

Tundra Swans—A PA “Responsibility Species”

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IN MARCH of 2009 I took a trip to Middle Creek Wildlife Management Area in Lebanon County, but not just to hear the cacophony of the thousands of snow geese and tundra swans migrating through. I went to hear what a group of people are saying and doing to keep the tundra swans a part of that cacophony.

Tundra swans (*Cygnus columbianus*) are large white birds with wingspans of about six feet and weights of up to 18 pounds. They have black bills and feet, and most adults have a yellow patch just in front of their black eyes that distinguishes them from trumpeter swans, which are also larger. They differ from the non-native, and invasive, mute swan, which has an orange and black bill. Juvenile tundras have a grayish cast to the plumage on their heads and necks. Tundra swans establish lifelong pair bonds at about four or five years of age, and their high-pitched vocalizations earned them their former name as whistling swans.

Why should we care about swans that live on the tundra? Tundra swans have one of the longest migrations of any waterfowl — 4,000 miles. It takes them two to three months to get from their arctic breeding grounds in northeastern Alaska and northern portions of the Yukon, the Northwest Territories and Nunavut in Canada to their wintering grounds. Tundras winter along both U.S. coasts. The eastern population is slightly larger and winters from southeastern Pennsylvania and the Chesapeake Bay south to coastal North Carolina.

Tundra swan families migrate together until the young have traveled both south and north routes with their parents. They spend 40 percent of the year in migration, 30 percent of the year on the breeding grounds and the remaining 30 percent on their winter range. The eastern population visits four important sites during winter: Middle Creek, the Chesapeake Bay, the Potomac River, and the Tri-Refuge area in North Carolina.

The Game Commission's Middle Creek Wildlife Management Area has been managed for migrating waterfowl since it was created in the 1970s; more than 6,000 acres are cared for by agency employees. A 400-acre lake is visible from the Visitor Center. Birds staging in the area in winter and spring roost on the lake at Middle Creek, nearby quarry ponds and other large bodies of slow moving water.

They feed in large agricultural fields, mainly of harvested corn and winter wheat, in Lebanon and Lancaster counties. But, when the swans arrive in those fields, they are finding that some have already been consumed by something else — houses.

The Middle Creek Initiative is a combined effort of many organizations to preserve open spaces, specifically agricultural fields around Middle Creek, for

tundra swan feeding areas. The Lebanon Valley Conservancy, Lebanon County Conservation District, Highland Coalition and the Game Commission are among the organizations engaging in this effort.

By the 1800s, tundra swans had been extirpated from much of North America. In 1918, the Migratory Bird Treaty Act and the national refuge system began affording some protection. Their population has more than doubled since 1955, from 40,000 to 100,000. But, although the population of tundra swans is currently secure, their habitat may not be.

Nowadays, swans from more southerly wintering areas begin arriving on Pennsylvania's Susquehanna River drainage in late winter, and Middle Creek has been known to hold as many as 17,000 during staging periods. During this spring migration, it is critical that the birds load up on nutrients to help fuel their northward journey and to provide the energy needed to nest successfully.

Agricultural lands are an excellent source of these essential nutrients. Though there are many crop fields maintained on the Wildlife Management Area, the birds apparently prefer to feed on private agricultural lands, mostly to the northwest of Middle Creek. Although farmers sometimes suffer crop damage from grubbing snow geese and Canada geese, they are more tolerant of tundra swans, which merely graze on waste grains and hardy crops that seem to recover readily.

Research shows that while most tundra swans roost on only one site, they tend to feed on at least two different sites. Use of multiple feeding sites is important for management implications. It shows that a habitat complex is necessary. During winters when the lake at Middle Creek doesn't freeze over, a few hundred swans may stay all winter. In fact, research shows that most birds that winter in Pennsylvania tend to stay in Pennsylvania all winter, while others move north, a little at a time, as weather conditions thaw along their northward journey. In 2001, 27 percent of swans marked in southern states throughout the eastern range were confirmed passing through Pennsylvania, demonstrating that in some years the habitat complex around Middle Creek is used by a large portion of the eastern population. Therefore, maintaining the health of this habitat complex is not just of local importance, it has regional, national, international and global impacts.

Game Commission biologist Ian Gregg says, "Acting locally will conserve continentally with this species. That's why the tundra swan has been deemed a 'responsibility species' — one that our state plays a key role in keeping common — in Pennsylvania's Wildlife Action Plan."

So what do we do to fulfill this responsibility? Tundra swan roosting areas are fairly stable and secure. Problems could, however, arise with adjacent land development and increases in disturbance. Biologists suggest that 500 acres of known or potential roosting habitat in the Lebanon/Lancaster County region be secured and that human disturbance at current roost sites

be monitored and, if necessary, managed. Feeding areas are, in contrast, very vulnerable because they are subject to development. Biologists want to identify key areas used by the swans in Lebanon and Lancaster counties and to preserve, conserve, protect and secure at least 25,000 acres in those areas.

Jim Binder, Land Management Officer at Middle Creek, boils it down, "Like much of southeastern Pennsylvania, Lebanon County is under pressure from development. Farm fields that a few years ago held winter wheat and tundra swans now hold suburbia."

The director of the Lebanon County Planning Department, Earl Meyer, notes that an area important for tundra swans has some upcoming planning issues with the potential to significantly impact agricultural land. The current septic system in some municipalities is in need of improvement, and a public sewer system connected to the Lebanon City system is being considered as a means to update. There is great concern that if a public sewage infrastructure were in place, lands around the new system would quickly be consumed by development. Some areas that tundra swans currently use are likely to be the target of development.

The Lebanon County Agricultural Land Preservation Program provides agricultural conservation easements that preserve farmland. An easement is a permanent deed restriction that restricts development. The farmland, in this case, is protected. Easements don't restrict the landowner from selling the property but the restriction stays with the property indefinitely. Easements may offer landowners some tax savings as well. Binder says, "The beauty of conservation easements is that the land stays in private ownership, it stays in agricultural production, open space is preserved and, in this case, the swans also benefit."

Currently, easements exist on about 11 percent of the land that qualifies. But, the major concentration of swan sightings is where no farms are currently preserved. There is a waiting list of about a dozen landowners interested in selling conservation easements on their farm properties, but it takes \$250,000 to secure a 100-acre farm. Funding is the primary limiting factor. Government support, when available, requires matching dollars, so acquiring local private dollars is very important.

The Lebanon Valley Conservancy emphasizes, "The success of the Middle Creek Initiative will be measured in dollars raised to purchase agricultural easements as well as the number of acres of farmland removed from development. Inaction is not an option for Lebanon County. If the cropland necessary to sustain the feeding habits of this migratory species is not protected, it will have a direct and negative impact upon the local and regional economy."

For more information and to support the Middle Creek Initiative to preserve open space and protect tundra swan habitat, contact the Lebanon Valley

Conservancy, Inc. at www.lebanonvalleyconservancy.org or 752 Willow Street; Suite E; Lebanon, PA 17046; 717-273-6400.