Light Goose Populations and Special Measures/Conservation Order Regulations
Talking Points

Prepared by the Arctic Goose Joint Venture
May 6, 2024

Midcontinent lesser snow geese and Ross's geese

- Abundance of midcontinent lesser snow geese and Ross's geese have been experiencing a decline in their population during the past decade. This is a dramatic change compared to the steady population growth between the 1970s and 2010s.
- Recent abundance declines are primarily due to low productivity (few goslings produced) at primary breeding colonies.
- Central and Mississippi Flyway management plans for midcontinent lesser snow and Ross's geese, which guide management decisions including hunting regulation, were updated in 2018 and in 2021, respectively. These plans include two thresholds for monitoring population status and the effects of hunting: 1) adult harvest rate (i.e., the proportion of the population harvested by hunters) and 2) Lincoln estimates of adult abundance (i.e., an indirect index of population size derived from estimates of total harvest and harvest rate).
- Objectives in the recent management plans follow the population reduction goals established in the late 1990s to reduce the population sizes at that time by 50% through the maximization of hunter harvest **AND** to achieve target adult harvest rates of 10–12%, a level that is high enough to decrease adult survival and reduce abundance.
- The management plans do not dictate specific, prescribed regulation changes but rather identify thresholds that, if both were met, would prompt additional analyses to establish future population targets and management actions.
- The most recent 3-year average adult Lincoln estimates (2022, 2019, 2018; no estimates during 2020–2021 due to COVID) were about 4.8 million for midcontinent lesser snow geese and 1.2 million for Ross's geese. These estimates are near the abundance threshold for midcontinent lesser snow geese but remain about 4-5 times above the abundance target for Ross's geese.
- The most recent 3-year average adult harvest rates were less than 2.5% for both species, about 5 times lower than threshold harvest rates.
- While recent abundance estimates are at or nearing abundance thresholds, current harvest rates remain too low to substantially influence population dynamics.

- The recent declines in productivity and abundance of midcontinent light geese have had little to do with increases in harvest since Conservation Order (U.S.) and Special (Canada) regulations were implemented in the late 1990s. To date, populations exceeded hunters' ability to increase harvest enough to affect adult survival and decrease abundance. The recent declines in productivity have been influenced mainly by density-dependence effects (i.e., the populations exceeding the habitat's ability to support current numbers). Similarly, earlier spring phenology is increasing the mismatch between peak gosling hatch dates and peak nutritional value of food sources leading to increasing gosling mortality as are environmental and climate changes, such as more frequent rain events during peak hatch.
- Conservation Order and Special regulations designed to maximize light goose harvest will remain available as management tools until harvest and population objectives are met or they are determined to no longer be needed to achieve objectives.
- Where Conservation Order regulations are currently allowed by U.S. Federal regulations in the United States, states can choose to implement or not implement these regulations each year. States also retain the ability to vary hunting regulations for light geese during the regular waterfowl hunting season as long as regulations are more conservative than U.S. Federal frameworks allow (states cannot be more liberal). Federal Conservation Order regulations do not need to be rescinded for states to select more conservative hunting regulations than allowed.
- In Canada, Special regulations (i.e., spring conservation harvests and enhanced tools for hunting [e.g., use of electronic calls]) may be allowed for species and populations of migratory game birds that have been designated as overabundant under the Migratory Birds Regulations. The areas in which these regulations apply are identified under Canadian Federal regulations, which are usually determined by agreement through discussions between provincial/territorial and Canadian Federal governments.
- Substantial time, effort, and resources were devoted to establishing existing U.S. and Canadian Federal regulatory frameworks for light geese. These regulations, along with the establishment of robust, annual monitoring programs, allow for a flexible and adaptive management approach to change harvest regulations commensurate with population status.

Greater snow geese

- Greater snow geese are monitored by a spring aerial survey in Quebec. The population increased 40-fold between the 1960s and early 2010s, peaking around 1 million geese in the early 2010s.
- Abundance declined substantially during the past decade and currently is within the target range desired by managers; the most recent 3-year average abundance estimate (2023, 2022, and 2019; no estimates during 2020–2021 due to COVID) was 684,000, which is within the 2009 management plan target range of 500,000–750,000 geese.
- The management plan outlines action to increase hunter harvest to levels that decrease and maintain abundance within the target range. Compared to midcontinent lesser snow geese, greater snow geese are a substantially smaller population (15–20 times smaller at their respective peak abundances), and the additional hunter harvest resulting from the establishment of Conservation Order and Special regulations in the Atlantic Flyway was high enough to increase adult harvest rates from about 6% to greater than 13%, which decreased adult survival enough to lead to declines in abundance.
- Combined effects of both hunting and below-average productivity of goslings during the past decade have contributed to recent abundance declines.
- While abundance of greater snow geese is currently within the management objective range, the environmental conditions that allowed for rapid increase of the population still remain, including vast amounts of agricultural lands and refuge areas to sustain the population during migration and winter, sufficient habitat in Arctic breeding areas, and the capacity to have high gosling production when breeding conditions are good.
- Analyses led by the Canadian Wildlife Service and partners are currently underway to comprehensively evaluate the impacts of Conservation Order and Special regulations on greater snow geese. A final report is expected in 2025. This report will aid managers in making decisions about either maintaining current regulations or potentially making changes to current abundance thresholds and harvest regulations.

Wrangel Island and Western Arctic lesser snow geese

- In contrast to midcontinent light geese and greater snow geese, abundance of Wrangel Island and Western Arctic lesser snow geese have rapidly increased during the past decade.
- The most recent ground-based surveys on Wrangel Island, Russia indicated the Wrangel Island Population increased 17% per year during the past decade, with a 2022 spring abundance estimate of 750,000 geese, approximately five times larger than in the mid-2010s. Aerial surveys on the Arctic Coastal Plain of Alaska indicated abundance of breeding lesser snow goose increased >30% per year during the past decade, with more than 50,000 breeding geese in 2023.
- Lincoln estimates of abundance indicated the Western Arctic Population increased 11% per year during the past decade, with an adult population size exceeding 2 million geese in 2018. Winter abundance surveys of light geese in Pacific Flyway coastal states consistently exceed 1 million geese in recent years.
- The recent, rapid growth of Wrangel Island and Western Arctic lesser snow geese coincided with high annual productivity (numerous goslings produced) during the past decade. Exceedingly high growth rates at some breeding colonies, though, cannot be fully explained by only local production and suggests some amount of immigration from other nesting areas to the east.
- Future monitoring efforts on the breeding grounds are uncertain, particularly on Wrangel Island, Russia due to recent world events and political relations. To address this uncertainty, the Pacific Flyway approved an interim harvest strategy in 2023 to guide harvest management decisions based on winter surveys. Liberal hunting seasons are to be implemented and maintained if the 3-year average of winter surveys exceeds 300,000 total snow geese in the Central Valley of California and 70,000 adult snow geese in the Fraser-Skagit region of British Columbia and Washington. Current 3-year average abundance estimates are well above these thresholds, greater than three times the California threshold and about two times the Fraser-Skagit region threshold.
- In the U.S., Conservation Order regulations (i.e., allowing additional days to take light geese outside the regular waterfowl season Federal frameworks) are not currently allowed in the Pacific Flyway; however, use of electronic calls and unplugged shotguns can be used to hunt light geese during the regular waterfowl season when all other waterfowl and crane seasons (excluding falconry) are closed. The Pacific Flyway has liberalized light goose hunting regulations (i.e., increasing daily bag limits and extending Federal framework ending dates for the regular waterfowl season), beginning in 2010, as abundance of these populations increased and will continue to do so if populations continue to increase and remain above objective. In Canada, special regulations are in place that target Western Arctic geese.
- Comprehensive analyses of all available data, led by the University of Saskatchewan and partners, are currently underway to develop a population model for Wrangel Island and Western Arctic lesser snow geese. This information will help guide decisions about future monitoring efforts and management actions. A final report is expected in 2025 or 2026.