Tundra Swan

Cygnus columbianus

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Photo by Harry D Sell

DESCRIPTION

Taxonomy and Basic Description

Tundra swans are the largest migratory waterfowl species found in South Carolina and measures over 48 cm (4 feet) long with an average weight for adults and immatures of 2.8 and 2.6 kg (16 and 13 pounds), respectively. The bird is characterized by its distinctive long, straight neck, black bill, all-white plumage and unique call. Immature tundra swans feature a gray plumage and pinkish bill. Each trait is replaced with adult characteristics by the end of their first winter. Tundra swans can be distinguished from snow geese and white pelicans by the lack of black wingtips and from feral mute swans, which feature a S-curved neck and orange bill. Differentiation from trumpeter swans is more difficult. Both species have all-white plumage but a trumpeter is much larger and has a more vociferous call. True segregation can be accomplished by dissection. A trumpeter swan has a more convoluted windpipe, including a vertical loop, than a tundra swan (Limpert and Earnst 1994).

Tundra swans are classified in family Anatidae, subfamily Anserinae and tribe Anserini. They are classified in this tribe along with six other species of swans found in the world and true geese. This tribe is characterized by similar plumage and voice of the sexes, one annual molt, lifelong pair bonds, simple courtship displays, sexual maturity at 2 or 3 years and care of the young by both sexes (Bellrose 1980).

Status

Tundra swans are not a federally listed species but are protected under the Migratory Bird Treaty Act.

POPULATION DISTRIBUTION AND SIZE

There are two populations of tundra swans in North America. The western population, numbering around 100,000 birds, breeds primarily in western Alaska and migrates through western Canada to wintering areas in California, Utah and the Pacific Northwest. The eastern population breeds from the Seward Peninsula of Alaska eastward to northern Hudson Bay and Baffin Island, with a major concentration in the Mackenzie River Delta. The birds migrate through a narrow corridor of prairie Canada and the Great Lakes before reaching the wintering grounds along the mid-Atlantic coast from Maryland to South Carolina.

The eastern population of tundra swans numbers approximately 100,000 birds and has increased by an average of 3 percent annually over the last 10 years (USFWS 2004). Historically, the majority of these birds wintered in the Chesapeake Bay region, but a shift began during the 1980's, as much as 75 percent of the population now winters in coastal North Carolina. Reasons for the shift were decline in submerged aquatic vegetation and competition from expanding mute swan populations in the Chesapeake Bay. Post and Gautreaux (1989) list tundra swans as a rare winter visitor on the coastal plain and very rare in the piedmont of South Carolina. The number of tundra swans observed during the Atlantic flyway midwinter waterfowl survey has seen an increase to 250 swans since 2000 (Serie and Raftovich 2004).

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

Tundra swans feed largely on leaves, seeds, stems and tubers of aquatic and marsh plants. In the mid-Atlantic region, they routinely feed in agricultural fields. Nearly all tundra swans in South Carolina are found on brackish (5 to 20 ppt) managed wetlands in the ACE Basin, primarily near Bear Island Wildlife Management Area, with scattered sightings on the same habitats north of Charleston. These wetland types are characterized by populations of widgeongrass (*Ruppia maritima*), saltmarsh bulrush (*Scirpus robustus*) and dwarf spikerush (*Eleocharis parvula*). Managed wetlands probably provide the entire winter habitat needs (foraging/roosting) of tundra swans in South Carolina since the birds are rarely observed elsewhere.

CHALLENGES

Being a very large bird, tundra swans have few natural predators. However, tundra swans spend half of their annual cycle on migration (Petrie and Wilcox 2003), where they face considerable challenges, such as staging area degradation, collisions and disease. Eastern population tundra swans are hunted, but there appears to be no negative effects since the population has been increasing. The reported harvest in 2003 was 2,861 swans, which is below the 1999 through 2003 average of 3,397 birds.

Tundra swans are not hunted in South Carolina and their main threat is habitat related. Swans appear to spend the entire winter on managed wetlands, habitat types that are very dynamic, costly to maintain, have stringent permitting requirements and require diligence to properly manage. Currently, there are approximately 28,000 hectares (70,000 acres) of managed wetlands in coastal South Carolina. These habitats are both publicly and privately owned, and swans are located across ownership types. The needs of wintering tundra swans appear to be met today but the conservation and continued proper management of managed wetlands is imperative for the future.

CONSERVATION ACCOMPLISHMENTS

Aerial surveys as part of the Atlantic flyway midwinter waterfowl survey have detected the presence of tundra swans wintering in South Carolina. Land-based Christmas bird counts have likewise documented the occurrence of tundra swans in the state. So far, habitat preferences have been anecdotally documented for the state by the South Carolina Department of Natural

Resources (SCDNR). Finally, portions of habitats used by wintering tundra swans are protected by state and federal ownership.

CONSERVATION RECOMMENDATIONS

- Maintain properly managed wetlands in the tundra swan's core wintering area.
- Initiate appropriate research projects for tundra swans as management needs arise.
- Ensure adequate funding for maintenance of managed wetlands under public ownership.
- Provide technical assistance to private landowners of brackish water managed wetlands.
- Continue closed hunting season of tundra swans in South Carolina.
- Monitor water quality and waterfowl disease potential on managed wetlands, especially if hand-reared mallard populations increase.
- Better document habitat use, activity budgets and migration arrival and departure to ensure appropriate supervision of managed wetlands.
- Continue to record the presence/absence and abundance of tundra swans in the state under a coordinated survey effort.

MEASURES OF SUCCESS

Appropriate research projects will be initiated as management needs arise for tundra swans. As with most migratory bird species, little, if anything can be done to force tundra swans to migrate to South Carolina; however, ensuring that adequate habitats exist is vital for the long-term success of the species in the state.

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