3	614.4
2007	41,172.2	724.8
2008	37,276.5	638.3
2009	42,004.8	701.9
2010	40,893.8	718.4
2011	45,554.3	766.5
2012	48,575.3	796.8
2013	45,607.3	749.8
2014	49,152.2	831.1
2015	49,521.7	812.1
2016	48,362.8	827.6
2017	47,265.6	773.6
2018	41,193.2	662.1
2019	38,898.9	658.3
2020	No Survey	
2021		
2022	34,657.2	613.6
2023	32,304.8	633.0
2024	33,988.1	610.7
2025	33,980.4	643.3

[a] Total ducks in the traditional survey area include species in Appendix B.3 plus American black ducks, ring-necked duck, goldeneyes, bufflehead, and ruddy duck.

Table B.5. Breeding population estimates and 90% credibility intervals (in thousands) for the six most abundant species of ducks in the eastern survey area, 1998–2025[a].

	Mallard		American black duck		Green-winged teal		Ring-necked duck		Goldeneyes[b]		Mergansers[c]	
Year	$\hat{N}$	90% CI	$\hat{N}$	90% CI	$\hat{N}$	90% CI	$\hat{N}$	90% CI	$\hat{N}$	90% CI	$\hat{N}$	90% CI
1998	1,484.6	(1,330.3, 1,698.2)	781.4	(698.9, 885.2)	296.8	(240.1, 385.6)	607.2	(498.1, 776.9)	647.3	(494.5, 927.1)	757.0	(646.3, 895.3)
1999	1,481.5	(1,326.6, 1,698.7)	754.5	(684.5, 841.5)	384.6	(314.6, 484.7)	729.5	(595.3, 942.8)	739.3	(567.1, 1,009.4)	741.8	(641.5, 866.4)
2000	1,394.7	(1,252.3, 1,593.1)	666.6	(612.2, 730.0)	352.3	(291.8, 438.2)	955.3	(729.9, 1,430.3)	699.5	(531.8, 988.0)	778.7	(677.6, 903.7)
2001	1,417.1	(1,269.8, 1,624.1)	648.6	(588.1, 722.6)	294.9	(241.9, 372.1)	690.3	(570.7, 865.4)	857.5	(646.0, 1,226.1)	711.3	(619.2, 824.4)
2002	1,399.8	(1,254.6, 1,602.6)	771.9	(697.9, 862.9)	397.2	(326.0, 495.5)	710.3	(590.8, 873.4)	935.2	(681.9, 1,360.9)	1,012.1	(882.7, 1,172.0)
2003	1,362.5	(1,215.8, 1,572.5)	729.7	(654.3, 830.9)	387.3	(315.0, 495.0)	699.6	(589.5, 845.6)	724.5	(541.3, 1,057.4)	887.0	(769.0, 1,033.8)
2004	1,391.2	(1,239.8, 1,610.4)	753.5	(671.2, 861.9)	453.2	(369.0, 578.4)	779.9	(644.0, 988.4)	676.4	(525.5, 929.1)	890.9	(777.1, 1,029.7)
2005	1,343.9	(1,193.6, 1,559.6)	668.8	(602.9, 748.4)	334.8	(272.6, 429.6)	649.6	(548.6, 780.5)	582.9	(459.2, 789.2)	873.2	(758.8, 1,014.5)
2006	1,281.7	(1,143.3, 1,480.8)	715.2	(644.1, 805.5)	326.3	(264.9, 417.3)	674.3	(566.2, 820.9)	514.8	(402.3, 704.4)	786.5	(683.1, 914.1)
2007	1,331.0	(1,176.6, 1,554.8)	778.3	(708.2, 859.7)	430.5	(338.4, 600.5)	875.8	(738.4, 1,057.2)	724.9	(556.5, 995.8)	920.0	(796.0, 1,073.9)
2008	1,300.3	(1,149.6, 1,521.0)	690.6	(620.5, 779.0)	403.0	(320.9, 527.1)	688.3	(570.8, 859.8)	708.6	(547.8, 968.5)	819.7	(713.3, 950.5)
2009	1,300.9	(1,145.3, 1,529.0)	708.6	(624.4, 823.4)	425.9	(341.4, 559.7)	709.5	(585.7, 891.5)	603.5	(463.5, 845.9)	839.6	(729.8, 976.6)
2010	1,168.3	(1,037.9, 1,357.9)	626.0	(561.3, 710.4)	410.3	(327.4, 546.7)	708.9	(591.3, 873.7)	622.2	(475.1, 879.9)	687.8	(596.2, 798.4)
2011	1,238.8	(1,090.5, 1,457.2)	672.6	(592.2, 783.0)	391.4	(309.8, 527.5)	624.4	(525.0, 761.5)	588.3	(454.6, 828.5)	750.0	(649.3, 873.1)
2012	1,212.4	(1,071.0, 1,416.1)	710.2	(635.1, 805.5)	357.3	(288.5, 469.2)	643.6	(536.6, 802.4)	628.5	(472.4, 931.5)	823.1	(715.6, 953.8)
2013	1,309.3	(1,133.7, 1,575.4)	709.7	(625.1, 833.7)	397.7	(318.9, 531.0)	776.6	(637.0, 1,002.2)	724.8	(558.3, 1,047.8)	796.2	(674.9, 958.8)
2014	1,217.7	(1,068.5, 1,438.2)	708.5	(631.6, 810.5)	299.9	(241.3, 395.1)	614.6	(512.8, 755.8)	612.5	(450.1, 954.6)	738.6	(641.9, 855.3)
2015	1,154.4	(1,017.6, 1,355.9)	690.7	(599.8, 821.8)	308.4	(247.5, 405.9)	723.5	(581.2, 971.8)	465.8	(358.4, 659.4)	757.8	(658.6, 879.2)
2016	1,151.2	(1,011.4, 1,357.3)	751.6	(657.6, 885.7)	317.9	(252.7, 422.9)	741.6	(612.0, 929.1)	563.5	(422.7, 840.7)	813.8	(704.8, 948.2)
2017	1,170.9	(1,022.0, 1,390.6)	616.7	(548.4, 705.7)	337.6	(273.7, 430.7)	618.7	(507.0, 794.1)	643.1	(489.0, 924.7)	943.3	(817.7, 1,097.8)
2018	1,093.3	(960.8, 1,288.6)	571.3	(516.8, 637.7)	335.4	(270.4, 433.4)	638.9	(528.8, 809.6)	513.7	(394.4, 736.3)	885.9	(771.3, 1,026.4)
2019	1,071.8	(942.9, 1,261.5)	598.9	(536.0, 678.2)	301.1	(240.4, 395.5)	722.2	(571.6, 1,011.1)	484.8	(349.8, 781.3)	872.0	(755.6, 1,011.0)
2020	No Survey											
2021												
2022	1,265.5	(1,073.9, 1,561.4)	685.4	(614.9, 780.9)	334.4	(271.7, 428.2)	684.7	(574.0, 838.0)	643.6	(505.8, 875.0)	1,019.6	(876.1, 1,204.0)
2023	1,209.2	(1,036.8, 1,467.7)	743.0	(669.1, 833.6)	385.8	(298.8, 548.3)	663.9	(549.9, 837.9)	825.7	(638.1, 1,121.6)	1,045.9	(910.1, 1,213.8)
2024	1,142.4	(983.7, 1,380.7)	839.7	(747.4, 964.8)	451.6	(364.3, 583.3)	695.2	(583.6, 850.1)	974.3	(745.2, 1,343.5)	1,078.9	(937.9, 1,249.9)
2025	1,137.1	(984.4, 1,365.0)	791.4	(701.1, 919.9)	341.5	(273.5, 449.9)	755.7	(618.6, 987.9)	721.7	(547.4, 1,045.5)	1,089.8	(945.7, 1,269.7)

[a] Estimates for the six most abundant species in the eastern survey area. Estimates for black ducks, green-winged teal, ring-necked ducks, goldeneye, and mergansers are at the eastern survey scale (strata 51–53, 56, 62–72) and mallards are at the eastern North America scale (eastern survey area plus northeastern states from Virginia north to New Hampshire.)

[b] Common and Barrow's.

[c] Common, red-breasted, and hooded.

C. Historical estimates of goose and swan populations

Table C.1. Abundance indices (in thousands) for North American Canada and cackling goose populations, 1969–2025.

	North Atlantic[a,b]		Atlantic[a,b]		Atlantic Flyway Resident[a]		Southern Hudson Bay[a]		Mississippi Flyway Giant[a]
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$
1969/70									
1970/71									
1971/72									
1972/73									
1973/74									
1974/75									
1975/76									
1976/77									
1977/78									
1978/79									
1979/80									
1980/81									
1981/82									
1982/83									
1983/84									
1984/85									
1985/86									
1986/87									
1987/88									
1988/89									
1989/90	44.7	9.1							
1990/91	45.3	9.2							
1991/92	41.6	8.6							
1992/93	50.8	10.7	93.0	12.5	647.5	111.8			705.5
1993/94	47.5	9.5	43.2	4.0	648.7	73.0			758.6
1994/95	45.8	9.3	34.0	3.0	780.0	98.8			818.0
1995/96	60.4	12.1	51.5	4.8	932.7	107.4			1,065.8
1996/97	55.9	10.4	72.1	6.6	1,013.3	132.5			926.1
1997/98	51.4	9.3	48.6	4.5	970.1	115.7			1,035.7
1998/99	62.1	11.7	83.7	7.6	999.5	120.8			1,193.5
1999/00	51.8	9.3	95.8	8.4	1,022.3	101.9			1,412.4
2000/01	52.0	9.5	135.2	12.5	1,016.6	89.3			1,178.0
2001/02	51.4	9.2	182.4	17.6	1,097.1	95.1			1,248.0
2002/03	48.8	8.9	174.9	17.2	1,126.7	94.5			1,408.3
2003/04	54.5	10.0	191.8	19.2	1,073.1	93.8			1,177.2
2004/05	46.9	8.6	175.7	16.7	1,167.1	102.3			1,158.9
2005/06	48.5	8.7	186.1	20.0	1,144.0	106.2			1,356.5
2006/07	53.1	9.6	207.3	21.1	1,128.0	94.5			1,272.5

Table C.1. Continued.

Year	North Atlantic[a,b]		Atlantic[a,b]		Atlantic Flyway Resident[a]		Southern Hudson Bay[a]		Mississippi Flyway Giant[a]
	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$
2007/08	48.9	8.7	174.0	18.2	1,024.9	82.1			1,272.5
2008/09	51.4	9.1	186.8	19.7	1,006.1	74.8			1,312.7
2009/10	49.5	8.7	165.1	17.5	969.9	92.1			1,421.5
2010/11	52.2	9.4	216.0	23.2	1,015.1	86.5			1,418.8
2011/12	52.6	9.4	190.3	20.4	879.8	71.6			1,452.7
2012/13	54.4	10.1			951.9	79.1			1,494.8
2013/14	56.3	9.9	191.2	20.0	1,084.9	114.4			1,239.9
2014/15	52.1	9.2	161.3	16.0	963.8	81.7			1,444.5
2015/16	51.7	9.2	196.3	24.9	950.0	80.1	93.2	2.6	1,407.5
2016/17	49.0	8.8	161.1	17.2	933.3	74.0	110.1	3.7	1,528.7
2017/18	54.6	9.6	112.2	11.3	1,030.9	83.2	107.8	3.9	1,566.0
2018/19	52.7	9.1	119.5	12.0	1,039.5	91.3	104.6	3.9	1,441.8
2019/20					1,139.6	105.6			
2020/21					1,014.8	77.0	90.7	3.2	1,605.9
2021/22	50.8	8.7	163.7	16.7	1,018.7	76.4	91.5	3.8	1,547.5
2022/23	49.0	8.5	115.3	12.2	947.5	89.6	95.1	3.5	1,434.2
2023/24	55.3	9.8	88.9	9.1	932.8	72.3	88.7	3.8	1,422.8
2024/25	57.4	10.0	149.8	15.7	1,003.3	90.7			1,431.5

Table C.1. Continued.

Year	W. Prairie & Great Plains[a]		Midcontinent[c]		Hi-line[a]		Western[a]	
	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$
1969/70	80.4	38.8			58.3	39.2		
1970/71	98.9	38.3			99.0	54.3		
1971/72	83.0	38.0			52.4	27.8		
1972/73	78.8	28.2			29.5	12.5		
1973/74	66.8	29.7			32.9	16.2		
1974/75	74.4	28.5			28.0	14.9		
1975/76	99.9	43.7	501.9	108.2	39.3	18.3		
1976/77	94.0	42.0	572.6	182.2	39.4	16.3		
1977/78	227.9	135.4	1,028.0	385.9	38.1	18.8		
1978/79	174.7	92.0	911.2	215.0	48.9	23.2		
1979/80	152.1	69.0			49.3	22.5		
1980/81	184.9	66.2			48.7	19.8		
1981/82	162.1	50.1			52.4	21.3		
1982/83	214.2	86.5			71.5	27.7		
1983/84	182.4	64.2			103.1	40.5		
1984/85	217.7	68.7			89.1	34.6		
1985/86	232.1	81.3			98.2	35.4		
1986/87	235.0	97.1	680.6	352.7	90.6	37.8		
1987/88	338.9	103.3	1,208.1	444.1	126.0	49.3		
1988/89	418.3	136.2	1,662.0	703.8	120.6	49.7		
1989/90	366.3	126.5	1,419.4	338.5	180.9	75.6		
1990/91	318.2	109.6	3,072.1	1,141.9	143.7	55.9		
1991/92	328.1	91.9	1,972.0	541.6	163.8	66.0		
1992/93	346.5	113.1	1,038.7	350.9	153.7	67.0		
1993/94	371.0	124.5	2,244.2	659.5	156.2	57.8		
1994/95	417.7	127.5	1,284.2	459.4	230.3	93.1		
1995/96	451.4	49.8			196.2	24.1		
1996/97	487.3	50.0	3,610.7	1,249.3	203.7	24.1		
1997/98	587.1	63.0	3,222.8	1,247.8	252.0	34.3		
1998/99	702.1	76.8	2,164.2	548.4	196.6	22.3		
1999/00	717.7	61.6	2,885.7	1,045.1	279.3	34.9		
2000/01	704.5	63.8	2,169.3	621.5	252.8	29.0		
2001/02	670.9	54.6	3,104.1	517.3	231.0	26.1		
2002/03	764.1	62.8	2,031.3	319.8	231.5	34.4		
2003/04	797.7	68.5	2,079.4	462.2	200.5	25.6		
2004/05	775.6	65.9	2,680.4	511.4	236.2	25.2		
2005/06	816.1	62.8	2,343.8	430.3	208.0	22.2		
2006/07	979.6	68.3	2,415.4	361.6	298.8	30.5		
2007/08	957.1	66.5	2,168.5	391.2	337.3	38.4		

Table C.1. Continued.

	W. Prairie & Great Plains[a]		Midcontinent[c]		Hi-line[a]		Western[a]	
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$
2008/09	1,049.7	71.8	3,123.4	626.5	298.4	32.5		
2009/10	1,111.1	82.0	3,775.5	739.4	269.5	29.9	279.2	41.4
2010/11	1,309.9	93.4	2,453.6	411.6	265.4	33.6	267.6	41.5
2011/12	1,369.6	109.0	2,846.9	481.9	483.6	64.4	333.2	48.8
2012/13	1,314.7	65.5	3,739.7	670.8	325.5	35.3	366.8	72.1
2013/14	1,183.4	72.8	2,910.3	460.5	275.9	31.5	290.6	36.7
2014/15	1,223.1	75.3	1,668.7	270.6	368.5	36.6	390.2	53.9
2015/16	1,517.7	91.2	2,715.7	470.0	453.9	50.8	469.9	57.2
2016/17	1,352.8	84.8	2,392.2	387.3	374.6	35.4	402.9	62.1
2017/18	1,349.7	85.2	2,398.5	359.5	409.2	33.4	489.2	66.2
2018/19	1,443.4	94.4	1,867.2	301.0	374.9	33.5	403.3	57.8
2019/20								
2020/21								
2021/22	1,783.0	107.5	1,500.8	193.8	492.7	56.5	470.3	59.8
2022/23	1,028.1	68.6	1,734.1	233.0	324.8	34.1	387.0	66.7
2023/24	1,127.7	75.7			329.0	38.0	320.3	48.2
2024/25	1,168.0	92.0			331.2	32.3	425.4	70.0

[a] Surveys conducted in spring.
[b] Number of breeding pairs.
[c] Lincoln estimates of adults.
[d] Fall-winter indices

Table C.1. Continued.

	Dusky[a]		Cackling/minima[d]		Lesser[a]		Taverner's[a]		Aleutian[d]	
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$
1969/70					12.7	5.1				
1970/71					8.2	3.3				
1971/72					3.4	1.2				
1972/73					6.4	1.3				
1973/74					21.2	14.6				
1974/75					6.9	1.7			0.8	
1975/76					3.0	0.8			0.9	
1976/77					4.7	1.3			1.3	
1977/78					6.9	2.2			1.5	
1978/79					6.5	1.8			1.6	
1979/80					12.9	3.3			1.7	
1980/81					18.4	3.9			2.0	
1981/82					16.0	5.1			2.7	
1982/83					3.4	1.1			3.5	
1983/84					13.8	4.3			3.8	
1984/85			61.3	5.2	9.6	3.3			4.2	
1985/86	16.6	2.8	54.4	4.2	6.7	2.6			4.3	
1986/87	14.8	1.8	59.0	4.8	4.6	1.2			5.0	
1987/88	15.1	1.6	79.8	5.9	6.8	1.4			5.4	
1988/89	16.9	1.7	83.4	5.9	7.1	2.1			5.8	
1989/90	15.2	1.9	104.4	7.9	11.7	3.8			6.3	
1990/91	10.3	1.3	97.5	7.2	4.3	1.9			7.0	
1991/92	16.6	1.6	147.4	10.1	9.1	4.5			7.7	
1992/93	15.2	1.4	151.1	9.8	5.9	1.5			11.7	
1993/94	14.9	1.4	211.5	12.9	16.7	4.9			15.7	
1994/95	12.1	1.2	229.7	14.6	9.6	2.8			19.1	
1995/96	11.8	1.0	246.1	17.0	7.7	2.5			15.5	0.6
1996/97	13.2	1.2	286.8	17.5	5.0	1.1			20.4	0.8
1997/98	14.9	1.3	207.5	14.1	5.7	1.9			32.5	1.1
1998/99	10.5	0.9	229.6	15.4	5.7	2.2			35.6	3.1
1999/00	10.2	0.9	240.7	15.3	9.3	4.3			34.3	1.3
2000/01	11.3	1.0	253.0	16.9	6.1	1.9				
2001/02	12.9	1.1	161.9	10.3	4.9	1.3				
2002/03	10.1	0.8	234.4	15.6	6.3	2.2			72.9	2.7
2003/04	11.3	1.0	173.1	11.5	6.3	1.9			110.7	4.3
2004/05	16.9	1.7	216.8	14.2	4.8	1.4			87.2	4.6
2005/06	11.1	1.0	237.3	15.1	4.2	0.9			100.3	4.5
2006/07	10.4	0.9	253.2	15.8	9.5	4.0	55.8	6.3	107.6	7.6
2007/08	9.4	0.8	286.3	18.5	10.3	3.8	51.6	9.9	112.6	6.8

Table C.1. Continued.

	Dusky[a]		Cackling/minima[d]		Lesser[a]		Taverner's[a]		Aleutian[d]	
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$
2008/09	6.8	0.6	227.3	13.7	6.4	2.1	48.9	4.6	84.5	11.9
2009/10	9.4	0.8	277.3	20.4	6.8	2.0	56.9	4.9	106.9	8.5
2010/11	11.6	1.0	181.3	10.8	3.6	2.0	35.9	3.1	101.7	7.0
2011/12	12.9	1.2	203.8	13.6	3.8	1.6	46.3	5.3	132.7	10.1
2012/13			313.9	22.8			27.1	3.6	162.5	14.7
2013/14	14.6	1.3	280.5	20.0	2.8	0.8	42.5	7.0	150.5	13.1
2014/15	18.1	1.6	356.9	25.3	8.6	5.6	41.9	6.7	209.6	18.3
2015/16	15.9	1.5	321.8	19.7	4.4	1.1	50.4	5.7	154.4	13.1
2016/17	12.9	1.2	281.0	17.4	4.0	1.6	46.4	7.1	164.0	18.0
2017/18	12.0	1.0	198.8	12.8	2.0	0.7	44.6	6.4	169.7	14.6
2018/19	18.1	2.5	200.6	13.1	13.1	7.0	42.7	5.1	193.1	25.6
2019/20									122.0	12.1
2020/21	12.9	1.1	198.7	13.4					173.8	16.1
2021/22	13.1	1.1	229.8	15.7	5.0	4.3	46.2	6.6	232.5	28.4
2022/23	9.6	0.9	153.9	10.6			29.7	4.3	186.4	33.1
2023/24	8.2	0.7	124.1	8.2	2.7	1.6	38.3	4.9	160.9	22.9
2024/25	11.8	1.0	124.4	8.3	10.9	4.2	33.6	5.0	204.6	38.3

[a] Surveys conducted in spring.
[b] Number of breeding pairs.
[c] Lincoln estimates of adults.
[d] Fall-winter indices

Table C.2. Abundance indices (in thousands) for light goose (Ross's and snow goose) populations, 1969–2025.

			Snow Goose					
	Ross's goose[a]		Midcontinent[a]		Western Arctic[b]	Wrangel Island[b]	Greater[c]	
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{N}$	$\widehat{N}$	$\widehat{SE}$
1969/70							89.6	
1970/71							123.3	
1971/72							134.8	
1972/73							143.0	
1973/74							165.0	
1974/75							153.8	
1975/76			1,622.0	344.2			165.6	
1976/77			1,809.3	270.2			160.0	
1977/78			2,509.4	327.6			192.6	
1978/79			1,962.5	301.0			170.1	
1979/80					313.7		180.0	
1980/81					114.5	18.1	170.8	
1981/82					443.4		163.0	
1982/83					202.5	24.6	185.0	
1983/84					320.3	24.5	225.4	
1984/85					267.2	23.2	260.0	
1985/86					304.0	35.1	303.5	
1986/87					289.3	29.9	255.0	
1987/88			2,293.4	621.3	285.4	28.6	363.8	
1988/89	123.0	75.9	4,988.8	1,547.7	236.5		363.2	
1989/90	260.5	161.7	2,826.8	800.5	256.5		368.3	
1990/91	184.6	114.1	7,394.6	3,898.3	401.5		352.6	15.7
1991/92	91.5	56.6	7,443.1	2,218.0	386.0	27.9	448.1	20.1
1992/93			4,655.4	1,208.4	359.0		498.4	20.8
1993/94	111.5	44.6	11,167.8	2,959.8	309.1		591.4	26.5
1994/95	436.2	271.3	7,530.2	1,750.7	259.6	39.0	616.6	25.1
1995/96			6,107.6	1,866.6	277.8	35.0	669.1	33.9
1996/97	391.7	98.9	11,771.2	2,963.0	192.7		657.5	28.0
1997/98	740.7	149.6	7,040.1	912.1	223.3	39.4	836.6	49.2
1998/99	708.3	138.2	11,626.3	1,401.1	187.0	40.9	1,008.0	32.3
1999/00	1,167.1	246.4	13,865.8	1,354.2	337.7	24.1	816.5	90.5
2000/01	1,642.9	404.1	15,404.4	1,584.9	371.6	44.9	837.4	31.6
2001/02	1,818.4	288.2	15,164.7	1,596.8	247.6	41.0	725.0	28.0
2002/03	1,133.1	189.6	11,464.5	1,200.6	330.7	53.6	721.0	28.2
2003/04	1,658.6	235.3	15,389.2	1,462.2	332.8	58.2	890.0	41.4
2004/05	1,385.0	171.3	15,527.8	1,515.3	441.0	57.7	880.0	30.2
2005/06	1,403.6	156.8	13,541.5	1,368.4	413.1	53.9	938.0	40.2
2006/07	2,586.0	333.7	17,620.4	1,640.4	478.0	65.5	838.0	38.1
2007/08	3,072.5	400.0	18,365.9	1,971.6	659.5	74.2	718.0	104.1

Table C.2. continued.

			Snow Goose					
	Ross's goose[a]		Midcontinent[a]		Western Arctic[b]	Wrangel Island[b]	Greater[c]	
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{N}$	$\widehat{N}$	$\widehat{SE}$
2008/09	1,946.9	317.7	16,393.6	2,196.9	616.1		1,009.0	31.6
2009/10	3,098.0	428.8	11,102.6	1,123.9	575.0	47.4	824.0	139.8
2010/11	2,653.8	351.6	18,637.2	1,980.6	565.5	60.8	917.0	18.9
2011/12	3,090.7	421.4	14,674.9	1,477.8	739.1	55.6	1,005.0	43.4
2012/13	3,735.7	486.7	16,171.6	1,628.3	603.4	54.7	921.0	32.1
2013/14	5,891.9	813.3	21,552.2	2,159.5	950.9	53.1	796.0	32.1
2014/15	1,908.0	223.2	10,065.9	1,006.6	866.9	60.8	818.0	31.1
2015/16	3,073.9	346.5	15,576.4	1,495.8		59.4	915.0	52.6
2016/17	2,638.4	389.0	12,292.4	1,255.8	1,400.1	69.0	747.0	37.2
2017/18	2,926.5	539.3	9,087.9	1,053.4	980.4	73.2	877.0	49.0
2018/19	2,537.5	339.4	7,386.8	725.3	1,013.2	87.3	714.0	42.9
2019/20					1,186.9			
2020/21						93.3		
2021/22	1,076.1	167.0	4,685.9	498.2		101.3	753.0	14.8
2022/23	3,409.1	474.2	7,992.7	754.9	978.4	87.4	585.0	9.2
2023/24					1,132.3		628.0	12.8
2024/25					1,006.6		428.0	6.6

[a] Lincoln estimates of adults.
[b] Fall-winter indices.
[c] Surveys conducted in spring.

Table C.3. Abundance indices (in thousands) of North American greater white-fronted goose, brant, emperor goose, and tundra swan populations, 1969–2025.

	White-fronted goose				Brant					Tundra swan		
	Pacific[a]		Midcontinent[b]		Atlantic[a]	Pacific[a]		Emperor goose[c]		Western[c]		Eastern[a]
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$
1969/70					106.5							
1970/71					151.0							
1971/72					73.3							
1972/73					40.8							
1973/74					88.1							
1974/75					88.4							
1975/76			399.2	66.4	127.0							
1976/77			524.4	91.4	73.8							
1977/78			519.5	76.9	46.7							
1978/79			563.1	83.5	42.0							
1979/80					59.2							60.1
1980/81					97.0							93.0
1981/82					104.5							73.2
1982/83					123.5							87.5
1983/84					127.3							81.4
1984/85	107.4	17.0			146.3			19.3	1.4	94.8	13.2	96.9
1985/86	88.1	12.9	777.2	362.4	110.4			11.6	0.9	70.8	5.4	90.9
1986/87	82.0	10.4	933.9	256.5	109.4			10.6	1.0	76.9	10.9	95.8
1987/88	131.5	10.1	1,291.6	358.8	131.2			13.1	1.0	83.0	13.8	78.7
1988/89	139.3	15.5	1,665.4	495.7	137.9			14.2	1.0	108.1	17.8	91.3
1989/90	173.1	14.9	3,246.1	870.9	135.4			14.6	1.1	111.4	20.1	90.6
1990/91	151.9	12.7	2,334.9	787.3	147.7			12.5	1.1	84.8	14.1	98.2
1991/92	168.9	17.7	1,033.8	200.7	184.8			12.9	0.8	72.3	4.8	113.0
1992/93	196.9	20.3	1,644.7	503.8	100.6			15.5	1.1	79.4	13.1	78.2
1993/94	224.9	17.7	2,026.8	466.0	157.2			16.8	0.9	83.5	7.6	84.8
1994/95	287.4	18.8	1,483.2	313.4	148.2			17.7	1.1	119.4	34.1	85.1
1995/96	352.7	24.8	1,769.7	376.4	105.9			23.9	2.4	109.9	19.2	79.5
1996/97	346.9	25.8	1,792.7	259.0	129.1			22.4	1.5	114.1	10.9	92.4
1997/98	349.0	20.2	2,240.5	381.0	138.0			20.0	1.0	135.7	13.7	100.6
1998/99	388.8	27.4	1,560.5	190.6	171.6			19.7	1.3	107.2	12.7	111.0
1999/00	337.3	27.1	2,669.9	351.9	157.2			16.6	0.9	108.6	12.1	115.3
2000/01	461.4	38.6	2,178.3	292.7	145.3			26.3	1.4	93.6	8.2	98.4
2001/02	360.7	25.4	2,872.9	450.9	181.6			18.7	1.1	116.7	14.9	114.7
2002/03	443.8	39.8	1,508.7	183.5	164.5			20.6	1.5	95.6	7.8	111.7
2003/04	378.2	25.2	1,885.0	225.5	129.6			21.0	1.1	110.8	20.1	110.8
2004/05	422.4	34.5	2,485.2	332.2	123.2			20.6	1.3	122.7	21.1	72.5
2005/06	550.7	34.9	3,009.0	419.7	146.6			25.0	1.5	124.0	12.9	81.3
2006/07	626.4	43.2	3,604.0	452.4	150.6			25.1	1.6	154.7	22.1	114.4
2007/08	699.9	62.3	3,703.0	478.9	161.6			21.8	1.1	174.6	32.6	96.2

Table C.3. continued.

	White-fronted goose				Brant					Tundra swan		
	Pacific[a]		Midcontinent[b]		Atlantic[a]	Pacific[a]		Emperor goose[c]		Western[c]		Eastern[a]
Year	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$	$\widehat{SE}$	$\widehat{N}$
2008/09	585.1	51.7	3,493.2	490.6	151.3			20.3	1.2	107.0	7.8	100.2
2009/10	734.6	63.9	2,917.5	381.9	139.3			19.8	1.1	110.2	9.0	97.3
2010/11	674.1	53.5	2,909.3	350.2	148.9			20.7	1.2	119.4	16.3	97.6
2011/12	749.2	68.1	2,723.4	311.2	149.2			20.2	1.6	115.0	9.4	112.7
2012/13	640.1	72.5	3,622.7	458.4	111.8			29.4	2.2	109.6	17.6	107.1
2013/14	697.8	96.5	3,765.8	527.5	132.9			30.7	2.8	96.9	10.3	105.0
2014/15	561.8	52.8	2,286.2	346.8	111.4			27.8	1.7	125.4	22.2	117.1
2015/16	751.8	68.8	3,006.3	394.8	157.9			33.3	2.4	133.3	45.6	113.6
2016/17	778.5	60.8	2,362.2	311.4	161.7	377.0	96.6	29.1	1.7	107.4	14.9	119.3
2017/18	644.1	75.7	2,803.6	377.1	169.7	227.4	37.5	29.5	1.7	152.0	26.3	111.6
2018/19	515.6	56.9	2,300.3	375.0	120.1	272.5	57.5	25.8	1.5	101.1	11.9	92.8
2019/20					139.9							78.6
2020/21	508.8	48.3	3,194.7	531.4				23.3	1.2	119.5	17.8	86.7
2021/22	677.1	77.2	1,278.4	172.6	109.2	201.6	53.8	28.0	1.5	100.3	10.7	95.7
2022/23	425.9	44.2	2,749.6	342.9	121.5	245.1	69.7	23.4	1.5	72.4	9.0	137.8
2023/24	415.3	34.8			112.8	188.8	50.1	17.2	1.0	73.7	7.3	64.4
2024/25	468.9	55.8			133.9			22.2	1.2	72.9	13.8	77.2

[a] Fall-winter indices.
[b] Lincoln estimates of adults.
[c] Surveys conducted in spring.

Division of Migratory Bird Management
12100 Beech Forest Drive
Laurel, MD 20708-4016

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