SURVEY FOR COLONIAL NESTING BIRDS ON SEVEN ISLANDS OF COASTAL ALABAMA

Orin J. Robinson and John J. Dindo

INTRODUCTION

Islands of coastal Alabama provide important habitat for birds that nest in large colonies such as wading birds, terns, shorebirds, and Brown Pelicans (*Pelecanus occidentalis*). Because coastal development and severe weather (e.g., hurricanes) can significantly impact the size, desertion rates, and/or establishment of bird colonies, regular monitoring of populations on nesting islands is important to help conserve and manage colonial nesting species. This report presents baseline information from monitoring efforts conducted during the breeding season of 2007 on seven islands on the Alabama coast. The objectives of the study were to identify colonial nesters and to obtain population estimates.

METHODS

Study Areas.— The seven islands that were monitored in 2007 were Gaillard Island (30°30'27.9"N, 88°02'08.1"W), Cat Island (30°19'13.7"N, 88°12'36.7"W), Marsh Island (30°19'14.2"N, 88°13'22.5"W), Isle Aux Herbes (also referred to as Coffee Island; 30°20'32.6"N, 88°15'22.6"W), Robinson Island (30°17'8.2"N, 87°33'4.4"W), Walker Island (30°17'13.5"N, 87°32'28.7"W), and Bird Island (30°16'53.0"N, 87°33'5.5"W).

Gaillard Island is a man-made, dredge spoil island in Mobile Bay that is approximately 2.6 km (1.6 mi) at its greatest width and 3.6 km (2.3 mi) at its greatest length. It is situated just east of Dog River and approximately 17.7 km (11 mi) south of downtown Mobile. The Army Corps of Engineers completed the island in 1981 utilizing the dredge material from the creation of the Theodore ship channel. Prior to Hurricane Katrina, Gaillard Island had a 6.1 m (20 ft) dirt perimeter completely around the island that protected it from storm surge and helps provide ample, protected nesting habitat for numerous species. Dredge spoil islands have proven to be excellent habitat for colonial nesting birds once vegetated (Maxwell and Kale 1977). Gaillard Island is the only known nesting site in Alabama for Brown Pelicans (Fig. 1) and it is also an important nesting site for Laughing Gulls (*Leucophaeus atricilla*), Caspian

Figure 1. Brown Pelican colony on on Gaillard Island (Photo by John Dindo).

Figure 2. Royal Tern colony on on Gaillard Island (Photo by John Dindo).

Terns (*Hydroprogne caspia*), Royal Terns (*Thalaseus maximus*) (Fig. 2), and Sandwich Terns (*Thalaseus sandvicensis*) (pers. observ.). The colony of Laughing Gulls is the largest Laughing Gull breeding colony on the Gulf of Mexico (Stout 1998). During Hurricane Katrina of 2005, Gaillard Island lost much of its berm and a large portion of the dredge spoil from its interior (pers. observ.). In addition to Brown Pelicans and larids, Gaillard Island has been a nesting site for wading birds such as the Great Egret (*Ardea alba*), Snowy Egret (*Egretta thula*), Little Blue Heron (*Egretta caerulea*), Cattle Egret (*Bubulcus ibis*), Tricolored Heron (*Egretta tricolor*), Black-crowned Night-Heron (*Nycticorax nycticorax*), Yellow-crowned Night-Heron (*Nyctanassa violacea*), and White Ibis (*Eudocimus albus*).

Cat Island, Marsh Island, and Isle Aux Herbes are located in Portersville Bay of the Mississippi Sound. Cat Island is approximately 0.45 km (0.28 mi) long and 0.09 km (0.06 mi) wide and is unique among the islands in this area in that the shell hash is deposited in such a way that it forms a ridge (0.5-1 m) around the island and raises the north end of the island 0.91 to 1.21 meters above sea level (Dindo 1991). This allows the growth of vegetation (primarily *Iva frutescens* and *Baccharis hamilifolia*) that provides nesting material for wading birds, as well as support for nests. The salt marsh habitat provides an excellent foraging area for wading birds. Great Egrets, Snowy Egrets, Little Blue Herons, Tricolored Herons, Cattle Egrets, Black-crowned Night-Herons, Yellow-crowned Night-Herons, Green Herons, and White Ibises are wading birds known to breed on Cat Island (Dindo 1991). Royal Terns, American Oystercatchers (*Hematopus palliatus*), and Black Skimmers (*Rynchops niger*) have also nested on the shell hash perimeter of Cat Island (pers. observ.)

Marsh Island is approximately 0.74 km (0.46 mi) long and 0.17 km (0.11 mi) wide and like Isle Aux Herbes, is tidally inundated and the dominant vegetation is black needle rush (*Juncus romericansus*) and marsh cord grass

(*Spartina alterniflora*). Isle Aux Herbes has an approximate length of 4.68 km (1.38 mi) and width of 1.06 km (0.66 mi). Isle Aux Herbes was not a known site for colonial nesters until 2004, when a few wading birds were observed nesting on the west side of the island in a small patch of marsh elder (*Iva frutescens*) (pers. observ.). There has never been any known colonial nesting on Marsh Island.

In August 2005, Hurricane Katrina scoured all the vegetation used by the birds for nesting on Cat Island, but Marsh Island and Isle Aux Herbes were less affected because they were dominated by marsh vegetation. The new wading bird nesting colony of Isle Aux Herbes was not present during the breeding season following Hurricane Katrina (pers. observ.).

Three islands inside of the Perdido Pass were surveyed: Robinson Island (30°17'8.2"N, 87°33'5.45"W), Walker Island (30°17'13.5"N, 87°32'28.7"W), and Bird Island (30°16'53.0"N, 87°33'5.5"W). These islands are sandy islands with the main vegetation being marsh grasses and some shrubs. Robinson Island is approximately 0.51 km (0.31 mi) long and 0.12 km (0.07 mi) wide. Walker Island is horseshoe shaped with an approximate length of 0.59 km (0.39 mi) and width of 0.19 km (0.12 mi). Both Robinson and Walker islands have small stands of pine trees, but Bird Island does not. The tall pine trees found on Robinson Island have been used for nesting by Great Blue Herons (*Ardea herodias*), Great Egrets, and Snowy Egrets for the past 20 years (pers. observ.). Initial development of Robinson Island by its owner destroyed two thirds of the pine forest used by these birds and hurricane Katrina left only about a dozen trees suitable for nesting. A majority of the shrubs that existed on Walker Island and Bird Island were killed by salt intrusion and have blown over. There is a sea grass bed (*Halodule wrightii*) situated around all three islands that provides excellent foraging opportunities for piscivorous birds.

Survey Methods. — Each island was visited at least twice monthly between January 2007 and September 2007. The islands were visited more frequently when breeding was first observed (3-5 times per month after 30 March 2007). Two or three observers per trip counted the number of individuals of each species that were nesting and the species that were observed but not nesting, including non-colonial nesters. When accurate counts could not be made (e.g. due to an extremely large number of individuals of one species) an estimation technique was used (Sutherland et al. 2004). Data on non-colonial nesters that were of conservation concern were also collected.

RESULTS

Cat Island had the highest counts of nesting colonial wading bird species (nine) and individuals nesting (240) of the seven surveyed islands (Table 1). On Cat Island, the dominant nesting waders were the Cattle Egret and the Tricolored Heron (Table 1). Also of special interest were the nesting Reddish Egrets, a species of "high conservation concern" in Alabama (Table 1; Cooley 2004). Although large numbers of Royal Terns were seen, nesting was not confirmed. Similarly, Least Terns (*Sternula albifrons*) and Gull-billed Terns (*Gelochelidon nilotica*) were also observed, but no nests were found. Although a non-colonial species, the American Oystercatcher is also a species of "high conservation concern" in Alabama, so the four nesting individuals on Cat Island are important to note (Clay 2004).

TABLE 1. Number of nesting wading birds comprising mixed colony between January and September 2007 on Cat Island, Alabama.

Species	Number nesting	Percentage of colony
Cattle Egret	80	33.30%
Tricolored Heron	83	34.50%
Great Egret	23	9.50%
Snowy Egret	25	10.40%
Reddish Egret	3	1.25%
White Ibis	15	6.25%
Black-crowned Night-Heron	6	2.50%
Yellow-crowned Night-Heron	3	1.25%
Little Blue Heron	2	0.80%

Like Cat Island, Gaillard Island had relatively high counts of nesting colonial wading bird species (seven) and individuals (239) (Table 2). However, Great Egrets and Reddish Egrets were not nesting on Gaillard Island and the numbers and percentages of nesting Cattle Egrets and White Ibis were higher than on Cat Island. In addition, on Gaillard Island non-wading colonial species were found nesting. Approximately and conservatively, 4,000-5,000 Brown Pelicans, 10,000-12,000 Laughing Gulls, and 12 Black Skimmers were nesting. Also, Royal and Caspian terns were observed in large numbers and were assumed to be nesting.

On Isle Aux Herbes, only 49 nests were observed and very few could be attributed to a species. The majority of the birds observed around the nests were Cattle Egrets and Tricolored Herons. At least one Reddish Egret was

TABLE 2. Number of nesting wading birds comprising mixed colony between January and September 2007 on Gaillard Island, Alabama.

Species	Number nesting	Percentage of colony
Cattle Egret	144	60.25%
Tricolored Heron	20	8.36%
Snowy Egret	9	3.77%
White Ibis	50	20.92%
Black-crowned Night-Heron	7	2.92%
Yellow-crowned Night-Heron	6	2.51%
Little Blue Heron	3	1.25%

confirmed nesting on Isle Aux Herbes (Roger Clay, pers. comm.). Two species of non-wading, colonial nesting birds were confirmed nesting; 137 Royal Terns and 110 Black Skimmers. Six American Oystercatchers were also found nesting. No nesting occurred on Marsh Island.

The three islands of Perdido Pass had considerably less colonial bird nesting activity. On Robinson Island, nine Great Blue Heron nests and three Great Egret nests were counted in pine trees, but no non-wading, colonial birds were breeding. On Walker Island, 19 Green Herons (*Butorides virescens*) were nesting, but on Bird Island no nests of colonial birds were found.

DISCUSSION

The colony of wading birds on Cat Island seems to have decreased significantly since the counts made in 1988 (Dindo 1991). For example, 440 wading bird nests within 0.76 m (2.5 ft) of three 100 meter transects were counted (i.e., not all the nests were counted on the island), but in 2007, only 238 nests were found on the whole island. We suspect that Hurricane Katrina contributed to this decline. Further, Glossy Ibis (*Plegadis falcinellus*) and Green Herons once nested on Cat Island (Dindo 1991), but we found neither species in our survey.

On Isle Aux Herbes, however, there is evidence that the size and richness of the nesting wading bird colony is increasing. In 2004, only a few wading birds were observed nesting on Isle Aux Herbes, while in 2007, 49 wading bird nests were observed. The majority of the birds observed on Isle Aux Herbes were Cattle Egrets and some Tricolored Herons (the two most common nesters on Cat Island). The loss of nesting habitat on Cat Island may have been the

cause for the establishment of a colony on Isle Aux Herbes. Additional monitoring is needed to see if this increase continues and to better understand the causes. The absence of colonial nesting on Marsh Island can probably be attributed to the low elevation of this island.

Our study clearly indicates the importance of Cat and Gaillard islands to colonial nesting birds in Alabama. Regular monitoring of the nesting colonies on these islands, as well as other islands, is critical if we are to understand the dynamics of colonial bird populations and make sound conservation and management decisions.

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Orin J. Robinson and **John J. Dindo**, University of South Alabama Department of Marine Sciences, Dauphin Island Sea Lab, 101 Bienville Blvd., Dauphin Island, AL 36528.

FIRST RECORD OF THE INCA DOVE (*COLUMBINA INCA*) FOR ALABAMA

Robert A. Duncan and Lucy R. Duncan

On 19 April 2008, at about 1340 hrs, we spotted a small dove feeding on the ground with Blue Grosbeaks (*Passerina caerulea*) in the "moat" on the southeast side of Ft. Morgan, Baldwin County, Alabama. We immediately recognized it as an Inca Dove (*Columbina inca*) as we have had considerable exposure to the species in the southwestern United States and Mexico. Lucy Duncan heard its distinctive *cooo-coo* "no hope" call almost simultaneously with the sighting. She immediately began to take photographs for documentation.

The bird was smaller than a Mourning Dove (*Zenaida macroura*), overall light grayish in color with a paler head. The head, nape, back and wings had a distinct scaly pattern formed by darker feather edgings. The long, slightly darker tail was edged in white. A finer scaly pattern was evident on the belly and flanks. The bill was completely dark. The primaries flashed rufous in flight. Both the long tail and its call notes separated it from the Common Ground-Dove (*Columbina passerina*) and Ruddy Ground-Dove (*C. talpacoti*), the two other small doves. In the original thirty-minute observation, the bird flew from the weedy moat area where it was feeding to the top of the fort wall