

INDICATOR: DETROIT RIVER CHRISTMAS BIRD COUNT

Background

The Christmas Bird Count tradition began Christmas Day, 1900, led by ornithologist Frank Chapman, an early officer for the Audubon Society. This “Christmas Bird Census” was proposed as a new holiday tradition, rather than a Christmas hunt, an earlier tradition. During the first count in 1900, there were 27 participants (Audubon 2005). By 2005 that number had grown to over 50,000 participants in over 2,000 locations nationwide. These volunteer efforts are compiled into the longest-running database in ornithology, representing over a century of unbroken data on trends of early-winter bird populations across the Americas (Audubon 2005).

The Detroit River annual Christmas Bird Count (CBC) was established in 1978 as a binational endeavor to count overwintering birds. The area covered is a circle centered at the intersection of Warren Avenue and Interstate 94 in Detroit, encompassing parts of both Wayne County in Michigan and Essex County in Ontario (Figure 1). The count circle consists of mostly industrial, urban, and residential areas, but includes

some natural areas, such as the Ojibway Prairie in Windsor and wetlands along the Detroit River that are critical for bird populations.

CBC data are a one-day snapshot of the status and distribution of early-winter bird populations recorded on December 14th through January 5th nationwide. An individual count such as this one with a long history is vital for conservation. These population data can act as indicators of habitat change in a count area by examining trends for certain species or suites of species that depend on specific habitats. Also, local trends in bird populations can signal an immediate environmental threat, such as groundwater contamination or poisoning

from improper use of pesticides (Audubon 2005). These long-term data can also monitor the presence and increase of introduced species, which often have profound impacts on ecosystem health.

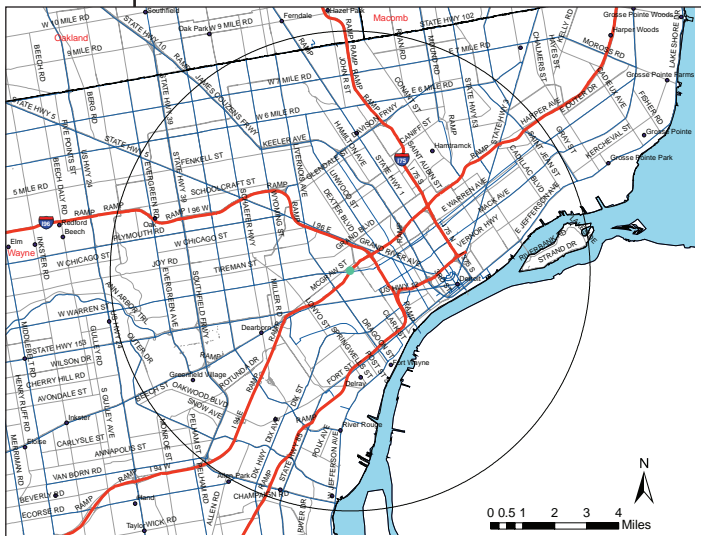


Figure 1. 24.1 km (15 mile) diameter designated count circle centered at Warren Avenue and Interstate 94 in Detroit, MI.

Status and Trends

Because these CBC count data are considered a one-day annual snapshot of the bird community, they may or may not correlate with community status. Though it seems possible to evaluate population changes from these trendlines, caution must be taken because there are annual changes in count effort, varying degrees of skill and diligence of observers, and biases in habitat coverage. The data are not corrected for these variations in observation frequency, observer skill level, or weather conditions.

There have been 35 species consistently counted on all 27 annual Detroit River CBC counts. One of those species is the Canada goose. There are two different populations of Canada geese in southeast Michigan and southwest Ontario, the migratory *Branta canadensis interior* and the resident *Branta canadensis maxima*. Prior to reintroduction efforts in Michigan and Canada in the 1920s and 1930s, the resident population was not present in the region. However, Michigan's Canada goose (*B.c. maxima*) population has grown 14% annually, and continues to increase (MDNR 2001). The Canada goose trend from the Detroit River CBC reflects these increasing numbers (Figure 2). In 2001, the CBC count of Canada geese was the lowest since 1981 due to the fact that the majority of the water bodies were frozen over.

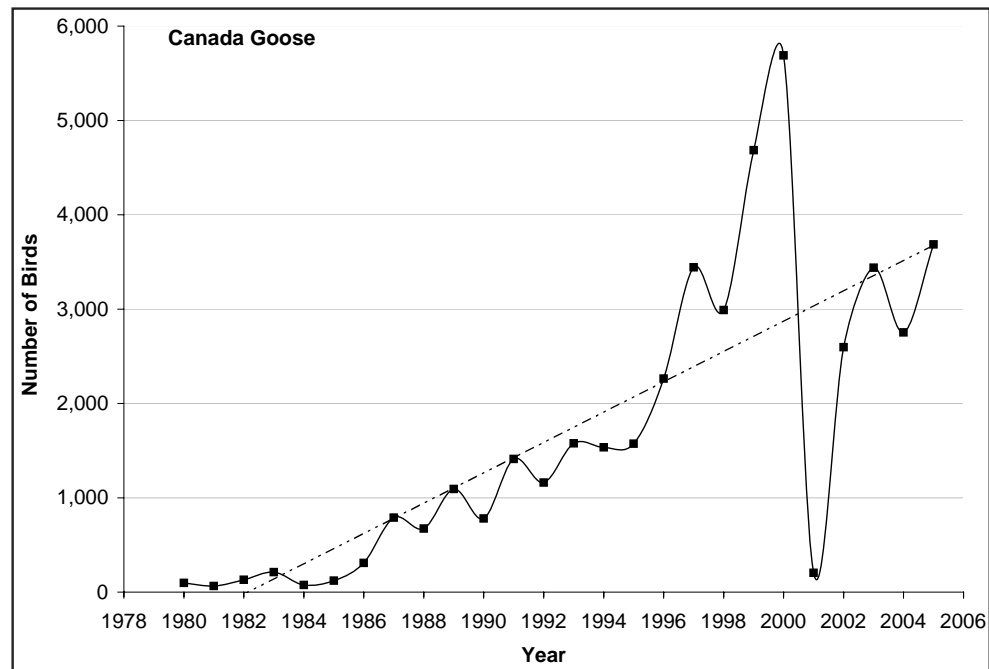


Figure 2. Canada goose Christmas Bird Count trend, 1980-2005.

Mute swans are a nonnative, invasive species introduced from north-central Asia and Europe in the nineteenth century. They are distinguishable from North American swans by the characteristic black knob at the base of their orange bill with a black tip (Figure 3). Mute swans spread throughout the United States from 1920 through the late 1970s when they were reported in all four flyways. In addition to being a nuisance to humans, they are ecologically damaging. They displace native waterfowl by taking over preferred nesting habitat and can seriously damage beds of submerged vegetation, critical to other waterfowl, by their heavy foraging. Mute swan numbers during the Detroit River CBC



Figure 3. Mute swan (*Cygnus olor*)
(Photo credit: Dave Appleton).

fluctuate, but a steady positive trend is evident from 1986 through 2005 (Figure 4). Much of the variability in the data relates to the ability of observers to count the swans from land, which in turn depends on the extent of ice on the water.

Waterfowl as a group also showed a general increasing trend from the late 1970s through 2005 (Figure 5). This yearly count includes waterfowl along the Rouge River as well as parts of the Detroit River. Waterfowl counts vary each year depending on the amount of frozen water; a high percentage of frozen water correlates with a low waterfowl count.

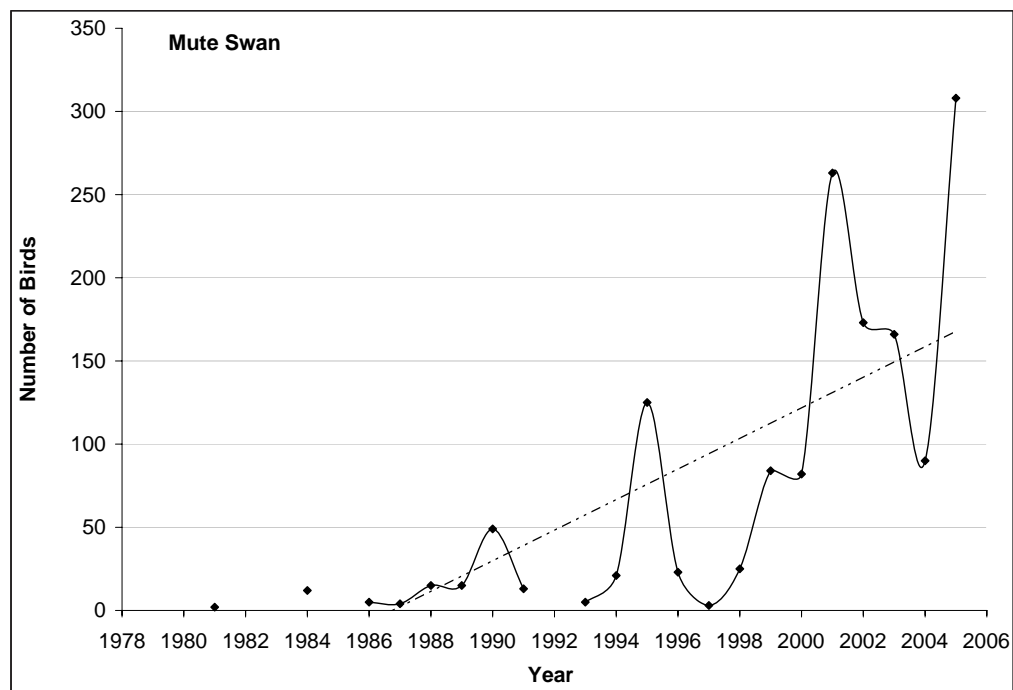


Figure 4. Mute swan Christmas Bird Count trend, 1981, 1984, 1986-2005.

Management Next Steps

It is recommended that management activities continue to monitor mute swan populations and initiate control measures, as necessary. In addition, conservation and restoration of critical waterfowl habitats should be undertaken as a priority.

Research/Monitoring Needs

The annual Detroit River Christmas Bird Count should continue. In the future, counts need to consistently cover the same areas within the count circle yearly, with the same number of count hours expended by volunteers. An increase in volunteer education and participation would be valuable. Research should also be conducted on the environmental effects of the invasive mute swan and methods to control the population.

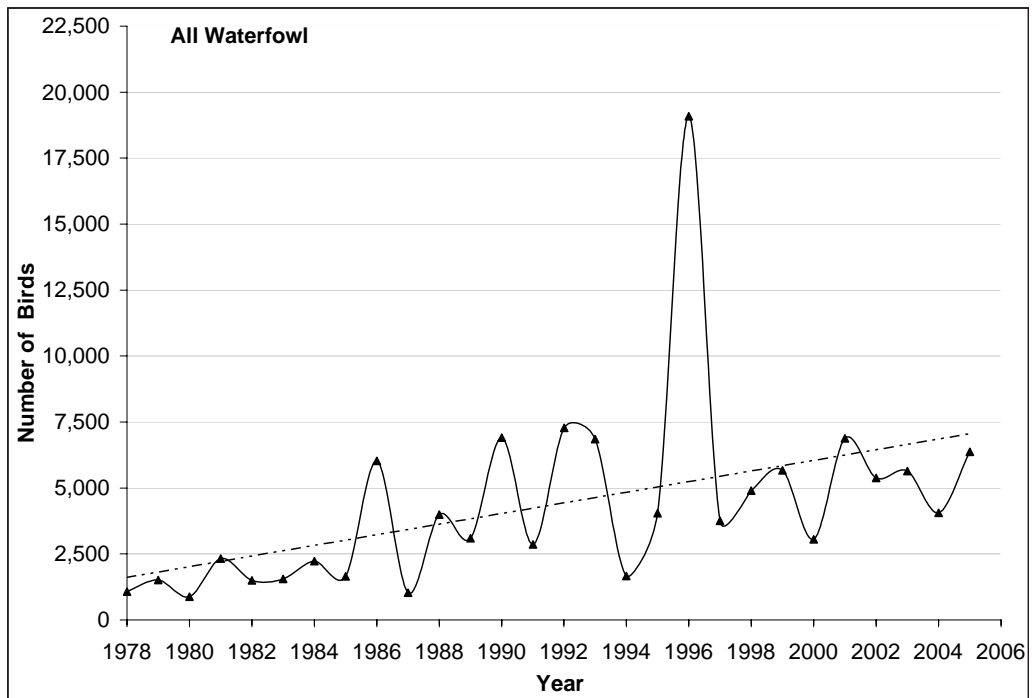


Figure 5. All waterfowl Christmas Bird Count trend, 1978-2005.

References

- Audubon. 2005. The 106th CBC, December 14th 2005 to January 5th 2006, History and Objectives. National Audubon Society.
- Craves, J.A., and J.A. Fowler Jr. December 2003. Twenty-five years of the Detroit River (Michigan-Ontario) Christmas Bird Count. *Ontario Birds* 21(3):110-128.
- Michigan Department of Natural Resources (MDNR). 2001. Waterfowl Status. http://www.michigan.gov/dnr/0,1607,7-153-10363_10859-50168-,00.html (December 2002).

Links for More Information

Rouge River Bird Observatory: www.rrbo.org

Mute swan populations, distribution and management issues in the United States and Canada: http://www.trumpeterswansociety.org/news/publications/16th_conf/24Nelson.pdf

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