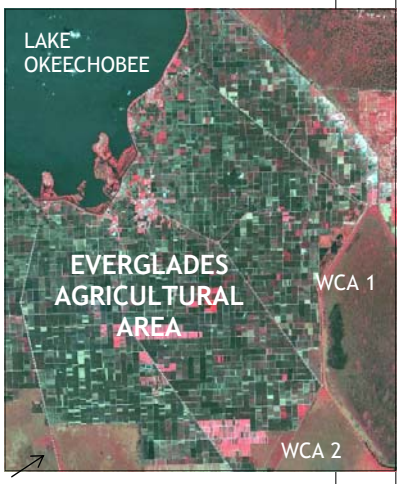
BIRDS OF THE EVERGLADES AGRICULTURAL AREA

A checklist of birds observed in the Everglades Agricultural Area

Elise V. Pearlstine, Michelle L. Casler, Frank J. Mazzotti

THE EVERGLADES AGRICULTURAL AREA

The Everglades Agricultural Area (EAA) is an area of drained agricultural lands that occupy nearly 700,000 acres; this represents approximately one-seventh of the original, historic 4,693,000 acre Everglades wetland system. The region is bordered by Lake Okeechobee to the north, by Water Conservation Areas 1 and 2 to the south and southeast, and the Holey Land/Rotenberger Wildlife Management Areas to the south. Agriculture in the EAA began with the onset of the drainage era in 1906, and intensified after the federal government launched a massive drainage campaign in 1950.



HOLEY LAND AND ROTENBERGER WILDLIFE MANAGEMENT AREAS

Farming in the EAA consists primarily of sugarcane grown in large tracts interrupted by a network of canals, roads, and irrigation ditches. Dry fallow, flooded fallow, and rice fields are seasonally present in the EAA, primarily in the summer months. Additionally, a variety of vegetables are grown over 11% of the area in the winter, and a small amount of sod is grown year-round. Vegetable, sod, dry fallow, flooded fallow, and rice fields are scattered throughout the sugarcane-dominated matrix in their respective seasons.

HABITAT LOSS

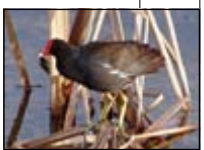
Millions of acres of wetland habitat in the U.S., including hundreds of thousands of acres in Florida, have been lost through conversion to agriculture or urban environments (Dahl and Johnson 1991, Hefner, et al. 1994). Nearly 50% of the original Everglades wetlands have been converted to other uses and much of the remaining wetland habitat has been degraded in quality (Davis and Ogden 1994). Decline and degradation of wetlands has caused a reduction in animals dependent on such habitat and many have sought alternate habitat types such as agricultural or urban environments (Bancroft 1989, Kushlan and White 1977, Frederick 1993, Rottenborn 1996).

Pied-Billed Grebe

Most woodlands in south Florida have disappeared, along with much of their associated wildlife. Forested areas, such as upland and mesic habitat, have been lost as well. Introduction of exotic species and drainage have significantly altered much of the remaining forestland (Sprott and Mazzotti, 2001). There is much concern about the loss of habitat due to these changes and their effect on native plant and animal species. It is clear many animals and plants are unable to persist in these altered habitats. However, opportunities exist in the agricultural landscape to provide habitat for some native plant and animal species.

AGRICULTURE AND WILDLIFE

Research has been conducted on ways to incorporate wildlife-friendly habitat into farming practices with the methods showing some success. Rice fields containing levees and dirt-bottomed ditches or canals are favored by birds (Lane and Fujioka 1998, Maeda 2001). Open water in rice fields and fallow flooded fields also provide significant bird habitat (Sykes and Hunter 1978, Twedt and Nelms 1999, Townsend 2000, Fujioka et al. 2001), including habitat for some species of herons (Kushlan 2000). Edge habitat, which includes either trees or herbaceous habitat, can serve to increase not only the number of birds , but the variety of species utilizing the agricultural fields also increases (Best et al, 1990). However, in reference to bird habitat, rice fields are not completely analogous to natural wetlands (Tourenq et al. 2001) and agriculture cannot be considered a replacement for natural habitat (Vandermeer and Perfecto 1997). There is also concern about chemical use in some agricultural areas and its effect on wildlife (Freemark and Boutin, 1995).



Common Moorhen

Upland, wetland, migratory, and resident species are found in a variety of habitats in the EAA. Actively working agricultural fields in this area, as well as

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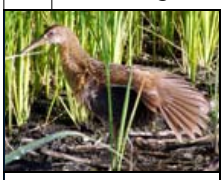
associated landscapes of canals and ditches, brushy edges, and roadsides, provide wildlife habitat. Rice is grown in a small percentage of the agricultural fields and is heavily used by birds. During drawdown, just prior to harvest, many species of wading birds can be observed foraging in the ditches. Birds, such as Common Moorhens, Pied-billed Grebes, and Mottled Ducks utilize rice fields for most of the growing season. Flooded fallow fields are highly favored by a large variety of birds, especially during migration. Ditches and canals provide aquatic habitat, with canals providing a permanent source of water throughout the EAA. The EAA does not offer anything of similar structure to Florida's disappearing forests and woodlands, but there is semi-permanent or permanent brushy habitat along many of the canals and fallow areas. A variety of animals, including upland birds, are found taking advantage of this habitat. Surveys in the EAA have found 12 bird species of state special concern and four federally threatened or endangered species.

Least Sandpiper



King Rail

Species occurrence and relative abundance in this checklist are based on direct observation in agricultural fields and other habitats within the EAA. Species classified as abundant and common can usually be observed in the appropriate season. For example, migratory species are observed in the late fall through early spring in the indicated habitats. Future work in the area will undoubtedly result in more species occurrences and regular updates to the checklist will reflect new observations.

LITERATURE CITED

Bancroft, C.T. 1989. Status and conservation of wading birds in the Everglades. American Birds 43:1258-1265.

Best, Louis B., R.C. Whitmore, and G.M. Booth. 1990. Use of cornfields by birds during the breeding season: The importance of edge habitat. American Midlands Naturalist 124 (1990): 84-99.

Dahl, T.E. and C.E. Johnson, 1991. Status and Trends of Wetlands in the Conterminous United States, Mid-1970's to Mid-1980's. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 28 pages.

Davis, S.M. and J.C. Ogden. 1994. Introduction. Pages 3-8 *in* Everglades: The Ecosystem and its Restoration. (S.M. Davis, J.C. Ogden Eds.) St. Lucie Press, Delray Beach, Florida.

Frederick, P.C. 1993. Wading bird nesting success studies in the WCAs of the Everglades. Final Report to the South Florida Water Management District, West Palm Beach, Florida.

Freemark K. and C. Boutin, 1995. Impacts of agricultural herbicide use on terrestrial wildlife in temperate landscapes: A review with special reference to North America. Agricuture, Ecosystems and Enviroment 52(2,3): 67-91.

Fujioka, Masahiro, James W. Armacost, Jr., Hoshiko Yoshida and Taku Maeda, 2001. Value of fallow farmlands as summer habitats for waterbirds in a Japanese rural area. Ecological Research 16:555-567.

Hefner, J.M., B.O. Wilen, T.E. Dahl and W.E. Frayer. 1994. Southeast Wetlands; Status and Trends, Mid-1970's to Mid-1980's, U.S. Department of the Interior, Fish and Wildlife Service, Atlanta, Georgia, 32 pages.

Kushlan, J.A., and D.A. White. 1977. Nesting wading bird populations in southern Florida. Florida Scientist 40:65-72.

Kushlan, J.A., and H. Hafner eds. 2000. Heron Conservation. Academic Press, San Diego, CA.

Lane, S.J. and M. Fujioka. 1998. The impact of changes in irrigation practices on the distribution of foraging egrets and herons (*Ardeidae*) in the rice fields of central Japan. Biological Conservation 83:221-230.

Maeda, T. 2001. Patterns of bird abundance and habitat use in rice fields of the Kanto Plain, central Japan. Ecological Research 16:569-585.

Rottenborn, S.C. 1996. The use of coastal agricultural fields in Virginia as foraging habitat by shorebirds. Wilson Bulletin 108:783-796.

Sprott, P. and F. Mazzotti, 2001. Habitat Loss, Florida's Changing Landscapes: Upland Forests. WEC 151, Department of Wildlife and Ecology Conservation, Institute of Food and Agricultural Sciences, University of Florida.

Sykes, P.W., Jr. and G.S. Hunter. 1978. Bird use of flooded agricultural fields during summer and early fall and some recommendations for management. Florida Field Naturalist. 6:37-43.

Tourenq, Christophe, Robert E. Bennetts, Hubert Kowalski, Emmanuel Vialet, Jean-Laurent Lucchesi, Yves Kayser and Paul Isenmann, 2001. Are ricefields a good alternative to natural marshes for waterbird communities in the Camargue, southern France? Biological Conservation 100(2001):335-343.

Townsend, S.E. 2000. Waterbirds in rice fields of the Everglades Agricultural Area. Unpublished Master's Thesis, University of Florida, Gainesville, FL.

Twedt, D.J. and C.O. Nelms. 1999. Waterfowl density on agricultural fields managed to retain water in winter. Wildlife Society Bulletin, 27(4):924-930.

Vandermeer, J. and I. Perfecto. 1997. The agroecosystem: A need for the conservation biologist's lens. Conservation Biology 11: 591-592.

BIRDS OF THE EVERGLADES AGRICULTURAL AREA

BIRD SPECIES CHECKLIST

NAME	ABUNDANCE	HABITAT	√
American White Pelican	r	ff, r	
Brown Pelican	r	-	
Double-crested Cormorant	c	all	
Anhinga	c	ff, canal	
American Bittern	r	-	
Least Bittern #	c	r, c	
Great Blue Heron	c	all	
Great White Heron	*	ff	
Great Egret	a	all	
Snowy Egret	a	all	
Little Blue Heron	a	r, f, ff	
Tricolored Heron	a	r, f, ff	
Reddish Egret	*	-	
Cattle Egret	a	all	
Green Heron #	a	all	
Black-crowned Night-Heron #	c	r, f, ff	
Yellow-crowned Night-Heron #	c	all	
White Ibis	a	r, f, ff	
Glossy Ibis	a	r, f, ff	
Roseate Spoonbill	c	r, ff	
Wood Stork	a	r, ff	
Black Vulture	a	all	
Turkey Vulture	a	all	
Black-bellied Whistling-Duck	r	r, ff	
Fulvous Whistling-Duck #	c	r, ff	
Snow Goose	*	f	
Gadwall	*	r	
American Wigeon	*	-	
American Black Duck	*	r, ff	
Mottled Duck #	a	r, ff	
Blue-winged Teal	c	-	
Northern Shoveler	r	-	
Green-winged Teal	r	-	
Ring-necked Duck	r	ff	
Ruddy Duck	r	ff	
Pied-billed Grebe #	r	ff, r	
Osprey	c	ff	
Swallow-tailed Kite	r	all	
Bald Eagle	r	all	
Northern Harrier	c	all	
Sharp-shinned Hawk	r	all	
Cooper's Hawk	r	all	
Red-shouldered Hawk	c	all	

ABBREVIATIONS

a = abundant
c = common
r = rare
* = accidental
# = breeding
s = sugarcane
r = rice
f = fallow
ff = flooded fallow
- = insufficient habitat information
ag = other agriculture
all = throughout the EAA

BIRDS OF THE EVERGLADES AGRICULTURAL AREA

BIRD SPECIES CHECKLIST (CONTINUED)

NAME	ABUNDANCE	HABITAT	√
Broad-winged Hawk	r	all	
Short-tailed Hawk	r	all	
Red-tailed Hawk	c	all	
Crested Caracara	r	all	
American Kestrel	c	all	
Merlin	r	all	
Peregrine Falcon	r	all	
Northern Bobwhite #	r	ag	
Wild Turkey	r	ag	
Clapper Rail	r	r, s	
King Rail #	c	s, r, ff	
Sora	r	-	
Purple Gallinule #	a	r, s, ag	
Common Moorhen #	a	all	
American Coot	c	ff	
Limpkin	*	r, f	
Sandhill Crane #	r	f	
Black-bellied Plover	c	ff, ag	
Wilson's Plover	*	ff	
Semipalmated Plover	r	r, f, ff	
Killdeer #	a	all	
Black-necked Stilt #	a	all	
American Avocet	r		
Greater Yellowlegs	c	r, f, ff	
Lesser Yellowlegs	c	r, ff	
Solitary Sandpiper	c	r, ff	
Willet	*	ff	
Spotted Sandpiper	r	f, ff	
Upland Sandpiper	*	ff	
Ruddy Turnstone	*	ff	
Semipalmated Sandpiper	c	r, f, ff	
Western Sandpiper	r	ff	
Least Sandpiper	c	r, ff, f, ag	
White-rumped Sandpiper	r	r, ff	
Pectoral Sandpiper	c	ff	
Stilt Sandpiper	r	ff	
Ruff	*	f	
Short-billed Dowitcher	r	ff	
Long-billed Dowitcher	r	ff	
Common Snipe	r	-	
Wilson's Phalarope	*	ff	
Laughing Gull	a	s, ff	
Ring-billed Gull	r	ff	

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NAME	ABUNDANCE	HABITAT	√
Herring Gull	r	ff	
Gull-billed Tern	c	ff	
Caspian Tern	r	ff	
Royal Tern	*	ff	
Sandwich Tern	r	ff	
Common Tern	r	ff	
Forster's Tern	*	ff	
Least Tern	c	r, ff	
Black Tern	c	ff	
Black Skimmer	r	ff	
Ringed Turtle-Dove	*	r	
Eurasian Collared-Dove	r	ag	
Mourning Dove	c	all	
Common Ground-dove	c	all	
Barn Owl #	c	f, s	
Barred Owl	r	ag	
Burrowing Owl	r	s	
Common Nighthawk	c	all	
Belted Kingfisher	c	r, ag	
Red-bellied Woodpecker	r	ag	
Pileated Woodpecker	r	ag	
Eastern Towhee	r	s	
Eastern Phoebe	r	s	
Great Crested Flycatcher	r	ff	
Eastern Kingbird	r	s	
Gray Kingbird	*	ag	
Loggerhead Shrike	r	f, s	
Blue Jay	c	all	
American Crow	r	ag	
Tree Swallow	c	f	
Northern Rough-winged Swallow	c	f, ff	
Bank Swallow	r	f, ff, s	
Barn Swallow	a	all	
Carolina Wren	r	ag	
Sedge Wren	r		
Blue-gray Gnatcatcher	r	ag	
American Robin	r	ag	
Gray Catbird	c	ag	
Northern Mockingbird	c	s, ag	
Yellow-rumped Warbler	r	s	
Palm Warbler	c	all	
Swainson's Warbler	r	s	
Common Yellowthroat #	a	all	
Prairie Warbler	*	ag	
Eastern Towhee	r	s	

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BIRD SPECIES CHECKLIST (CONTINUED)

NAME	ABUNDANCE	HABITAT	√
Savannah Sparrow	c	all	
Grasshopper Sparrow	*	-	
Lincoln's Sparrow	*	-	
Northern Cardinal	c	f	
Red-winged Blackbird	a	all	
Eastern Meadowlark	c	all	
Rusty Blackbird	r	s	
Boat-tailed Grackle	a	all	

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This checklist was developed through studies funded by the Everglades Protection District and the University of Florida, IFAS. November 2003. All photos taken within the EAA and are copyrighted by Michelle L. Casler. The IFAS Publication Number (IPN) is Circular 1444, and the Digital Library Number (DLN) is UW179. Elise V. Pearlstine is a Post-doctoral Associate, Michelle L. Casler is a Wildlife Research Assistant, and Frank J. Mazzotti is an Associate Professor. All are employed by the University of Florida, Institute of Food and Agricultural Sciences, Ft. Lauderdale Research and Education Center, Ft. Lauderdale, Florida.

This list will be updated as necessary. If you observe species not included on this list, please contact us at University of Florida, IFAS, Davie, FL 33314. (954) 577-6354.

White Ibis