

# Habitat Value of Wetlands for Water Birds in Urbanized Landscapes

Martin Main  
University of Florida

## Objectives:

1. To evaluate the extent to which natural and created wetlands associated with golf courses are used as habitat by resident and migratory water birds.
2. Identify habitat factors that combine to significantly influence waterbird use of golf course wetlands.
3. Identify specific recommendations for improving vegetation and hydrological management of golf course wetlands that will maximize benefits to waterbirds.

**Start Date:** 2001

**Project Duration:** 2 years

**Total Funding:** \$37,800

During January - April, 2001 (year 1) and 2002 (year 2), we surveyed water bird use of small, man-made lakes and ponds on 12 golf courses in southwest Florida. Habitat variables, which included vegetation along the water edge, land use adjacent to lakes, total effective foraging area in the littoral zone, and pond productivity, were measured for each of the 183 study lakes. Each lake was surveyed eight times (6 morning, 2 evening) over a four-month study period during both 2001 and 2002, resulting in 2,928 surveys of golf course lakes.

A total of 4,808 and 5,666 observations of waterbirds were recorded during 2001 and 2002 surveys, respectively. On a per lake basis, observations averaged 3.3 (2001) and 3.9 (2002) waterbirds per lake per survey over the duration of the study period. Factors influencing these numbers likely include habitat characteristics of the ponds



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and golf courses. Year-to-year variations in bird use may have been influenced by increased rainfall amounts in year two of the study, and may explain increased numbers of waterbirds recorded during year two.



Results indicate that small man-made ponds on golf courses provide food resources capable of attracting many species of waterbirds, especially diving, fish-eating birds. These same food resources also attract other waterbirds such as wading birds.

Although the total observations and number of species increased in year two of the study, the percentage of observations of birds in each category remained roughly the same for both years. These numbers indicate that small man-made ponds on golf courses provide food resources capable of attracting many species of waterbirds, especially diving, fish-eating birds.

These same food resources also attract other waterbirds such as wading birds. Lower numbers of these species may, in part, be due to their need for shallow water areas to concentrate prey.

## Summary Points

- 2,928 surveys of 183 golf course lakes on 12 golf courses were conducted in southwest Florida during January-May in 2001 and 2002.
- Surveys averaged 3.3 (2001) and 3.9 (2002) waterbirds per lake.
- Thirty species of waterbirds were recorded in 2001, and 40 species were recorded in 2002.
- Observations during the two-year study included a total of 12 species of short- and long-legged wading birds, 14 species of ducks and duck-like birds including diving, fish-eating birds, seven species of seasonal shorebirds, one species of seasonal kingfishers, six species of sea birds, and two species of birds of prey.
- The most abundant birds recorded during both study years were diving, fish-eating species, such as Cormorants and Anhingas. These data indicated ample food resources were available to attract and retain fish-eating species.
- Recommendations concerning the construction and management of golf course lakes to increase their habitat value to waterbirds will be included in the final report.