Mute Swans

Potential impacts to wetlands and waterfowl in Illinois

By Mike Eicholz

Mute Swan in Plainfield, Will County. 6 June 2008. Photo by Brian Tang.

Mute Swans are a large herbivorous species of waterfowl introduced from Europe in the late 1800s when they escaped from domesticated farm flocks, ornamental collections, and zoos. They have expanded their distribution in North America from the Northeast to the Upper Midwest including Illinois. Current estimates indicate approximately 30,000 Mute Swans in the East Coast states and 15,000 in the Midwest, with approximately 250 occurring in Illinois.

They are similar in size and appearance to North America's native swans, but adults differ in having a bright, all-orange bill with a bulbous, black base and behaviorally in holding their wings high above their back in aggressive and courtship displays and in that they don't migrate from breeding to wintering areas. Instead, they remain in the same general location throughout the year, often congregating into large feeding flocks during the winter.

Studies in the eastern U.S., where Mute Swans have been established for a considerable time have shown that the lack of migratory behavior has caused substantial damage to already stressed wetlands (Allin et al. 1987, Allin and Husband 2003, Petrie and Francis 2003, Tatu et al. 2007a).

All species of geese and swans consume primarily vegetation both as young and adults, and Mute Swans are no exception. As young, swans feed on vegetation on the edge of wetlands and as adults they feed on submersed aquatic vegetation, plants that grow from the bottom of wetlands, but under the surface of the water. This vegetation is critically important in maintaining high-quality wetlands. (Holling 1973, Allin and Husband 2003, Petrie and Francis 2003, Conover and Kania 1994)

Because birds must be relatively light to fly, they have a very simple digestive track or stomach and are not able to digest most of the vegetation they eat. To compensate for this inefficiency, geese and swans consume a tremendous amount of food, digesting only a small fraction of what they consume. Similar to our native swans, each adult Mute Swan consumes five to eight pounds of food each day (Petrie 2001, Bailey et al. 2008).

Because native swans migrate from breeding to wintering grounds, they only spend from four to six months in the same area feeding. Aquatic vegetation likely has adapted to this level of grazing and is not negatively influenced by native swans.

Alternatively, Mute Swans stay in approximately the same location the entire year, congregating into large flocks during winter. Thus, the submersed aquatic vegetation in wetlands being used by Mute Swans has to sustain this heavy grazing for the entire 12 months of the year, producing a level of grazing pressure beyond the level for which aquatic plants have adapted.

In addition, because Mute Swans form large flocks during winter (probably as a defense against predators) they tend to focus their foraging pressure to very limited areas, consuming almost all the vegetation in one area before moving on to the next.

This vegetation is critical for maintaining the health of the permanent wetlands in which it exists. Its roots play a vital role in keeping the sediment consolidated at the bottom, so the clarity of the water is maintained.

Without the roots, sediment can get stirred up, preventing sunlight from penetrating the water and dramatically decreasing the productivity of the wetland, reducing the food availability for the fish and wildlife the wetland supports. By removing large quantities of aquatic vegetation, Mute Swans can dramatically reduce the quality of the entire wetland (Tatu et al. 2007).