



Special Measures/Conservation Order Regulations for Overabundant Light Goose Populations

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Light geese (snow and Ross's geese) are a natural resource of tremendous value that provides both tangible and intangible benefits to humans. Messaging focused only on their negative aspects, coupled with liberalized management actions, can wrongfully shape hunter and public perceptions and views. Everyone plays a critical role to communicate accurate information about light geese and promote their sustainable and ethical use.

Beginning in the 1970s, researchers began documenting rapidly increasing light goose populations and impacts to critical habitats in central and eastern North America. To reduce their abundance and impacts, light goose hunting regulations in central and eastern North America were liberalized during the regular waterfowl season, and, then beginning in 1999, additional special measures(Canada)/Conservation Order(U.S.) regulations were implemented, which allowed for harvest of light geese outside of traditional hunting season dates and the use of otherwise prohibited methods. These new regulations were created because existing waterfowl hunting regulations were not adequate to address the management concern. The intent of these regulations was specific: to reduce overabundant populations and protect habitat/other interests, particularly sub-Arctic and Arctic habitats (not to increase hunting opportunity for the sake of hunters). These regulations have been expanded to new areas over time and will be withdrawn if management objectives are achieved and populations can be adequately managed through traditional hunting seasons alone. Waterfowl managers establish and update management objectives and harvest strategies for light geese periodically as priorities and information change (see <https://www.agjv.ca/related-links/> for current Flyway Management Plans). Currently, Conservation Order regulations are allowed in the Atlantic, Mississippi, and Central Flyways within the United States, and special measures are allowed in provinces from Alberta to Québec and all three Territories within Canada.

The Arctic Goose Joint Venture (AGJV) continues to support the use of special measures/Conservation Order regulations to sustainably manage light goose populations in North America. Hunter harvest remains the preferred management tool to reduce overabundant light goose populations. Special measures/Conservation Order regulations have increased harvest of light geese, and about 50% of all light goose harvest in the three eastern Flyways now occurs under these regulations. When these regulations were first implemented on greater snow geese in

the Atlantic Flyway, adult harvest rates (the proportion of the adult population shot by hunters) more than doubled, from <6% to >13%, which helped reduce and stabilize the abundance of this population near its management objective. Conversely, additional harvest through special measures/Conservation Order regulations on midcontinent lesser snow geese and Ross's geese in the Central and Mississippi Flyways has not resulted in reducing these large populations near their management objectives. Adult harvest rates remain low (<3%), which likely has minimal effects on population dynamics. These populations remain substantially above their management objectives, but their growth rates and abundances have decreased during the last decade, likely resulting from many factors (e.g., harvest and hunting activity, high abundances limiting resources, poor production, emigration to other areas). Overall, the 3 light goose populations in central and eastern North America are smaller and have lower growth rates now compared to when special measures/Conservation Order regulations were first implemented. In contrast, the Wrangel Island and Western Arctic populations of lesser snow geese in the Pacific Flyway have increased rapidly in recent years, raising concerns about their future growth and impacts.

Light geese have both positive and negative impacts on ecosystems, which vary among geographical areas and seasons and depend upon many factors. Light geese can affect other species directly and indirectly by altering vegetation and habitats, food chains, and nutrient levels and through competition for resources. Impacts from light goose "grubbing" on coastal marsh habitats, primarily salt marsh habitats along western Hudson Bay in the sub-Arctic, were a main concern leading to the establishment of special measures/Conservation Order regulations. Grubbing removes below-ground plant biomass and denudes vegetation, leading to an increase in soil salinity that can reduce biodiversity in impacted habitats for decades. In the midcontinent region of North America, light goose impacts to coastal sub-Arctic marsh habitats are most intensive over 3–4 weeks during spring migration. These habitats are important for millions of Arctic-nesting migratory birds and other species but represent <1% of all lands used by light geese in the Arctic and sub-Arctic. In central and eastern North America, about 90% of light geese nest in the Arctic, primarily in freshwater habitats where less concentrated foraging on above-ground plant biomass is more common. Researchers have documented negative impacts to freshwater habitats and other species throughout the Arctic from high concentrations of light geese, but impacts to date have been less intensive than along Hudson Bay. Vast expanses of potentially high-quality light goose habitat remain in the Arctic. Researchers have documented that impacts from high concentrations of light geese can cause, or contribute to, declines of other species at localized and regional scales. Current research is aimed at better quantifying the overall effect that light geese have on habitats and other species at broader scales (e.g., continental, population-level) and within the context of their full annual life cycle.