

# Wading birds and agriculture in Southwest Florida<sup>1</sup>

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## General Comments

Wading birds have been described as the wolves of our wetlands. That is, wading birds are at the top of the food chain in our marshes, bays, and swamps. As top predators, wading birds play an important role in recycling energy and maintaining ecological balance in the wetlands-dominated ecosystems of south Florida.

Wading birds come in many sizes, and colors. If you choose to include the Sand Hill Crane – really more of a terrestrial hunter, there are some 20 species of wading birds that might be observed in south Florida. Species such as the Great Egret are regularly seen whereas others, such as the occasional Scarlet Ibis or the highly secretive Limpkin, may never be observed by most people. In addition to their important ecological role, wading birds are also good for Floridas economy. Based on information provided during a recent ecotourism conference held in Fort Myers, hundreds of millions of dollars are pumped into Floridas economy each year by tourists that come to Florida to watch birds. This may seem hard to believe, but its true. A study by the American Bird Conservancy in 1997 reported that at \$477 million, Florida ranked second in the nation for retail sales generated by bird-watching activities. For obvious reasons, wading birds are an important draw for both the serious birdwatcher and for all of us that simply enjoy seeing Floridas native wildlife.

Historical treatment of wading birds in Florida has not been without controversy. At the turn of the century, many species of wading birds were nearly driven to extinction by plume-hunters. The plume trade, which supplied feathers for ladies hats, was highly profitable. In 1903 the value of an ounce of egret nuptial plumes, called aigrettes, was worth approximately twice the amount of an ounce of gold. Despite laws against plume hunting passed in Florida in 1891 and 1901, hunting did not stop and wading bird populations did not begin to rebound until the sale of wild bird plumage was made illegal by the New York legislature in 1910. Today, all species of wading birds are protected by state and federal law.

Current day populations of wading birds still remain much lower than historical levels. The overall decline of wading birds in Florida is estimated to be as high as 90%, although some scientists debate the accuracy of early estimates. While plume-hunting had a tremendous negative influence on wading bird populations early in this century, conversion of wetland habitat into other uses and alteration of hydrological flows in south Florida are considered the most important negative factors affecting wading birds in Florida today. Mercury poisoning and high rates of chick mortality due to parasites and disturbance of nesting colonies by enthusiastic boaters also places pressure on wading bird populations.

Wading birds are more than colorful additions to the landscape, contributors to the well being of local economies,

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or top predators of wetland ecosystems – these important wildlife also serve as barometers of ecosystem health. Over time, landscapes change due to human activity and so does the nature of the ecosystems they support. By ecosystem, we refer to the plants and animals and the ecological processes that are representative of a given region. Agriculture is a major force in landscape change and should be considered as an integral and influential component of modern-day ecosystems, rather than as a separate entity that influences highly modified “natural” ecosystems. For this reason, it is becoming increasingly important for new agricultural development and existing operations to proceed in such a way as to ensure farming and wildlife will continue to coexist in south Florida. Surprisingly, little information has been documented that describes the extent to which wading birds and other wildlife utilize agricultural lands in Florida. While growers might be familiar with wildlife that utilize their lands, the majority of the urban population is not. Unfortunately, this lack of knowledge can result in misconceptions regarding whether wildlife and agriculture can coexist in the future.

We began collecting information on wading bird use in and around canals serving agricultural operations in southwest Florida during October-March, a period that coincides with nesting of many species of wading birds in south Florida. Eighteen weekly surveys encompassing approximately 12-miles of rim canals were conducted on a 1,000-acre potato farm. The results of those surveys documented over 1,619 individuals representing 11 species of wading birds, some of which are listed by state or federal wildlife agencies as endangered, threatened, or species of special concern (Table 1). One of the more interesting findings was that the greatest numbers of birds were observed in association with farming activities. For example, the greatest concentrations of birds were observed clustered around ditch cleaning operations during October through December (Figure 1). There were two surveys that recorded fewer numbers of birds during this period, but ditch cleaning operations were not observed on those days. Disking operations also attracted large numbers of birds. The other factor that influenced the number of wading birds in canals was the lowering of water levels during February in preparation for harvest.

Our study documented that wading birds can and do feed in constructed canals in agricultural landscapes and that, in our preliminary study, farm-related activity actually improved use of these canals by wading birds. Findings such as these are very promising. They also suggest that there are likely to be a number of simple management

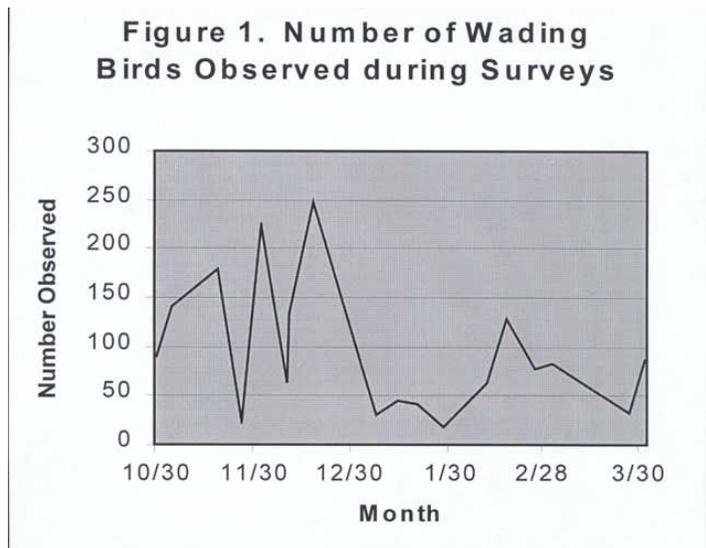


Figure 1.

practices that might be adopted to improve conditions for wading birds, such as mechanical ditch-cleaning rather than herbicidal treatments, manipulation of water levels, and consideration of the shape and contours used in new canal construction. Of interest and potential concern, too, is the quality of these agricultural wetlands as feeding sites for wading birds. Agricultural operations utilize a broad array of herbicides and pesticides. Whether chemicals used on farms become concentrated in canals and other wetlands and pose threats to wading birds within the agricultural landscape is not known and deserves further study. Clearly, however, agricultural wetlands represent important sources of habitat for wading birds and other wildlife, and we need to support farming practices that maintain healthy wildlife habitat on these privately owned lands.

Will wading birds ever return to historical numbers? Probably not, but provided we consider the needs of wading birds and other species in future operations and development, we can ensure they will be here to be enjoyed by future generations, just as we enjoy them now. As Theodore Roosevelt once said – *I recognize the right and duty of this generation to develop and use the natural resources of our land; but I do not recognize the right to waste them, or to rob by wasteful use, the generations that come after us.*

**Table 1. Wading birds observed during surveys of agricultural canals listed by species, number and % of total birds observed, and listed status by state and federal agencies.**

PRIVATE Species	Count	%	Listed Status	Agency
Cattle Egret	410	25		
Great Egret	392	24		
Snowy Egret	238	15	Species of Special Concern	State
Wood Stork	193	12	Endangered	State, Fed.
White Ibis	172	11	Species of Special Concern	State
Little Blue Heron	114	7	Species of Special Concern	State
Great Blue Heron	41	3		
Roseate Spoonbill	19	1	Species of Special Concern Under Review	State, Fed.
Tri-colored Heron	19	1		
Sandhill Crane	13	1	Threatened	State
Glossy Ibis	8	0		
Green-backed Heron	4	0		
Total	1619	100		