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**NESTING COLONIES OF SEABIRDS AND WADING BIRDS—
COASTAL LOUISIANA, MISSISSIPPI, AND ALABAMA**

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U.S. Fish and Wildlife Service
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A contribution of the Louisiana Cooperative Wildlife Research Unit, Louisiana State University, Louisiana Wildlife and Fisheries Commission, Wildlife Management Institute, and the U.S. Fish and Wildlife Service cooperating.

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Fish and Wildlife Service
U.S. Department of the Interior

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PREFACE

This report will be one of several recounting the results of 1976 surveys of nesting colonies of egrets, herons, gulls, terns, and their allies in coastal areas along the U.S. Atlantic coast, the U.S. Great Lakes area, and the northern Gulf of Mexico area.

Publication of the results will aid resource managers. Moreover, the hope is that as citizens learn more about the resources, they will appreciate even more the interrelationships among coastal processes and resources.

Any suggestions or questions regarding this report should be directed to:

Information Transfer Specialist
National Coastal Ecosystems Team
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NSTL Station, Mississippi 39529

EXECUTIVE SUMMARY

Large populations of seabirds and wading birds occur along the productive coastal areas of Louisiana, Mississippi, and Alabama (northern Gulf of Mexico). This report describes the results of the 1976 survey of this area to locate nesting colonies of these birds, to estimate species composition and numbers, and to determine chronology of breeding. One hundred sixty-eight colonies totaling more than 847,000 breeding birds of 26 species were found in habitats ranging from swamp forests to coastal marshes and barrier islands. Colonies were mapped and cataloged on 1:250,000 scale U.S. Geological Survey base maps and by latitude and longitude coordinates. Abundance was tabulated by species, salinity, and habitat type.

The most abundant species, in decreasing order, were Louisiana heron, snowy egret, cattle egret, white ibis, little blue heron, great egret, laughing gull, and sandwich tern; their abundance ranged from 139,905 individuals to 55,682 individuals. The most widely distributed species were, in decreasing order, the great egret, snowy egret, Louisiana heron, little blue heron, least tern, black skimmer, Forster's tern, and black-crowned night heron. The brown pelican, common tern, and sooty tern each were found only in single colonies. The most numerous species were cattle egret, little blue heron, and white ibis in freshwater habitats; and Louisiana heron, laughing gull, sandwich tern, and snowy egret in saline habitats.

The most abundant nesting birds in the various wetland habitats were: white ibis in cypress swamps; snowy egrets in freshwater marshes; snowy and great egrets in brackish marshes; Louisiana heron in salt marshes; and the sandwich tern in coastal beach habitat. The high use of salt marshes and adjacent coastal beaches by colonial nesters was disproportionate to the relative area of available wetland habitats.

Reproductive activity occurred from February through July within heronries and from April through August within gull, tern, and skimmer colonies. Timing of reproduction appears unrelated to general habitat type, latitude, or longitude.

The technique recommended to survey seabirds and wading birds along the Louisiana, Mississippi, and Alabama coasts is the use of a small fixed-wing float plane, because of its high speed, its low cost, and its ability to land in a variety of places. Large heronries of the coastal

marsh could not be accurately censused from any type of aircraft. Inventories using nest counts are considered more representative of current nesting abundance than those based upon counts or estimates of birds because counts of nests are not immediately affected by weather, feeding conditions, or time of day. Some birds could be counted directly on aerial photographs. These counts are considered representative of nesting abundance of black skimmers, when photos are taken at midday during incubation, because the bird-to-nest ratio is reasonably constant ($\hat{r} = 0.89$).

The aerial photographic count of incubating adults was the most rapid, reliable, and least disturbing of census techniques, but was only useful for a few highly conspicuous species that nest synchronously. Species in this category include great egrets, royal terns, and sandwich terns. Belt transect sampling produced reliable nest estimates and proved especially useful on large heronries containing species that could not be assessed visually or photographically from aircraft. The total ground count of active nests was a very accurate method for conspicuous nests in open situations. Least reliable of all census methods tried was the visual aerial estimate of heronries. Dark-colored species and species that nested beneath vegetation could not be seen by aerial observers. A linear equation was developed to predict heronry population size on mangrove islands; however, more data are needed to test the reliability of the equation.

Only 11 percent of the 168 colonies censused in this study were protected, either by posting signs or by restricting human access. Most intruders observed during the course of this study were simply curious and unaware of the possible damage consequent from their presence in bird colonies.

This report was submitted in fulfillment of Contract 14-16-008-1187, by Louisiana Cooperative Wildlife Research Unit, Louisiana State University, under the sponsorship of the Office of Biological Services, U.S. Fish and Wildlife Services.

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ABSTRACT

From February to August 1976, personnel of the Louisiana Cooperative Wildlife Research Unit surveyed the gull, tern, skimmer, pelican, cormorant, anhinga, heron, egret, and ibis colonies along the Louisiana-Mississippi-Alabama coast. One hundred sixty-eight colonies, including over 847,000 breeding birds of 26 species, were found in coastal habitats ranging from swamp forests to coastal marshes and barrier islands. Colonies were mapped on 1:250,000 scale USGS maps and cataloged by latitude and longitude coordinates. Abundance was tabulated by species, salinity, and habitat type. Nesting chronology of the common breeders was outlined. Heronries were active from February through July; seabird colonies, from April through August.

Aerial and ground-based inventory techniques were used. Reliability of the various census and sampling methods for the 26 species in diverse nesting situations was evaluated. Aerial photography produced accurate censuses of incubating great egrets (*Casmerodius albus*), sandwich terns (*Thalasseus sandvicensis*), and royal terns (*Thalasseus maximus*). Randomly placed 2-m-wide belt transects yielded representative samples of active heron, egret, and ibis nests in large shrub colonies.

Only 18 of the 168 colonies were protected by posting or by restricting human access.

KEY WORDS

Waterbirds
Wading Birds
Breeding Birds
Ibises
Skimmers
Alabama

Oystercatchers
Seabirds
Herons
Gulls
Louisiana
Coastal Zone

Nesting Colonies
Egrets
Terns
Mississippi

INTRODUCTION

The abundant seabirds (gulls, terns, and skimmers) and wading birds (herons, egrets, ibises, and spoonbills) of the Louisiana, Mississippi, and Alabama coasts (northern Gulf of Mexico) are a conspicuous component of coastal and estuarine ecosystems. Their diet makes these species particularly sensitive to environmental contamination concentrated at high trophic levels. Scientists currently view this sensitivity as a highly suitable measure of overall environmental quality, a measure becoming increasingly important as technology expands into coastal areas.

Changes over time in nesting populations of colonial seabirds and waders may be used as biotic indicators of the stability of coastal ecosystems. This obviously requires the collection of reliable coastwide data for future comparisons. Moreover, without accurate and current data on colony locations and species abundance, local and national decisionmakers cannot effectively enact colonial-bird protection regulations.

This baseline information was lacking for the northern Gulf of Mexico coast, despite the observed richness of the resident avifauna. As part of a U.S. Fish and Wildlife Service program to establish a nationwide data base for all coastal colonial nesters, the Louisiana Cooperative Wildlife Research Unit conducted a field inventory of colonial seabirds and wading birds of the coastal zone from Sabine Lake, Louisiana, to Mobile Bay, Alabama, during the 1976 breeding season.

Study objectives were: 1) to compile all available historic records of colonial nesting within the study area; and 2) to survey the Louisiana-Mississippi-Alabama coastal zone during spring and summer 1976 to locate seabird and wading bird colonies, estimate nesting abundance by species at each colony, and document nesting chronology for each species.

MATERIALS AND METHODS

STUDY AREA

The geographic extent of the historic review and field work initially included the fresh, brackish, and saline marshes; cypress-tupelo (*Taxodium-Nyssa*) swamps; coastal bays; and barrier islands from Sabine Lake to Mobile Bay and north to the Gulf Intracoastal Waterway. Additional heronries around Lakes Maurepas, des Allemands, and Salvadore and within the Atchafalaya Basin were included to supplement earlier work (unpublished data from A. Sprunt IV, National Audubon Society, Tavernier, Florida), and to more completely describe nesting in the coastal wetlands.

The study area consisted of about 2.4 million hectares (ha) of coastal marsh and swampland, along with an undetermined area of coastal beach ridges and barrier islands. Saline, brackish, and freshwater marshes were arranged in a south-to-north pattern behind barrier beaches and comprised roughly 364, 810, and 530 thousand ha, respectively (Chabreck 1972). For this study, salt marsh was identified by the predominance of smooth cordgrass, locally called oystergrass (*Spartina alterniflora*); brackish marsh, by salt meadow cordgrass, locally called wiregrass (*Spartina patens*); and freshwater marsh, by the presence of black willow (*Salix nigra*) or button-bush (*Cephalanthus occidentalis*). Cypress swamp comprised roughly 690,000 ha (unpublished data from B. Gane, Center for Wetland Resources, Louisiana State University, Baton Rouge) and usually occurred north of fresh marsh (Figure 1).

SPECIES

Scientific and common names used throughout this report follow the AOU Checklist (1957) and subsequent supplements (1973, 1976).

Study species included all herons, egrets, ibises, gulls, terns, and skimmers that could be found breeding within the study area. Brown pelicans (*Pelecanus occidentalis*), olivaceous cormorants (*Phalacrocorax olivaceus*), anhingas (*Anhinga anhinga*), and roseate spoonbills (*Ajaia ajaja*) were included in the survey; green herons (*Butorides striatus*) were omitted.

Nests of the glossy ibis (*Plegadis falcinellus*), a species present in small numbers on some coastal colonies east of Atchafalaya Bay, Louisiana,

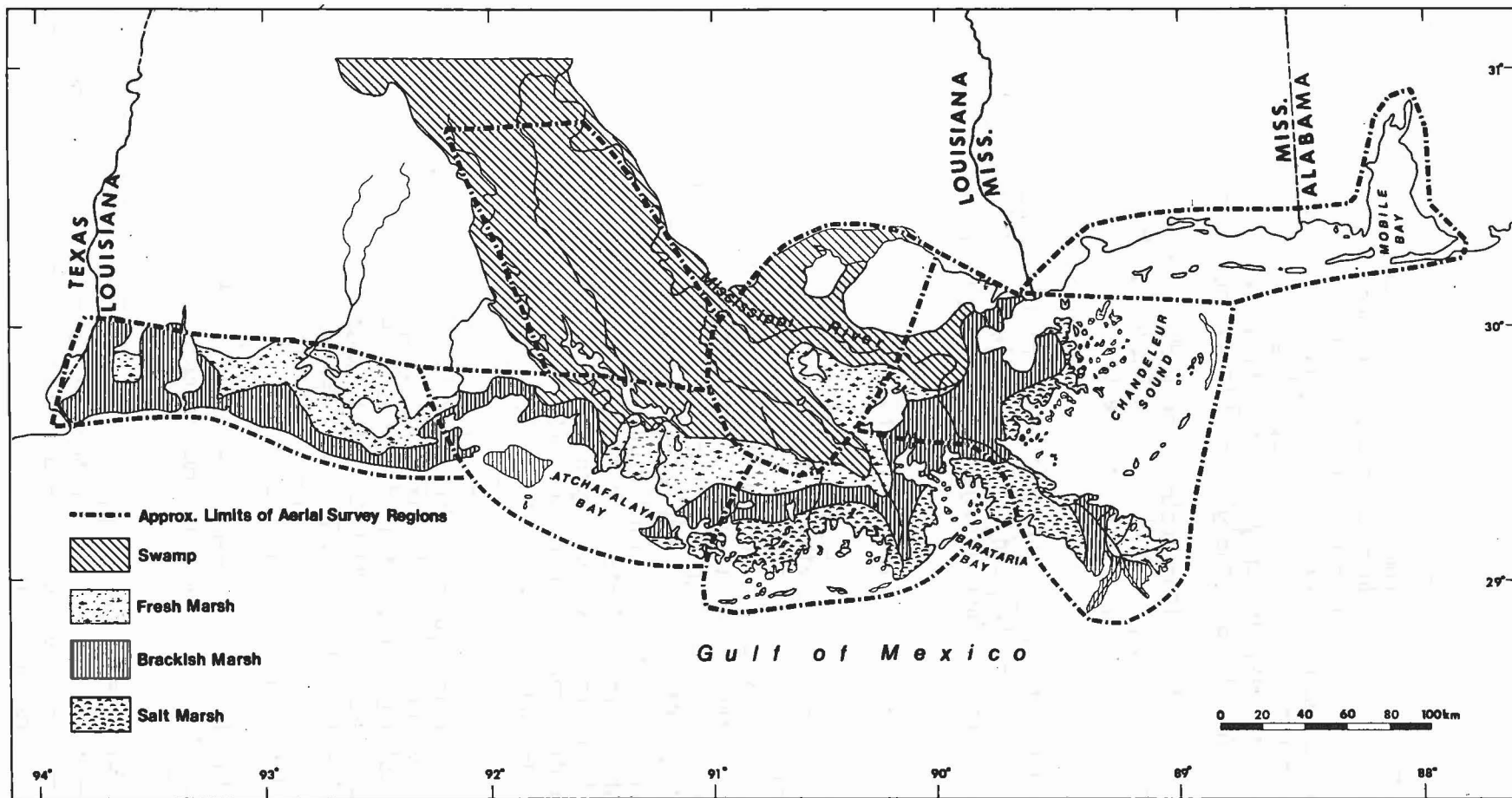


Figure 1. Study area, showing wetland habitat types and aerial survey sections.

were indistinguishable from the nests of the more numerous white-faced ibis (*P. chihii*). Also, adults of the two species could only be separated by time-consuming observations through binoculars (Pratt 1976). Since most estimates of *Plegadis* spp. abundance were based on nest samples, no attempt was made to estimate glossy ibis abundance separately and their nests were probably included in white-faced ibis samples. Locations were noted where the glossy ibis was positively identified.

While ground-sampling seabird and wading bird colonies on offshore and barrier islands, presence of the noncolonial American oystercatcher (*Haematopus palliatus*), a locally rare coastal nester, was recorded (Appendix A).

Appendix B documents the historical review of seabird and wading bird nesting within the study area, compiled from literature review, unpublished accounts, and personal correspondence.

COLONY DISCOVERY AND NESTING SCHEDULES

Aerial search composed the initial phase of the field survey and continued as a major activity throughout the season as additional colonies became occupied by later nesting species. Initial plans involved surveying, by Cessna 172 and 185 fixed-wing aircraft, all traditional nesting areas and all available habitat within the study area at 4- to 6-week intervals. With this intent, we divided the study area into seven regions (Figure 1), each being that area that could be practically surveyed in 5 continuous flight hours. Aircraft required refueling after 5 flight hours, and observer fatigue affected performance on longer flights. Each region was surveyed at least four times from March through July and a different route was usually followed each time to reduce the chance of missing colonies in the extensive marsh and swamplands.

Even though active heronries (i.e., white birds in vegetation) were only visible up to 2 km on either side of the aircraft, the effective path width was much wider in marshland since we searched primarily for suitable nesting habitat, that is: woody vegetation in the predominantly herbaceous marsh. Woody vegetation, usually buttonbush in fresh marsh and black mangrove (*Avicennia germinans*) (L.)L. in salt marsh, was visible up to 5 km on either side of the aircraft, flying at 200 m altitude on a typically hazy Gulf Coast day.

Suitable habitat in swamplands could not be thoroughly searched in the time available; therefore, some colonies in cypress swamps probably were missed.

Patterns of movement by birds flying to and from a suspected nesting area were also used as indicators of colony location. These flight lines became more obvious when adults began feeding young and when food-gathering excursions increased.

Most seabird colonies were located from the air by surveying the entire barrier beach and all coastal and offshore islands, spoil areas, and shell reefs every 4 weeks during May, June, and July. Rotary-wing aircraft were flown at a 20-meter altitude and 64-km/hr speed along mainland and island beaches to locate diffuse and cryptic least tern (*Sterna albifrons*) nesting groups.

Each colony was plotted on 1972 USGS 1:250,000-scale topographic maps. Precise location was difficult on this rapidly changing coast. I compared current topography with 1975 1:80,000-scale hydrographic charts, 1:500,000-scale sectional aeronautical charts, 1969 1:20,000-scale black-and-white aerial photographs and especially 1:120,000-scale 1974 color-infrared aerial photographs. Colonies were plotted within 1.8 km (1 nautical mile) accuracy.

The nesting stage for the majority of individuals of each species was recorded on all visits to all colonies. I believe that few, if any, large colonies were undetected within the coastal marsh and islands during 1976 because of the frequency and timing of aerial surveys. The schedule of aerial and ground visits to all colonies throughout the season is in Appendix C.

ESTIMATES OF ABUNDANCE

The 26 species of seabirds and wading birds nesting in the coastal study area occurred in a wide variety of habitat types, including swamps, open marshes, barrier beaches, and offshore shell reefs. In addition, nesting habitats differed for each species, and for the same species in different habitats. Certain census methods were impractical in certain habitats because of logistics and time limits, and because of the potential for excessive disturbance to nesting birds. Therefore, local and coastwide abundance were estimated by selecting a battery of techniques to fit each situation. An annotated list of the various inventory methods used follows.

Visual Aerial Estimates of Adults Present on Colony

The aircraft was directed in several low (30-to 100-m) passes over the colony while two observers estimated and recorded adults visible, by species. Our pilot flew the aircraft in a clockwise fashion around the perimeter of the nesting area, and both observers estimated from right side windows. The final estimate of adults present was the average of the two observers' estimates. Most flights employed fixed-wing aircraft, usually a Cessna 172 or 185.

Visual Ground Estimates of Adults Present on Colony

Two observers standing in a boat, or standing on the ground at the colony edge, or walking through the colony, estimated adults present on or flushed from the nesting area. The final estimate was the average of both observer's estimates.

Aerial Photographic Counts of Adults Present on Colony

This method was used for black skimmers (*Rynchops niger*) only. Photographs were taken through the open side window of fixed- or rotary-wing aircraft at altitudes of roughly 100 m, using a hand-held 35-mm camera with 55-mm lens and fine-grain, black-and-white film. I photographed each colony once during the initial peak in incubation and at least once later in the season. The predominant nesting stage was ground checked. Adults within the nesting area were subsequently counted on glossy prints (Figure 2). Counts of all active nests (containing eggs or young) were made on the ground on the same day that aerial photography was conducted.

Belt Transect Samples of Active Nests Present on Colony

We sampled 10 percent of the nesting area, during late incubation and early nestling stages, on heronries and seabird colonies, using randomly spaced 2-m-wide belt transects. Transects were run on a bearing perpendicular to the longest axis of the nesting area (Figure 3). To obtain a mean distance between 2-m-wide transects of 20 m, and thereby approximate the 10-percent sample, only random numbers from 2 to 40 were accepted. Random numbers of less than two were excluded to prevent sampling the same area twice on adjacent transects.

We computed the percent sample on any particular colony by dividing the total width of all 2-m wide transects by the total length of the nesting area (i.e., the sum of all the random distances between transect midlines). It was assumed that mean transect length was equal to mean colony width. The reciprocal of the percent sample multiplied by the number of nests found in the sampled area equaled the number of nests expected in the total nesting area.

The bearing of the longest axis of the nesting area was established by inspection upon arrival at the colony. The first transect was placed perpendicular to this line and at a random distance from the edge of the nesting area, determined by location of the outermost nest. All subsequent transects ran parallel to the first transect. Each transect was a random distance from the previous transect. Sampling continued until the next random transect fell beyond the edge of the nesting area. The distance between the last sampled transect and the edge of the nesting area was included in the total colony length.

Transect alignment was maintained by frequent use of a compass. Transect width of 2 m was maintained by frequent use of lateral arm spans as a reference.




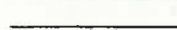
All active nests whose centers fell within the transect were counted and, when possible, assigned to species. Observers moved as quickly as possible to minimize the duration of disturbance.



Figure 2. Black skimmers incubating on a barrier beach of East Timbalier Island, 26 June 1976. The oblique photograph was taken through the open doorway of a helicopter at 90-m altitude using a 35-mm single-lens reflex camera with 55-mm lens and fine-grain film. Adults were individually counted from such prints.

Individual transect lengths, which proved impossible to measure accurately while pushing through dense shrubs, were measured on large-scale aerial photographs of heronry islands taken in July 1976. Vegetative and topographic features, coupled with field notes, facilitated a more precise placement of transects on these photographs. Given the length, width, and number of nests on each transect, I calculated nest density per transect. Treating the nest density of each transect as an observation, I obtained confidence limits on the mean nest density of each sampled colony.

Belt transects were useful on large colonies that could not be counted, where nests were concealed in low, dense shrubs or grass, and where the substrate was not hard enough to support an observer. Specific locations sampled in this way were heronries on coastal islands, Forster's tern (*Sterna forsteri*) colonies in salt marshes, and laughing gull (*Larus atricilla*) colonies in beach grass associations. Typical

-  BOUNDARY OF NESTING AREA
-  LONGEST AXIS OF NESTING AREA
-  TRANSECT MIDLINE
-  EDGE OF 2-M-WIDE TRANSECTS
- a_1 RANDOM DISTANCE FROM EDGE OF NESTING AREA
- $a_2, a_3 \dots a_i$ RANDOM DISTANCES BETWEEN TRANSECTS

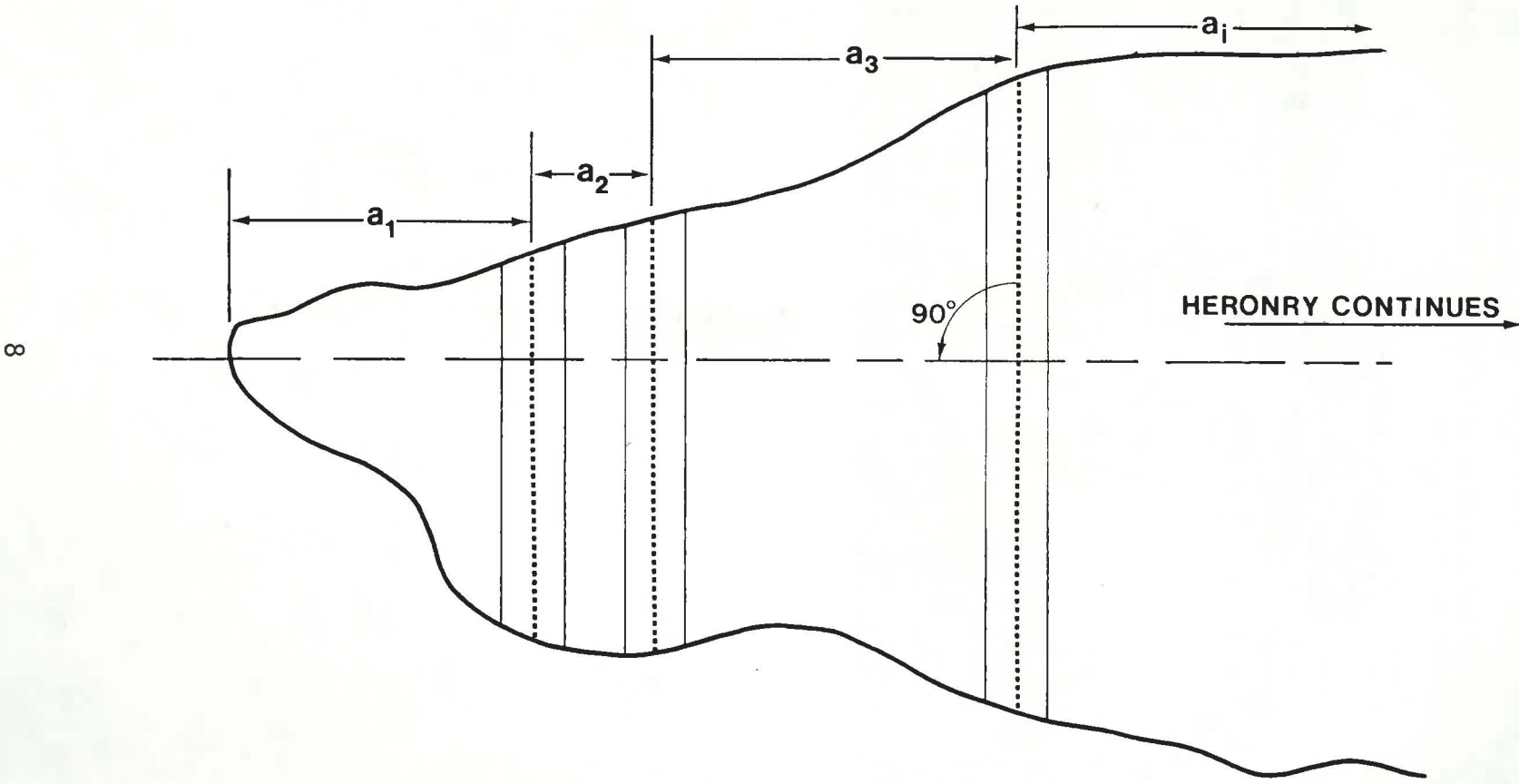


Figure 3. Belt-transect sampling scheme for insular shrub heronries.

heronries in the coastal marsh were sampled a second time in July to assess the importance of late nesting.

Total Ground Counts of Active Nests Present

All nests that contained eggs or young were counted. Two or three observers, positioned about 5 m apart on beach colonies, walked through the nesting area simultaneously and followed the same bearing. Each person counted all active nests between himself and the next person or between himself and the colony edge if his was the first or last transect. Our progress through the colony was marked by our footprints in the sand, so areas were not omitted or covered more than once.

This method was only used for diffuse colonies nesting on open beach or salt marsh, or for counts of rare nesters. Observers moved as quickly as possible without sacrificing accuracy or disturbing nests.

Aerial Photographic Counts of Incubating Birds

Photographs were taken through the open side window of fixed-wing or rotary aircraft at altitudes ranging from 40 m to 100 m, using a hand-held 35-mm camera with 55-mm lens and fine-grain, black-and-white film. I attempted to photograph colonies coincident with a peak in incubation for each local population and subsequently counted incubating birds on 20-by-25-mm glossy enlargements (Figures 4 and 5). The technique required highly synchronous and conspicuous nesting aggregations. Photography was conducted on the same flights as aerial surveys and visual estimates.

NEST IDENTIFICATION

When adults and easily identified nestlings were absent from the nest, it was often necessary during ground inventories to identify the species using a combination of criteria, which included nesting habitat, nest site, nest placement, nest structure, proximity of adults, and characteristics of eggs and young. Eggs of all the common seabirds were easily identified (Figure 6), except for those of black skimmers and gull-billed terns (*Gelochelidon nilotica*). Although these latter two species have similar eggs and commonly nest together, the terns always added material to their scrapes to form a crude bowl. Black skimmers simply dug a scrape by kicking all loose material out of the nesting depression, and did not add nest lining material. Sooty tern (*Sterna fuscata*) eggs, not shown, were characteristically blotched with pink. Two common tern (*Sterna hirundo*) clutches were identified by the proximity of aggressive adults, characteristics of eggs, and nest substrate.

I encountered more difficulties in identifying nests of wading birds. Although characteristics of most species' eggs and young have been well documented (McVaugh 1972, 1975), similarities of eggs of some species (Figures 7 and 8), notably snowy egrets (*Egretta thula*) and Louisiana herons (*Hydrannassa tricolor*), forced us to seek additional characteristics to identify nests in coastal black mangrove heronries. In the case of Louisiana herons and snowy egrets, nest size, structure, and

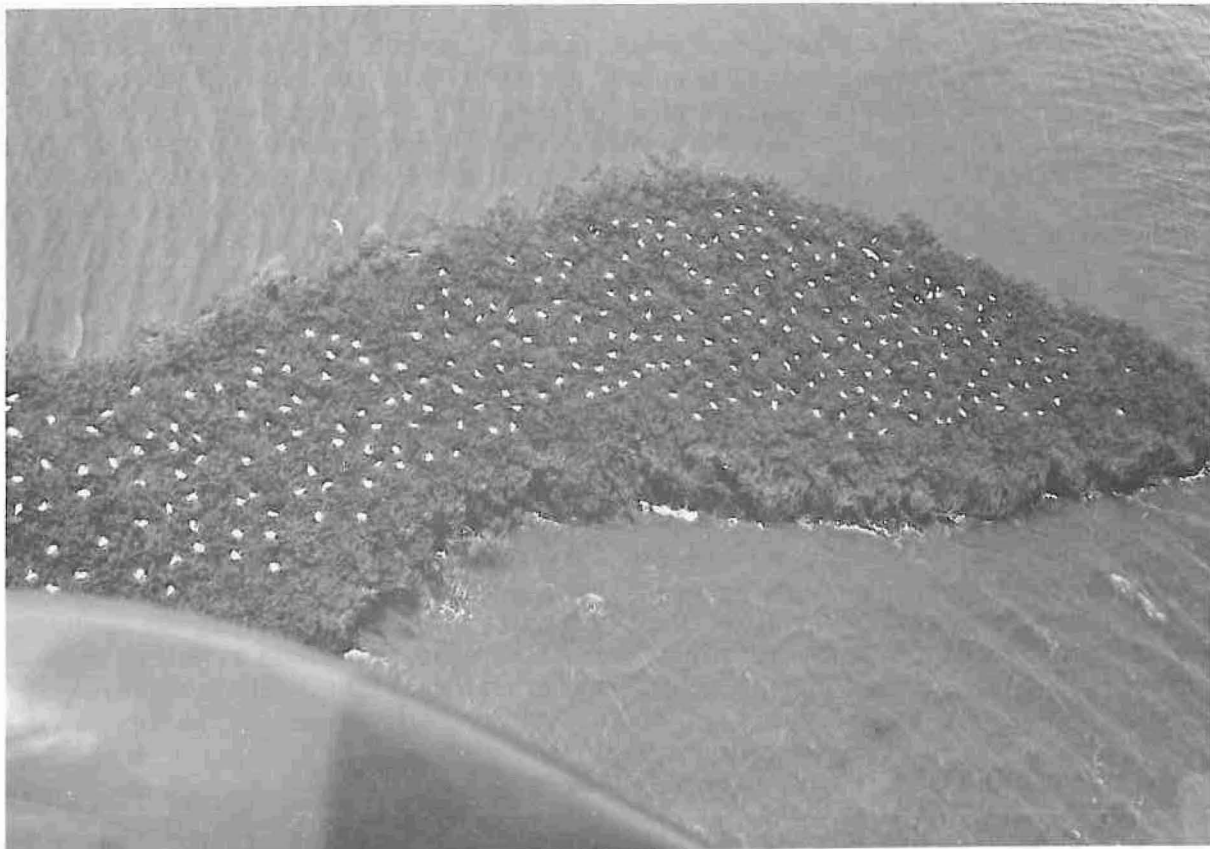


Figure 4. Great egrets incubating atop black mangrove thicket in Barataria Bay, Louisiana, 23 March 1976. The photograph was taken from a small fixed-wing aircraft at 50-m altitude using a 35-mm single-lens reflex camera with 55-mm lens and fine-grain film. There are 279 incubating adults (=nests) visible on this print.



Figure 5. Incubating sandwich and royal terns on the barrier beach of East Timbalier Island, Louisiana, 26 June 1976. Sandwich terns are noticeably smaller and more closely spaced. Nesting black skimmers surround the *Thalasseus* spp. tern colony. The photograph was taken through the open doorway of a small helicopter at 100-m altitude using a 35-mm single-lens reflex camera with 55-mm lens and fine-grain film.

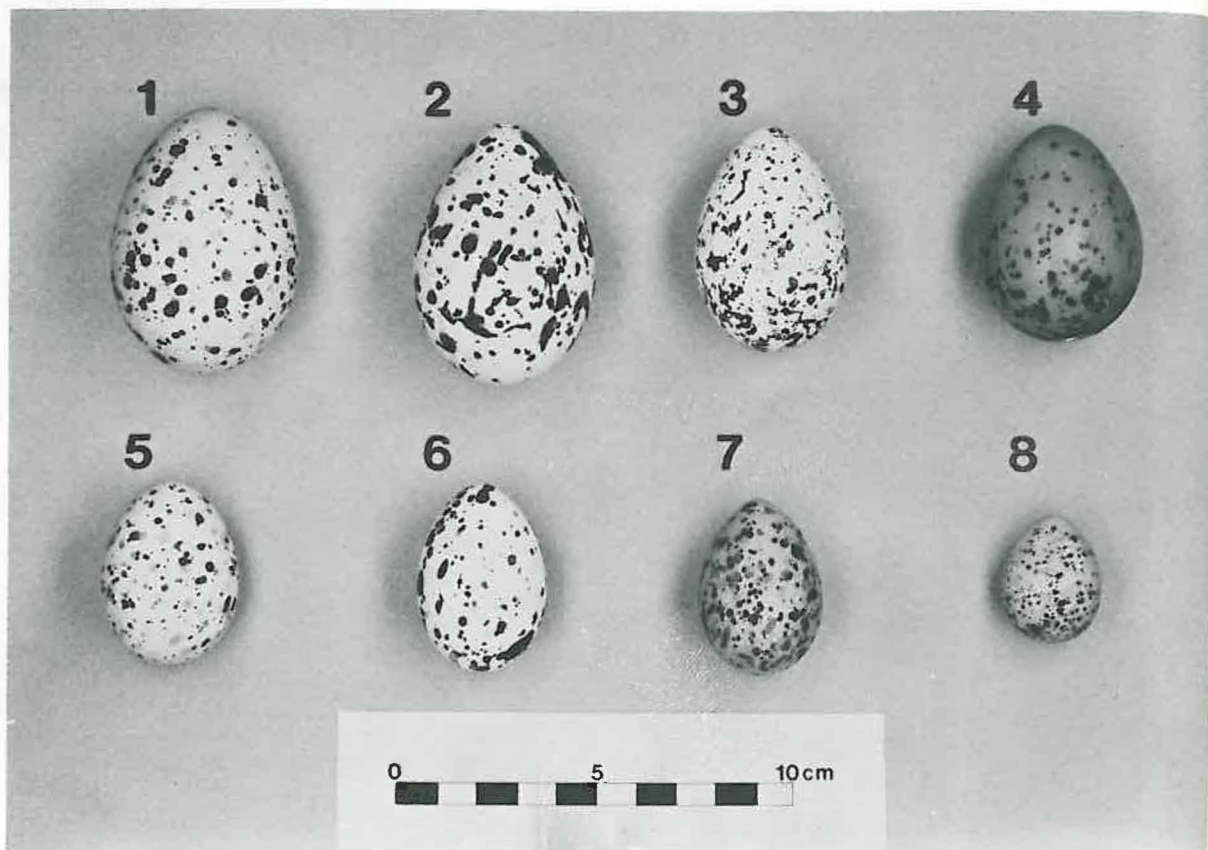


Figure 6. Eggs of some seabirds found nesting on the northern Gulf of Mexico coast during 1976. 1. Caspian tern 2. Royal tern 3. Sandwich tern 4. Laughing gull 5. Gull-billed tern 6. Black skimmer 7. Forster's tern 8. Least tern.

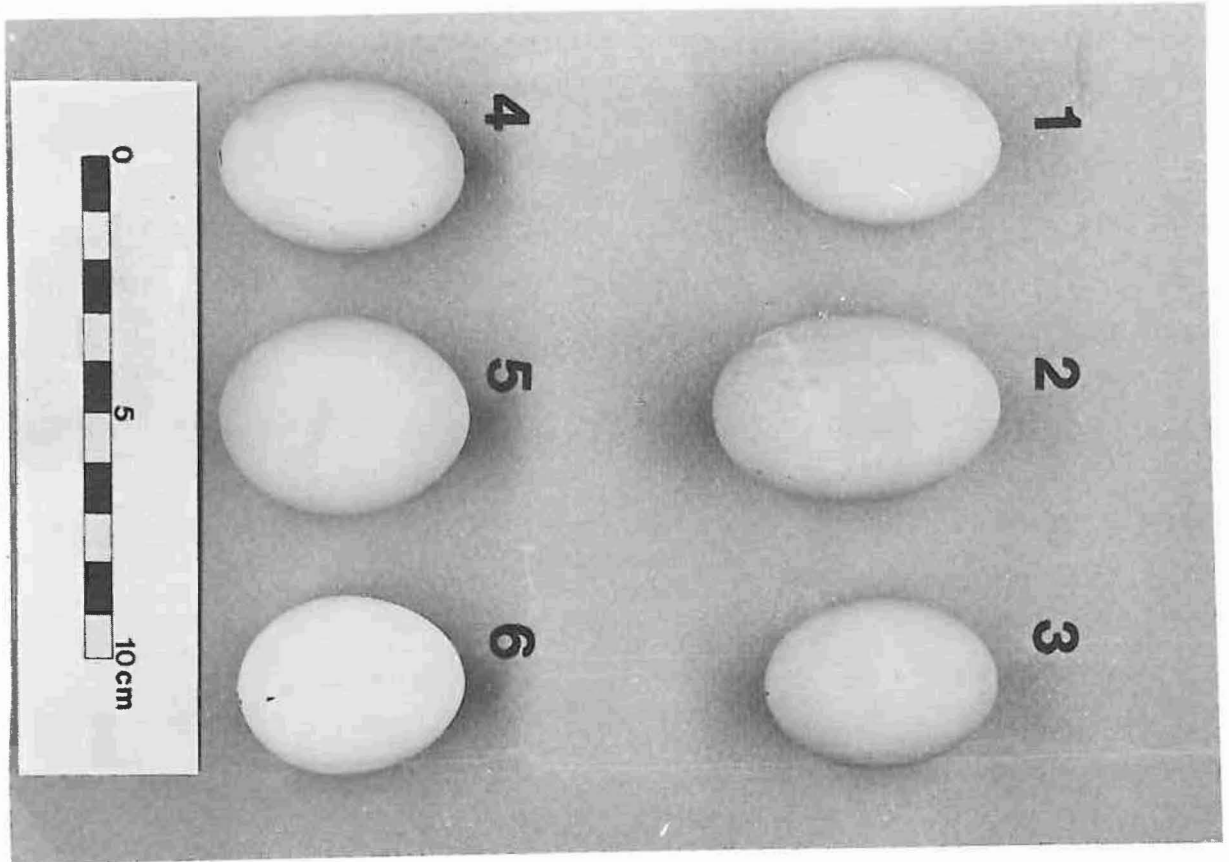


Figure 7. Eggs of some common herons and egrets found nesting on the northern Gulf of Mexico coast during 1976. 1. Snowy egret. 2. Great egret 3. Louisiana heron 4. Little blue heron. 5. Black-crowned night heron 6. Cattle egret.

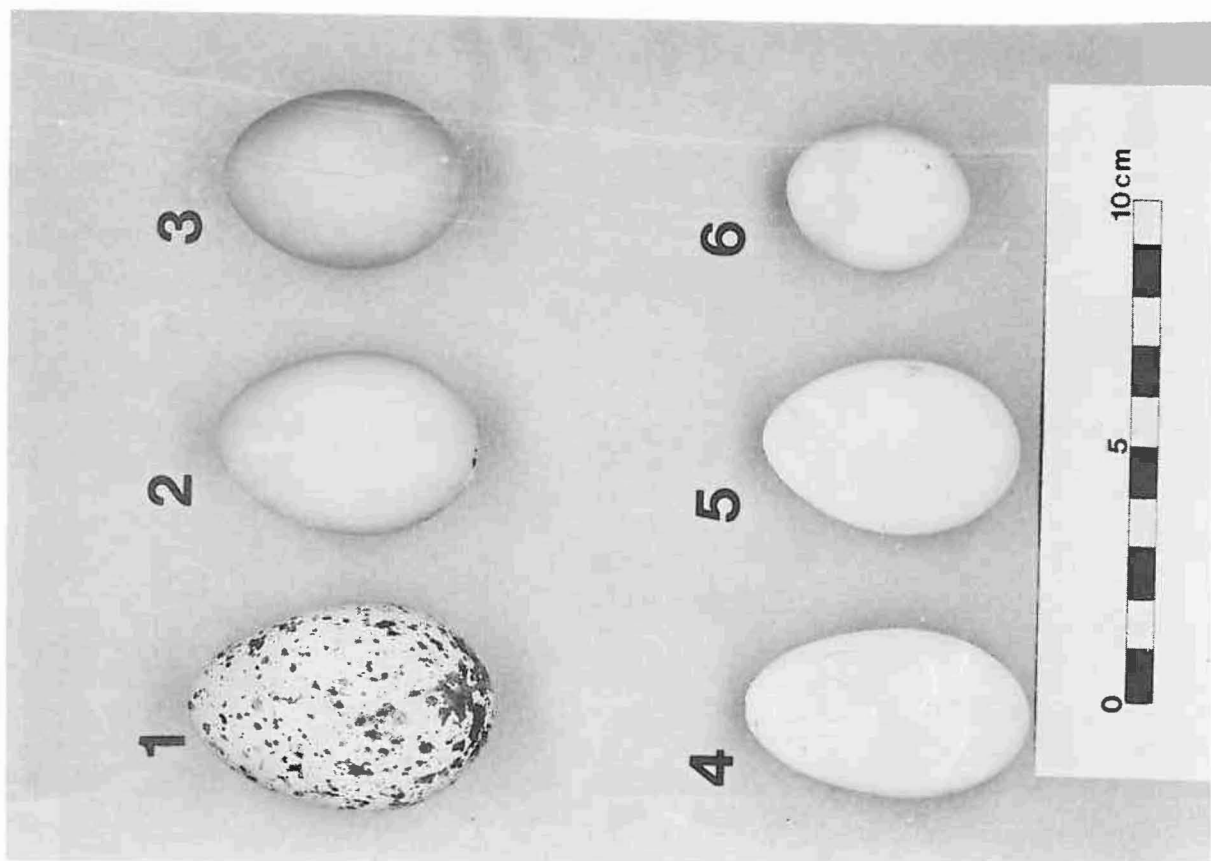


Figure 8. Eggs of ibises, cormorants, and anhingas of the northern Gulf of Mexico coast during 1976. 1. White ibis 2. White-faced ibis 3. White-faced ibis 4. Olivaceous cormorant 5. Anhinga 6. Green heron (*Butorides virescens*), not included in present inventory.

especially placement were helpful in distinguishing nests of species with similar eggs in mangrove heronries. The specific identify of all types of nests were continually tested by flushing adults and by observing nestlings. The following nesting characteristics were noted for heron and egret species:

Great egret (*Casmerodius albus*) - only large (diameter > 50 cm) nest placed on top of shrubs.

Snowy egret - small nest (diameter < 30 cm) completely beneath mangrove canopy.

Louisiana heron - small nest (diameter < 30 cm), placed in partial shade, at edge of mangrove thicket and slightly below topmost branches.

Black-crowned night heron (*Nycticorax nycticorax*) - large nest (diameter > 40 cm), usually low, well under mangrove.

White-faced ibis - thick mound-like nest constructed of, and usually placed on, smooth cordgrass near overhanging mangrove.

White ibis (*Eudocimus albus*) - thick, solid nest in mangrove; nest material included fresh, leafy mangrove sprigs.

Because transect sampling was not possible at most freshwater colonies, the nests of cattle egret (*Bubulcus ibis*) and little blue heron (*Florida caerulea*) were rarely on the ground, and then nests were usually identifiable by the proximity of adults or presence of nestlings. Brown pelican (*Pelecanus occidentalis*), olivaceous cormorant, anhinga, reddish egret (*Dichromanassa rufescens*), yellow-crowned night heron (*Nyctanassa violacea*); and roseate spoonbill nests were recognizable from eggs and nestlings. Nesting colonies of great blue herons (*Ardea herodias*) were not inventoried by the ground count method.

BIRD DISTURBANCE

Disturbance of adults and nestlings by observers intruding into the nesting colonies was apparent from the agitated actions of the birds. Qualitative observations were made of the response of the birds to the presence of intruders. Observations of numerous colonies were made later to determine if the nesting sequence was disrupted by the intrusions.

The decision concerning the length of time needed to conduct a census was balanced between minimizing the duration of disturbance and maximizing accuracy.

COLONY IDENTIFICATION

Colonies are identified by a six-digit number; the first three digits are keyed to a particular USGS 1:250,000-scale topographic map (Figure 9).

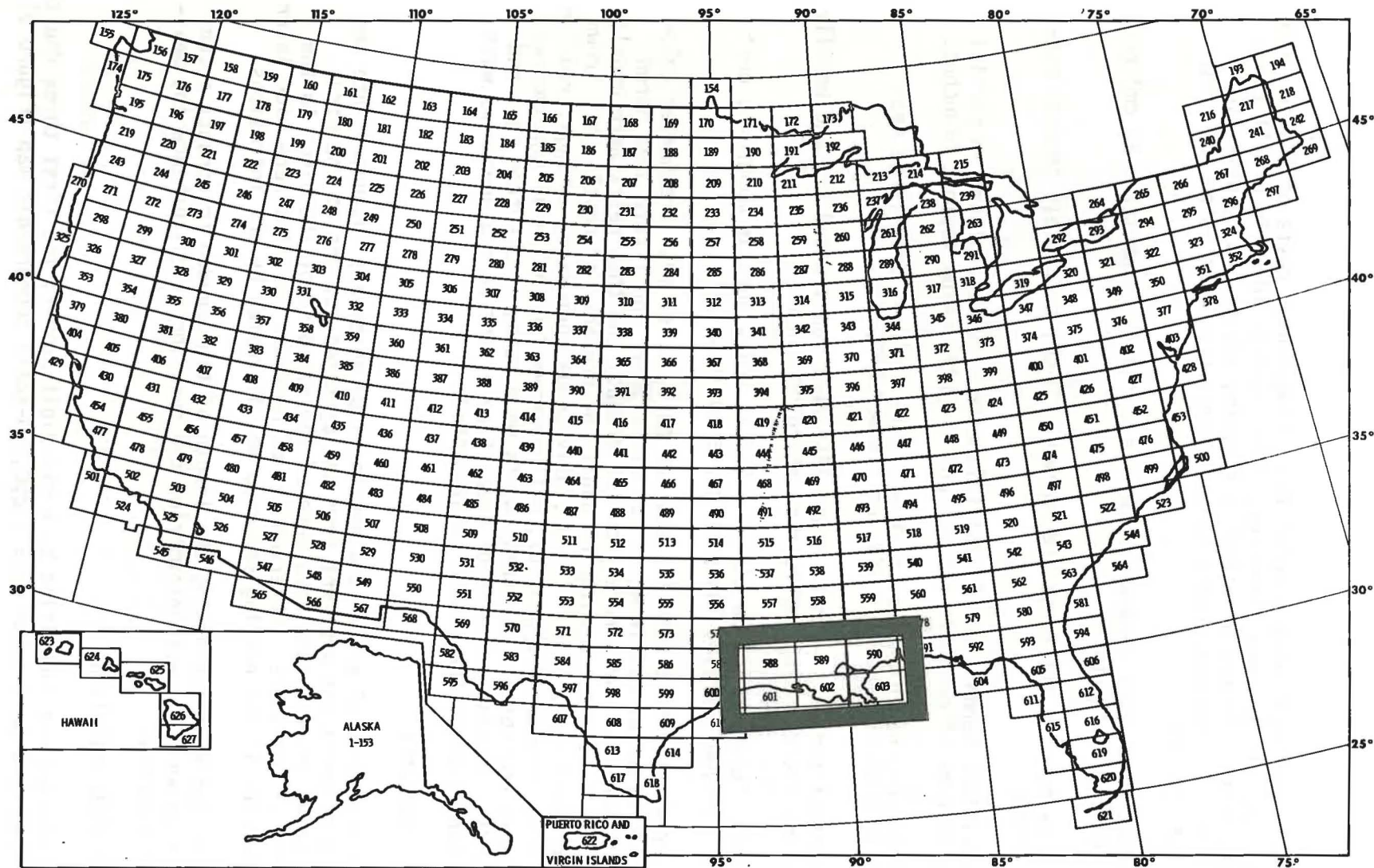


Figure 9. Index to USGS 1:250,000 maps used for this project.

The last three digits indicate the colony located on a specific USGS 1:250,000 map. The colonies were numbered in the order in which they were found.

RESULTS

COLONY LOCATIONS

One hundred sixty-eight wader and seabird colonies, including 26 colonial species, were found within the study area between 27 February and 4 August 1976. Colonies are plotted on reduced copy of drainage separates for the USGS 1:250,000-scale topographic maps (Figures 10 through 15). Each map section is numbered (right-center margin) according to Figure 9. The letter and number codes used on computer-generated tables are explained in Table 1.

For each seabird or wader colony, Table 2 presents colony identification number, map coordinates (accurate to the nearest minute), species composition, abundance, habitat type, and nest site. A similar listing of seabird colonies is given in Appendix D. Colonies occupied by each species are listed in Appendix E.

ABUNDANCE

Although multiple counts were made of most species in most colonies, a single number, representing the highest adult bird count obtained using the most reliable census technique, is given for each colony (Table 2 and Appendix E). For example, we censused sandwich terns (*Thalasseus sandvicensis*) on colony 603037, using two different techniques, on three dates during May and June 1976. Aerial estimates and counts from aerial photographs were the methods used. I selected as the most accurate and representative estimate the aerial photographic count that coincided with an observable peak in incubation, even though the concurrent visual estimate showed a larger number. I converted all nest counts to breeding adult counts, simply by assuming one pair of breeding birds per active nest. For example, aerial photographic counts of incubating sandwich terns (equivalent to active nests) or results of belt transect sampling (of active nests) were doubled to produce bird counts.

On black skimmer colonies, where we collected two equally representative and accurate counts (i.e., aerial photographic count of adults on colony and total ground count of active nests) on a colony on the same date, the nest count was converted to a bird count by multiplying by two, and compared to the concurrent aerial photographic bird count. I selected the larger of the two bird counts as most representative of breeding adults active on the colony at that date. Table 2 presents the maximum count of breeding skimmers obtained at any one time during the nesting season.

For all species and colonies, we obtained the maximum adult bird count during the initial wave of nesting activity, when synchrony was

greatest, and when most individuals were involved in incubation.

Importantly, yellow-crowned night herons and anhingas nested in many small scattered colonies in swamps and on canal spoil banks that were impossible to find and census in the time available. Therefore, these species were grossly undersampled in their freshwater habitats.

SPECIES ABUNDANCE AND NESTING HABITAT

Species abundance is summarized (Table 3) and further sorted by salinity type (Tables 4 and 5) and habitat type (Table 6).

Salinity types were determined by plant communities on or near the colony; water salinity was not directly measured.

Louisiana herons were the most abundant waders nesting in the study area, followed by snowy egrets, cattle egrets, white ibises, and little blue herons. Great egrets were sixth in abundance but nested on more colonies than any other species. Among the seabirds, laughing gulls and sandwich terns were most abundant, followed by black skimmers, royal terns (*Thalasseus maximus*), Forster's terns, and least terns, respectively (Table 3).

Within swamplands, great egrets, great blue herons, and anhingas nested atop mature cypress (*Taxodium distichum*) or tupelo gum (*Nyssa aquatica*) trees. The smaller herons, egrets, and ibises nested in button-bush and shrubby cypress or willow in ponds in the swamp.

Fresh-marsh nesting normally occurred on buttonbush patches. Often such colonies were on shrubbery at the swamp-marsh interface.

Most brackish-marsh nesting was on spoil deposits because suitable nest sites (i.e., shrubs or trees) were unavailable in brackish salt meadow cordgrass marshes. Spoils were commonly vegetated with sea myrtle (*Baccharis halimifolia*), marsh elder (*Iva frutescens*), and common reed (*Phragmites communis*), locally called roseau cane (Table 7).

Salt marsh heronries were in black mangrove thickets on insular marsh fragments and behind barrier beaches. Forster's terns nested on wrack in smooth cordgrass marshes and often adjacent to mangrove heronries.

All other seabird species nested either on salt-marsh shell berms, barrier beaches, or on coastal spoil islands.

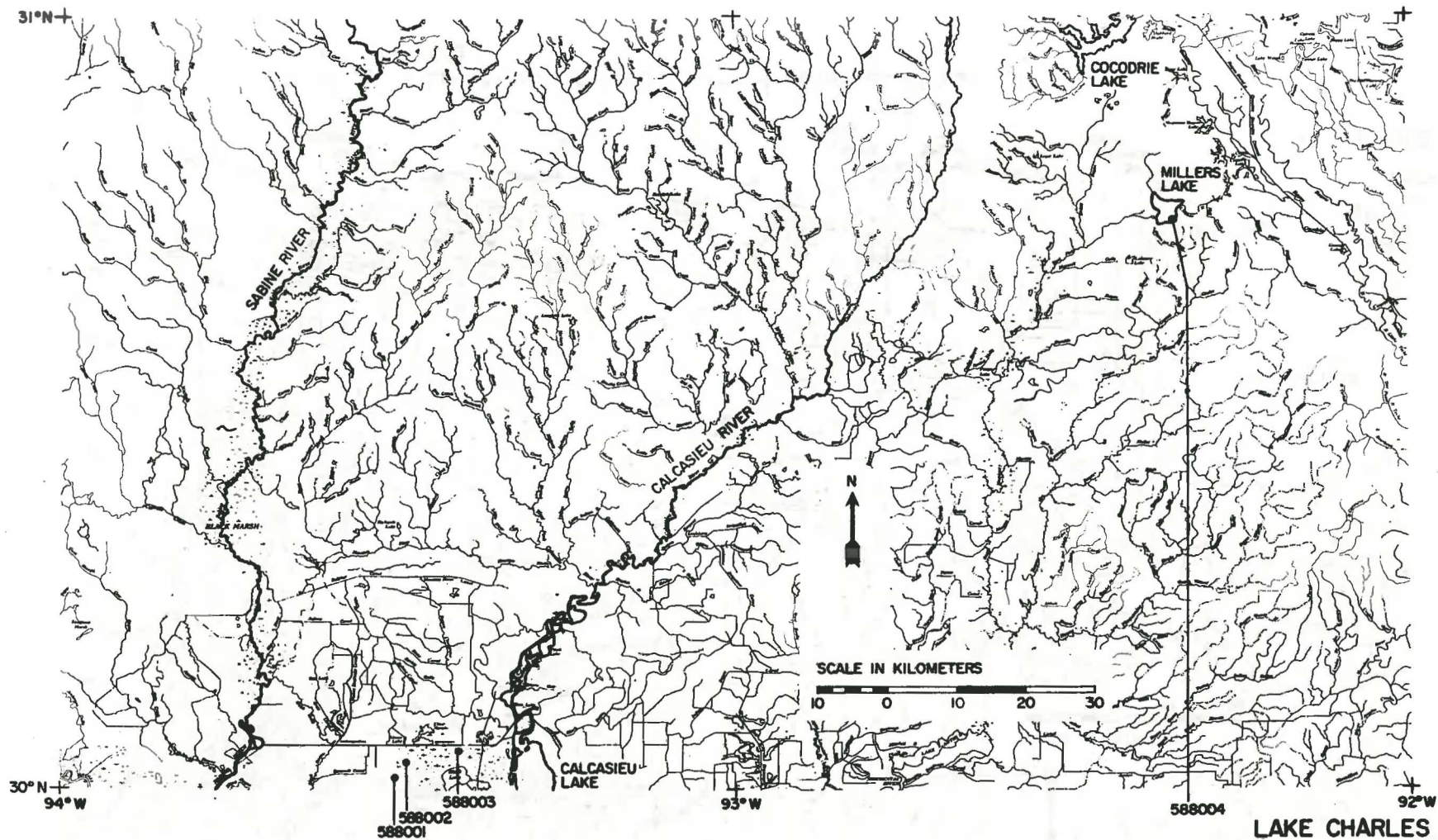


Figure 10. Locations of breeding bird colonies on map section 588 of the study area.

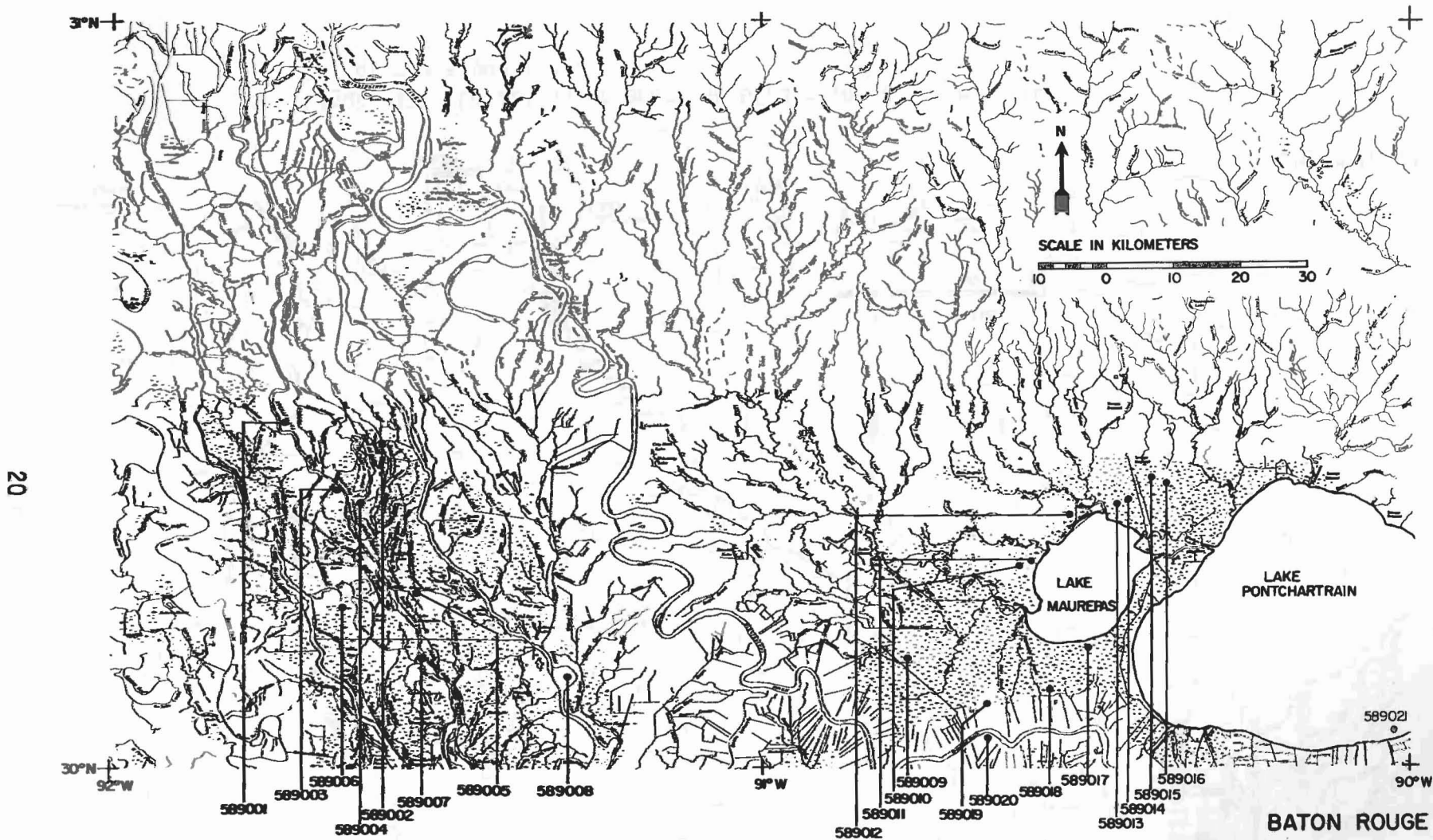


Figure 11. Locations of breeding bird colonies on map section 589 of the study area.

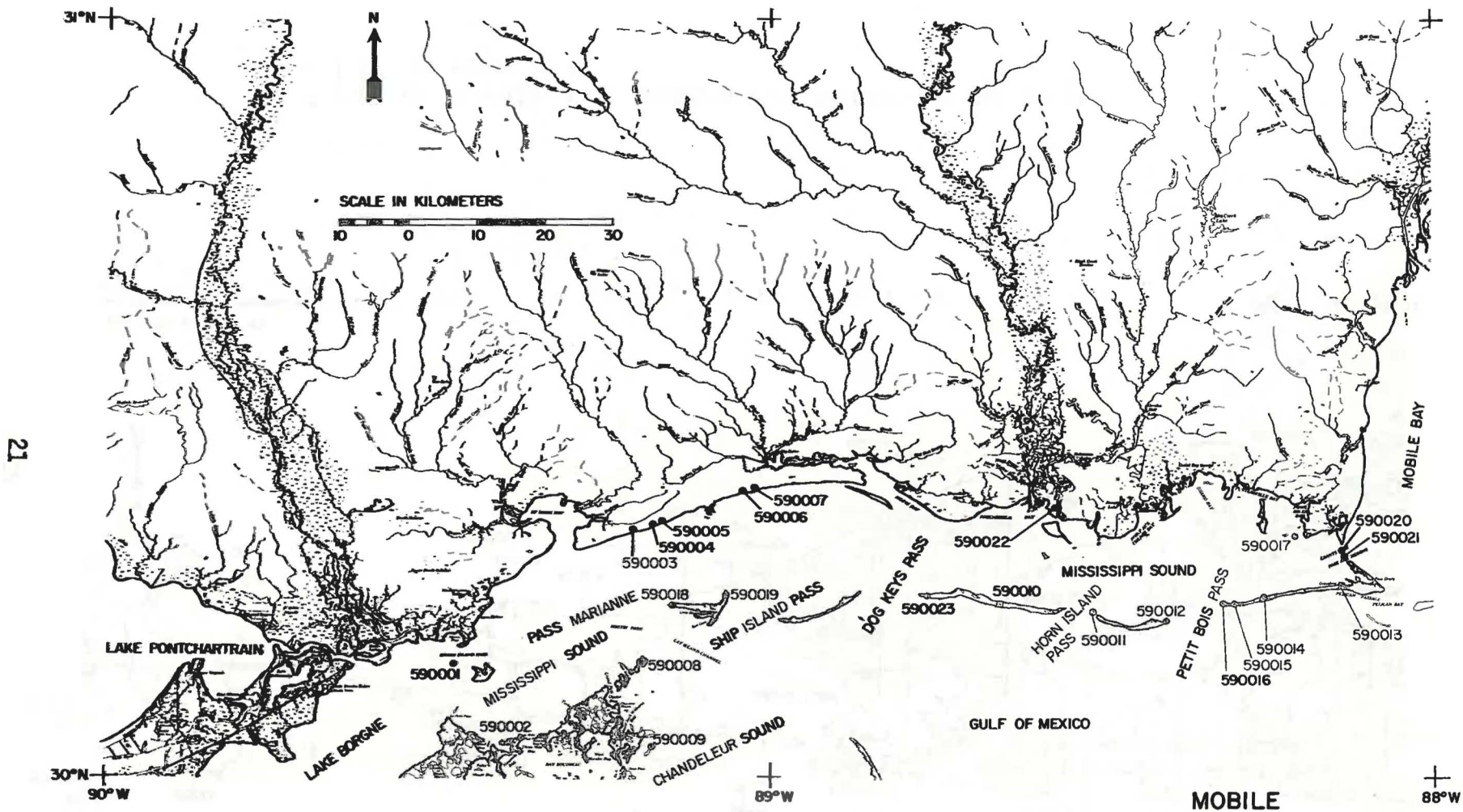


Figure 12. Locations of breeding bird colonies on map section 590 of the study area.

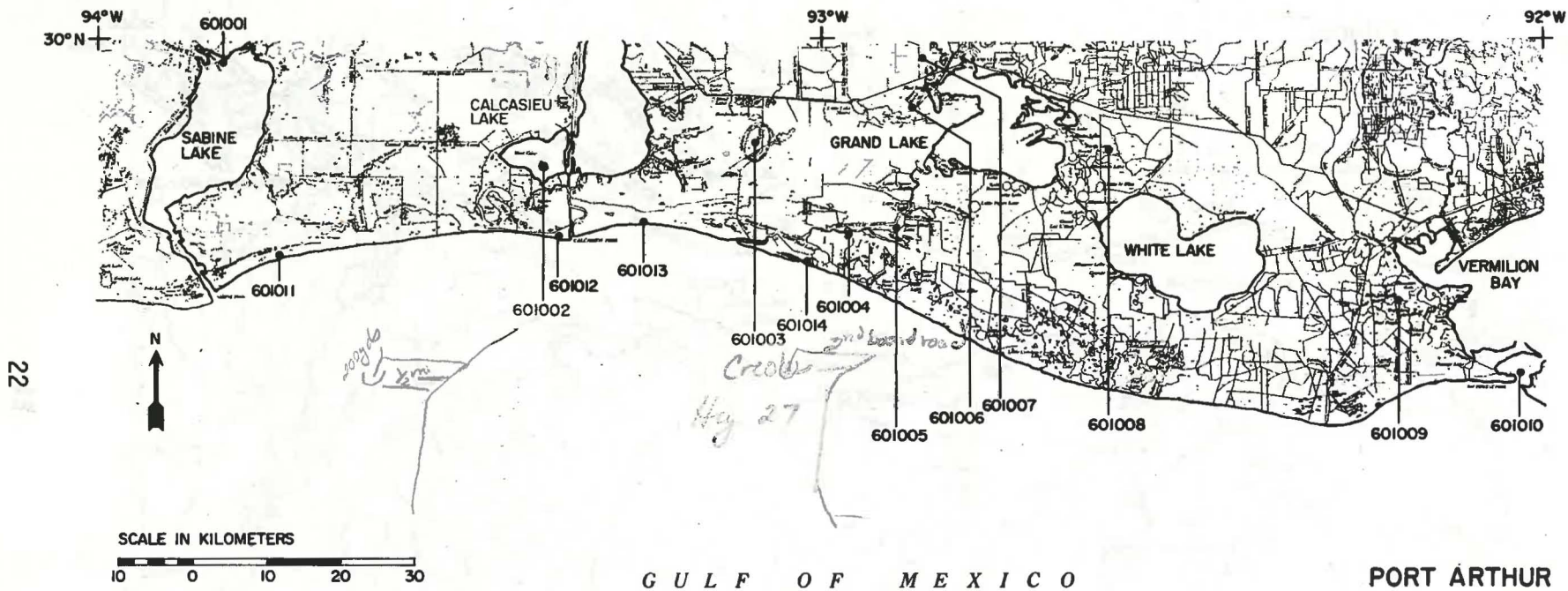


Figure 13. Locations of breeding bird colonies on map section 601 of the study area.

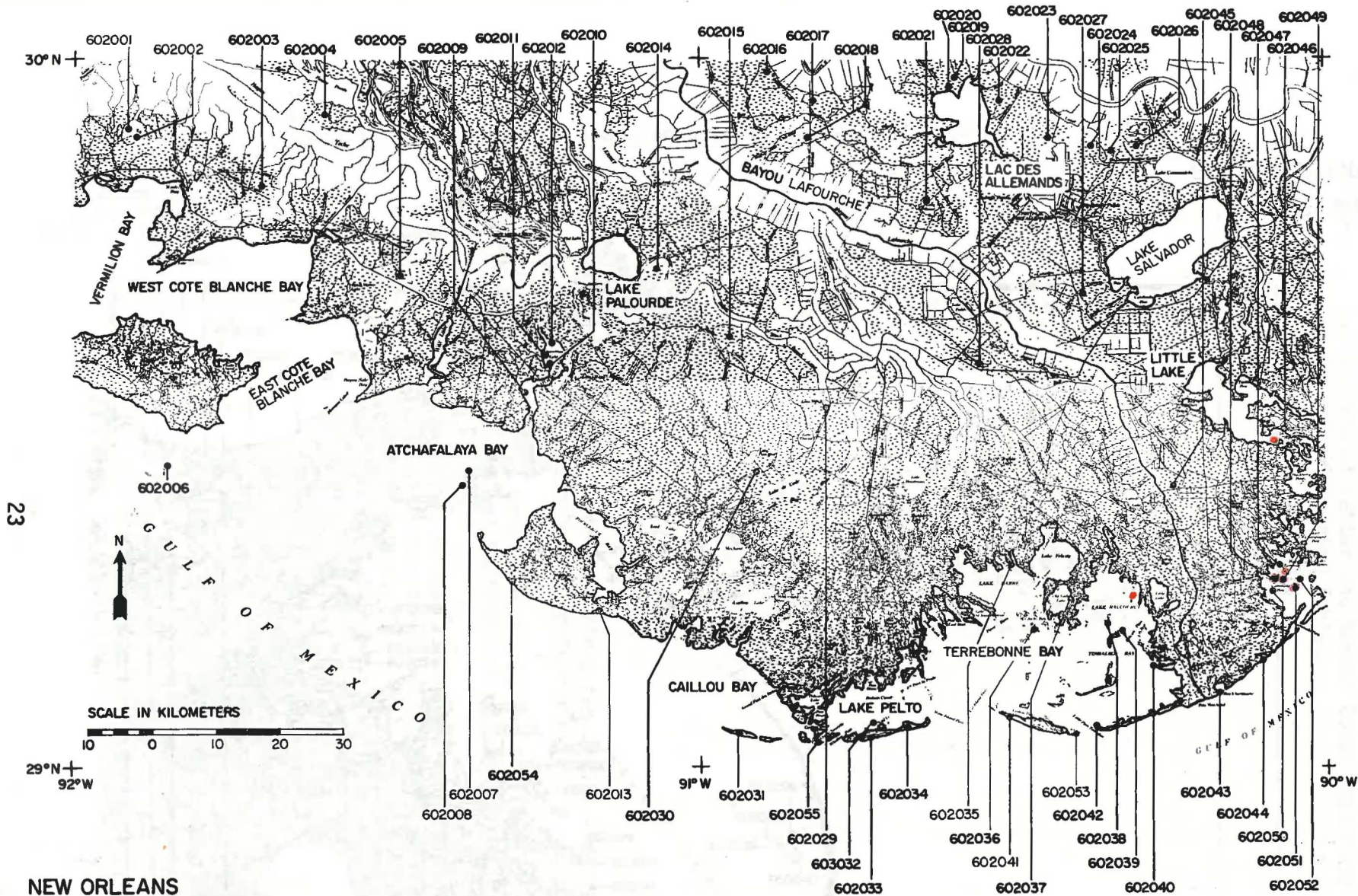


Figure 14. Locations of breeding bird colonies on map section 602 of the study area.

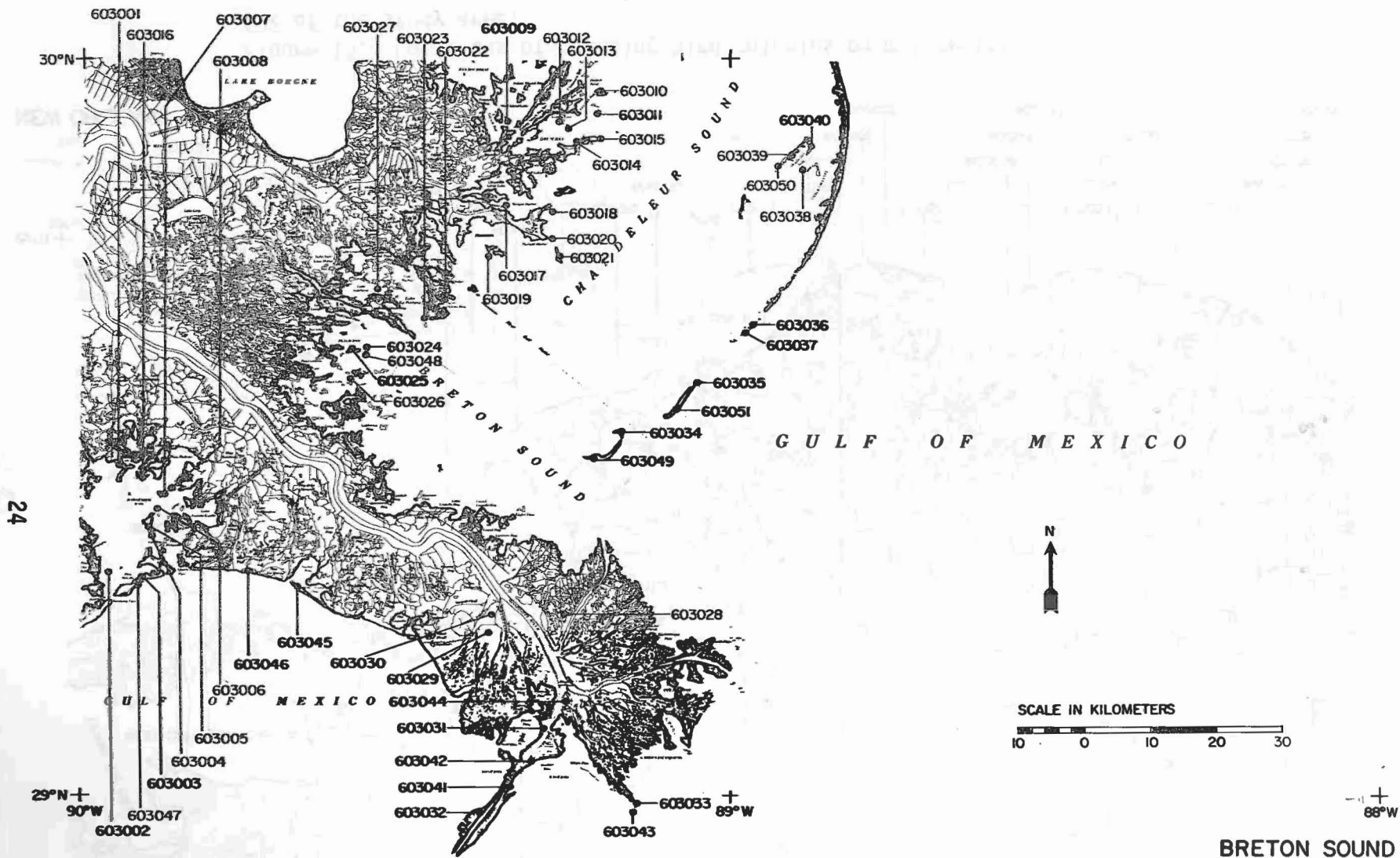


Figure 15. Locations of breeding bird colonies on map section 603 of the study area.

Table 1. Explanation of Letter and Number Codes Appearing on Computer-Generated Tables.

Column	Code	Explanation
PARISH	1	Cameron, LA
	2	Vermilion, LA
	3	Iberia, LA
	4	St. Mary, LA
	5	Terrebonne, LA
	6	Lafourche, LA
	7	Jefferson, LA
	8	Plaquemines, LA
	9	St. Bernard, LA
	10	Orleans, LA
	11	Evangeline, LA
	12	Iberville, LA
	13	St. Martin, LA
	14	St. James, LA
	15	Ascension, LA
	16	St. John, LA
	17	Livingston, LA
	18	Tangipahoa, LA
COUNTY	19	Orange, TX
	20	Harrison, MS
	21	Jackson, MS
	22	Mobile, AL
PARISH	23	Assumption, LA
	24	St. Charles, LA
LATITUDE	0000	N. Latitude; first two digits = degrees; second two digits = minutes
LONGITUDE	0000	W. Longitude; first two digits = degrees; second two digits = minutes
SPECIES	BP	Brown pelican (<i>Pelecanus occidentalis</i>)
	OC	Olivaceous cormorant (<i>Phalacrocorax olivaceus</i>)
	AN	Anhinga (<i>Anhinga anhinga</i>)
	GB	Great blue heron (<i>Ardea herodias</i>)
	GE	Great egret (<i>Casmerodius albus</i>)
	SE	Snowy egret (<i>Egretta thula</i>)
	RE	Reddish egret (<i>Dichromanassa rufescens</i>)
	CE	Cattle egret (<i>Bubulcus ibis</i>)
	LH	Louisiana heron (<i>Hydranassa tricolor</i>)
	LB	Little blue heron (<i>Florida cerulea</i>)
BC	Black-crowned night heron (<i>Nycticorax nycticorax</i>)	
YC	Yellow-crowned night heron (<i>Nyctanassa violacea</i>)	

Table 1. (continued)

Column	Code	Explanation
SPECIES	WF	White-faced ibis (<i>Plegadis chihi</i>)
	PI	White-faced ibis and/or glossy ibis, (<i>P. falcinellus</i>)
	WI	White ibis (<i>Eudocimus albus</i>)
	RS	Roseate spoonbill (<i>Ajaja ajaja</i>)
	LG	Laughing gull (<i>Larus atricilla</i>)
	GT	Gull-billed tern (<i>Gelochilidon nilotica</i>)
	FT	Forster's tern (<i>Sterna forsteri</i>)
	CT	Common tern (<i>Sterna hirundo</i>)
	ST	Sooty tern (<i>Sterna fuscata</i>)
	LT	Least tern (<i>Sterna albifrons</i>)
	SN	Sandwich tern <i>Thalasseus sandvicensis</i>)
	CS	Caspian tern (<i>Hydroprogne caspia</i>)
	RT	Royal tern (<i>Thalasseus maximus</i>)
	BS	Black skimmer (<i>Rynchops niger</i>)
	UN	Unidentified
	AO	American oystercatcher (<i>Haematopus palliatus</i>)
NUMBERS	0000	Nesting adults
SALINITY	1	Nesting in freshwater near <i>Salix nigra</i> or <i>Cephalanthus occidentalis</i>
	2	Nesting in brackish water near <i>Spartina patens</i>
	3	Nesting in saline water near <i>Spartina alterniflora</i> or on unvegetated offshore islands
HABITAT	1	Swamp colony
	2	Marsh colony
	3	Beach colony
	4	Spoil colony
	5	Other
	6	Shell berm adjacent to marsh
SITE (nest)	1	Tree (woody, > 7 m tall)
	2	Shrub (woody, ≤ 7 m tall)
	3	Herbaceous
	4	Bare ground (sand, shell, silt, etc.)
	5	Driftage on marsh
	6	Manmade

Table 2. Seabird and Wading Bird Colonies of the Northern Gulf of Mexico Coast from Sabine Lake to Mobile Bay, 1976.

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
588001	1	3001	9330	AN	14	1	1	1
588001	1	3001	9330	GB	248	1	1	1
588001	1	3001	9330	GE	114	1	1	1
588001	1	3001	9330	OC	1,052	1	1	1
588002	1	3002	9329	GE	100	1	2	3
588002	1	3002	9329	LB	50	1	2	3
588002	1	3002	9329	SE	550	1	2	3
588002	1	3002	9329	WF	10	1	2	3
588002	1	3002	9329	WI	20	1	2	3
588003	1	3003	9324	GB	70	1	1	1
588003	1	3003	9324	GE	70	1	1	1
588003	1	3003	9324	OC	40	1	1	1
588004	11	3044	9220	AN	600	1	1	2
588004	11	3044	9220	BC	30	1	1	2
588004	11	3044	9220	CE	40,250	1	1	2
588004	11	3044	9220	LB	2,000	1	1	2
588004	11	3044	9220	LH	600	1	1	2
588004	11	3044	9220	SE	50	1	1	2
588004	11	3044	9220	WI	500	1	1	2
588004	11	3044	9220	YC	150	1	1	2
589001	13	3028	9144	AN	200	1	1	1
589001	13	3028	9144	GE	500	1	1	1
589001	13	3028	9144	LB	1,000	1	1	1
589001	13	3028	9144	LH	500	1	1	1
589001	13	3028	9144	WI	20	1	1	1
589002	12	3026	9138	AN	10	1	1	2
589002	12	3026	9138	CE	500	1	1	2
589002	12	3026	9138	LB	1,000	1	1	2
589002	12	3026	9138	SE	100	1	1	2
589003	13	3023	9139	AN	50	1	1	2
589003	13	3023	9139	LB	2,000	1	1	2
589004	12	3021	9137	AN	50	1	1	2
589004	12	3021	9137	CE	2,000	1	1	2
589004	12	3021	9137	LB	800	1	1	2
589005	12	3014	9131	LB	300	1	1	2
589006	13	3013	9139	AN	100	1	1	2
589006	13	3013	9139	CE	500	1	1	2
589006	13	3013	9139	LB	1,000	1	1	2
589006	13	3013	9139	LH	500	1	1	2
589006	13	3013	9139	SE	500	1	1	2
589007	13	3009	9131	AN	800	1	1	2
589007	13	3009	9131	CE	1,000	1	1	2
589007	13	3009	9131	GE	200	1	1	2
589007	13	3009	9131	LB	12,000	1	1	2
589007	13	3009	9131	LH	500	1	1	2
589008	12	3008	9118	AN	500	1	1	1
589008	12	3008	9118	CE	3,000	1	1	2
589008	12	3008	9118	GE	500	1	1	1
589008	12	3008	9118	LB	10,000	1	1	2
589008	12	3008	9118	LH	1,000	1	1	2
589008	12	3008	9118	WI	3,000	1	1	2
589009	15	3009	9045	GB	200	1	1	1
589009	15	3009	9045	GE	1,100	1	1	1
589010	17	3017	9036	CE	4,000	1	1	2
589010	17	3017	9036	GE	100	1	1	1
589010	17	3017	9036	LB	400	1	1	2
589011	17	3017	9035	GB	100	1	1	1
589011	17	3017	9035	GE	40	1	1	1
589012	17	3020	9031	GB	70	1	1	1
589012	17	3020	9031	GE	220	1	1	1
589013	18	3022	9027	CE	400	1	1	2
589013	18	3022	9027	GB	100	1	1	1

1 3 5
21 0 5

Table 2. (continued)

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
589013	18	3022	9027	GE	300	1	1	1
589014	18	3022	9026	GB	10	1	1	1
589014	18	3022	9026	WI	60,000	1	1	1
589015	18	3024	9024	GB	110	1	1	1
589016	18	3023	9023	GB	300	1	1	1
589016	18	3023	9023	GE	300	1	1	1
589017	16	3010	9031	GB	600	1	1	1
589017	16	3010	9031	GE	900	1	1	1
589018	16	3006	9034	GB	30	1	1	1
589018	16	3006	9034	GE	1,600	1	1	1
589019	16	3006	9039	GB	220	1	1	1
589019	16	3006	9039	GE	550	1	1	1
589020	16	3002	9039	CE	50	1	1	2
589020	16	3002	9039	LB	5,438	1	1	2
589020	16	3002	9039	LH	996	1	1	2
589020	16	3002	9039	SE	1,234	1	1	2
589020	16	3002	9039	UN	368	1	1	2
589021	10	3003	9002	LT	30	2	5	6
590001	9	3009	8928	AO	2	3	6	4
590001	9	3009	8928	BS	800	3	6	4
590001	9	3009	8928	FT	5,500	3	2	5
590002	9	3003	8922	AO	1	3	6	4
590002	9	3003	8922	BS	40	3	6	4
590003	20	3020	8912	LT	80	3	3	4
590004	20	3020	8911	LT	1,500	3	3	4
590005	20	3020	8910	LT	2,000	3	3	4
590006	20	3022	8902	LT	20	3	3	4
590007	20	3023	8900	LT	4,210	3	3	4
590008	9	3009	8912	AO	10	3	6	4
580008	9	3009	8912	BS	1,283	3	6	4
590008	9	3009	8912	CS	44	3	6	4
590008	9	3009	8912	FT	202	3	2	5
590008	9	3009	8912	GT	20	3	6	4
590008	9	3009	8912	LG	1,916	3	2	3
590009	9	3002	8910	AO	2	3	6	4
590009	9	3002	8910	BS	166	3	6	4
590009	9	3002	8910	FT	30	3	2	5
590009	9	3002	8910	LG	30	3	2	3
590010	21	3014	8839	LT	30	3	3	4
590011	21	3013	8831	BS	500	3	3	4
590011	21	3013	8831	CS	4	3	3	4
590011	21	3013	8831	GT	2	3	3	4
590011	21	3013	8831	LT	50	3	3	4
590011	21	3013	8831	RT	150	3	3	4
590011	21	3013	8831	SN	822	3	3	4
590012	21	3012	8824	LT	20	3	3	4
590013	22	3015	8809	LT	1,000	3	3	4
590014	22	3015	8812	LT	1,000	3	3	4
590015	22	3014	8819	BS	500	3	3	4
590015	22	3014	8819	CT	12	3	3	4
590015	22	3014	8819	GT	23	3	3	4
590016	22	3014	8820	LT	350	3	3	4
590017	22	3019	8812	LT	350	3	3	4
590017	22	3019	8812	CE	2,000	3	2	2
590017	22	3019	8812	LB	400	3	2	2
590017	22	3019	8812	LH	1,600	3	2	2
590017	22	3019	8812	LT	14	3	6	4
590017	22	3019	8812	PI	100	3	3	2
590017	22	3019	8812	SE	600	3	2	2
590017	22	3019	8812	WI	1	3	2	2
590018	20	3014	8909	LT	50	3	3	4
590019	20	3014	8904	BS	90	3	3	4
590020	22	3018	8808	CS	132	3	4	4

Table 2.(continued)

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
590021	22	3017	8808	LH	40	3	4	2
590021	22	3017	8808	SE	140	3	4	2
590022	21	3022	8834	BS	50	3	4	4
590023	21	3014	8845	BS	80	3	3	4
601001	19	2958	9350	BC	3,604	2	4	3
601001	19	2958	9350	GE	10,378	2	4	2
601001	19	2958	9350	LH	5,096	2	4	3
601001	19	2958	9350	OC	788	2	4	2
601001	19	2958	9350	RS	1,346	2	4	2
601001	19	2958	9350	SE	11,228	2	4	3
601001	19	2958	9350	UN	3,066	2	4	3
601001	19	2958	9350	WI	104	2	4	3
601002	1	2951	9323	BC	1,000	2	2	3
601002	1	2951	9323	BS	50	2	3	4
601002	1	2951	9323	FT	4,526	2	2	5
601002	1	2951	9323	GE	2,086	2	2	3
601002	1	2951	9323	LH	8,198	2	2	3
601002	1	2951	9323	SE	3,464	2	2	3
601002	1	2951	9323	UN	802	2	2	3
601003	1	2953	9305	BC	8	1	4	2
601003	1	2953	9305	GE	674	1	4	2
601003	1	2953	9305	OC	230	1	4	2
601003	1	2953	9305	PI	2	1	4	2
601004	1	2946	9256	GE	600	1	4	2
601004	1	2946	9256	OC	300	1	4	2
601004	1	2946	9256	RS	375	1	4	2
601004	1	2946	9256	SE	800	1	4	2
601005	1	2947	9254	LH	30	1	4	2
601005	1	2947	9254	SE	75	1	4	2
601006	1	2956	9253	AN	10	1	2	2
601006	1	2956	9253	BC	5	1	2	2
601006	1	2956	9253	GB	200	1	2	2
601006	1	2956	9253	GE	2,700	1	2	2
601006	1	2956	9253	OC	250	1	2	2
601007	1	2959	9252	AN	160	1	2	1
601007	1	2959	9252	BC	600	1	2	2
601007	1	2959	9252	CE	2,000	1	2	2
601007	1	2959	9252	FT	100	1	2	5
601007	1	2959	9252	GB	110	1	2	1
601007	1	2959	9252	GE	1,000	1	2	2
601007	1	2959	9252	LB	200	1	2	2
601007	1	2959	9252	LH	500	1	2	2
601007	1	2959	9252	OC	1,000	1	2	2
601007	1	2959	9252	BS	400	1	2	2
601007	1	2959	9252	SE	4,500	1	2	2
601007	1	2959	9252	WF	25	1	2	2
601007	1	2959	9252	WI	15	1	2	2
601008	2	2953	9235	AN	10	1	2	2
601008	2	2953	9235	BC	100	1	2	2
601008	2	2953	9235	CE	5,000	1	2	2
601008	2	2953	9235	GB	500	1	2	2
601008	2	2953	9235	GE	5,000	1	2	2
601008	2	2953	9235	LB	500	1	2	2
601008	2	2953	9235	LH	500	1	2	2
601008	2	2953	9235	OC	4,000	1	2	2
601008	2	2953	9235	PI	10	1	2	2
601008	2	2953	9235	RS	500	1	2	2
601008	2	2953	9235	SE	4,000	1	2	2
601008	2	2953	9235	WI	100	1	2	2
601009	2	2941	9212	BS	60	1	4	4
601009	2	2941	9212	LT	500	1	4	4
601009	2	2936	9202	GE	2,574	2	4	4
601010	2	2936	9202	SE	1,240	2	4	2

Table 2.(continued)

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
601011	1	2944	9345	BS	713	3	3	4
601011	1	2944	9345	LT	500	3	3	4
601012	1	2946	9321	LT	20	3	3	4
601013	1	2946	9314	LT	100	3	3	4
601014	1	2944	9301	LT	30	3	3	4
602001	3	2954	9155	AN	10	1	1	2
602001	3	2954	9155	CE	1,200	1	1	2
602001	3	2954	9155	GE	640	1	1	6
602001	3	2954	9155	LH	100	1	1	2
602001	3	2954	9155	SE	200	1	1	2
602002	3	2953	9154	AN	4	1	1	1
602002	3	2953	9154	CE	1,400	1	1	2
602002	3	2953	9154	GE	922	1	1	1
602002	3	2953	9154	SE	100	1	1	2
602003	3	2949	9142	AN	4	1	1	2
602003	3	2949	9142	LB	900	1	1	2
602003	3	2949	9142	SE	100	1	1	2
602004	4	2955	9136	GE	500	1	1	1
602005	4	2942	9129	BC	1	1	1	2
602005	4	2942	9129	LB	5,000	1	1	2
602005	4	2942	9129	LH	100	1	1	2
602005	4	2942	9129	SE	5,000	1	1	2
601005	4	2942	9129	WI	200	1	1	2
602006	3	2926	9151	BS	1,000	3	3	4
602006	3	2926	9151	LG	90	3	3	4
602006	3	2926	9151	RT	2,320	3	3	4
602006	3	2926	9151	SN	2,674	3	3	4
602007	4	2924	9122	BS	405	1	4	4
602007	4	2924	9122	GT	16	1	4	4
602007	4	2924	9122	LT	75	1	4	4
602008	4	2923	9122	BS	1,686	1	4	4
602008	4	2923	9122	FT	102	1	4	5
602008	4	2923	9122	GT	112	1	4	4
602009	4	2932	9117	BC	200	1	4	2
602009	4	2932	9117	CE	50	1	4	2
602009	4	2932	9117	GE	16	1	4	2
602009	4	2932	9117	LB	2,226	1	4	2
602009	4	2932	9117	LH	258	1	4	2
602009	4	2932	9117	PI	1,224	1	4	2
602009	4	2932	9117	SE	704	1	4	2
602009	4	2932	9117	UN	1,712	1	4	2
602009	4	2932	9117	YC	90	1	4	2
602010	4	2934	9115	GE	2	1	4	2
602010	4	2934	9115	LB	1,574	1	4	2
602010	4	2934	9115	LH	408	1	4	2
602010	4	2934	9115	UN	424	1	4	2
602010	4	2934	9115	WI	7,618	1	4	2
602011	4	2935	9115	LH	8	1	4	2
602011	4	2935	9115	WI	1,866	1	4	2
602012	4	2936	9114	BC	82	1	4	2
602012	4	2936	9114	CE	114	1	4	2
602012	4	2936	9114	GE	244	1	4	2
602012	4	2936	9114	LB	194	1	4	2
602012	4	2936	9114	LH	3,136	1	4	2
602012	4	2936	9114	SE	764	1	4	2
602012	4	2936	9114	UN	12,936	1	4	2
602012	4	2936	9114	WI	324	1	4	2
602013	5	2913	9110	LT	50	3	3	4
602014	23	2942	9104	AN	10	1	1	1
602014	23	2942	9104	GB	2,000	1	1	1
602014	23	2942	9104	GE	2,800	1	1	1
602015	5	2937	9057	GE	300	1	1	1
602016	14	2958	9053	GR	100	1	1	1

Table 2.(continued)

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
602016	14	2958	9053	GE	2,400	3	1	1
602017	14	2956	9049	GB	100	1	1	1
602017	14	2956	9049	GE	200	1	1	1
602018	6	2954	9051	CE	2,000	1	1	2
602018	6	2954	9051	GE	1,000	1	1	1
602018	6	2954	9051	LB	3,000	1	1	2
602018	6	2954	9051	LH	1,000	1	1	2
602018	6	2954	9051	SE	500	1	1	2
602018	6	2954	9051	WI	150	1	1	2
602019	16	2959	9036	LB	1,500	1	2	2
602020	16	2958	9037	LB	2,500	1	2	2
602020	16	2958	9037	SE	200	1	2	2
602021	6	2948	9038	CE	2,000	1	2	2
602021	6	2948	9038	LB	8,000	1	2	2
602021	6	2948	9038	LH	3,500	1	2	2
602021	6	2948	9038	PI	100	1	2	2
602021	6	2948	9038	SE	11,000	1	2	2
602021	6	2948	9038	WI	1,700	1	2	2
602022	24	2957	9031	CE	7,000	1	2	2
602022	24	2957	9031	GE	50	1	2	2
602022	24	2957	9031	LB	8,000	1	2	2
602022	24	2957	9031	LH	600	1	2	2
602022	24	2957	9031	SE	2,000	1	2	2
602023	24	2953	9027	CE	12,000	1	2	2
602023	24	2953	9027	LB	3,000	1	2	2
602023	24	2953	9027	PI	15	1	2	2
602023	24	2953	9027	YC	10	1	2	2
602024	24	2953	9023	AN	50	1	1	1
602024	24	2953	9023	GB	5,000	1	1	1
602024	24	2953	9023	GE	10,000	1	1	1
602025	24	2953	9021	LB	400	1	1	2
602025	24	2953	9021	SE	250	1	1	2
602026	24	2953	9018	LB	500	1	2	2
602027	6	2939	9023	CE	300	1	2	2
602027	6	2939	9023	LB	400	1	2	2
602028	6	2935	9033	BC	25	1	2	2
602028	6	2935	9033	CE	2,000	1	2	2
602028	6	2935	9033	GE	800	1	2	2
602028	6	2935	9033	LB	2,400	1	2	2
602028	6	2935	9033	LH	100	1	2	2
602028	6	2935	9033	SE	2,000	1	2	2
602029	5	2931	9048	BC	10	1	2	2
602029	5	2931	9048	CE	10	1	2	2
602029	5	2931	9048	GB	50	1	2	2
602029	5	2931	9048	GE	300	1	2	2
602029	5	2931	9048	LB	600	1	2	2
602029	5	2931	9048	LH	250	1	2	2
602029	5	2931	9048	PI	200	1	2	2
602029	5	2931	9048	SE	500	1	2	2
602029	5	2931	9048	WI	10	1	2	2
602030	5	2925	9055	BC	20	1	1	2
602030	5	2925	9055	GE	100	1	1	1
602030	5	2925	9055	LB	50	1	1	2
602030	5	2925	9055	SE	40	1	1	2
602030	5	2925	9055	YC	3	1	1	2
602031	5	2903	9056	BC	4,172	3	2	2
602031	5	2903	9056	BS	3,084	3	3	4
602031	5	2903	9056	GE	3,048	3	2	2
602031	5	2903	9056	LG	34,652	3	3	3
602031	5	2903	9056	LH	18,002	3	2	2
602031	5	2903	9056	RE	10	3	2	2
602031	5	2903	9056	RT	436	3	3	4
602031	5	2903	9056	SE	7,544	3	2	2
602031	5	2903	9056	SN	192	3	3	4

Table 2.(continued)

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
602032	5	2904	9043	BC	16	3	2	2
602032	5	2904	9043	FT	20	3	2	5
602032	5	2904	9043	GE	100	3	2	2
602032	5	2904	9043	LH	1,016	3	2	2
602032	5	2904	9043	SE	16	3	2	2
602033	5	2903	9043	LT	100	3	3	4
602034	5	2904	9040	LT	50	3	3	4
602035	5	2917	9030	FT	400	3	2	5
602036	5	2912	9028	BC	72	3	2	2
602036	5	2912	9028	FT	946	3	2	5
602036	5	2912	9028	GE	290	3	2	2
602036	5	2912	9028	LH	2,236	3	2	2
602036	5	2912	9028	SE	2,654	3	2	2
602037	5	2915	9025	FT	60	2	2	5
602038	6	2913	9021	BC	160	3	2	2
602038	6	2913	9021	GE	196	3	2	2
602038	6	2913	9021	LB	68	3	2	2
602038	6	2913	9021	LH	15,414	3	2	2
602038	6	2913	9021	PI	366	3	2	3
602038	6	2913	9021	SE	3,302	3	2	2
602038	6	2913	9021	UN	412	3	2	2
602038	6	2913	9021	WI	252	3	2	3
602039	6	2912	9019	BC	44	3	2	2
602039	6	2912	9019	GE	1,216	3	2	2
602040	6	2909	9016	BC	1,538	3	2	2
602040	6	2909	9016	GE	2,522	3	2	2
602040	6	2909	9016	LB	24	3	2	2
602040	6	2909	9016	LH	8,246	3	2	2
602040	6	2909	9016	RE	2	3	2	2
602040	6	2909	9016	SE	6,606	3	2	2
602040	6	2909	9016	UN	454	3	2	2
602041	5	2904	9030	LT	35	3	3	4
602042	6	2904	9021	BS	4,863	3	3	4
602042	6	2904	9021	CS	40	3	3	4
602042	6	2904	9021	LT	60	3	3	4
602042	6	2904	9021	RT	1,274	3	3	4
602042	6	2904	9021	SN	5,464	3	3	4
602043	6	2906	9010	LT	50	3	3	4
602044	6	2909	9007	BS	2,914	3	3	4
602044	6	2909	9007	LT	20	3	3	4
602045	6	2923	9013	CE	2,400	2	4	2
602045	6	2923	9013	GE	100	2	4	2
602045	6	2923	9013	LB	250	2	4	2
602045	6	2923	9013	WI	30	2	4	2
602046	7	2928	9004	FT	1,800	2	2	5
602047	6	2918	9004	GE	330	3	2	2
602047	6	2918	9004	SE	20	3	2	2
602048	6	2916	9005	BC	2	3	2	2
602048	6	2916	9005	SE	30	3	2	2
602049	6	2916	9004	GE	40	3	2	2
602050	6	2915	9005	BC	364	3	2	2
602050	6	2915	9005	FT	78	3	2	5
602050	6	2915	9005	GE	1,672	3	2	2
602050	6	2915	9005	LH	966	3	2	2
602050	6	2915	9005	SE	1,984	3	2	2
602050	6	2915	9005	UN	78	3	2	2
602051	6	2915	9003	BC	48	3	2	2
602051	6	2915	9003	FT	494	3	2	5
602051	6	2915	9003	GE	590	3	2	2
602051	6	2915	9003	LH	2,474	3	2	2
602051	6	2915	9003	SE	684	3	2	2
602051	6	2915	9003	UN	2,946	3	2	2
602052	6	2916	9002	GE	260	3	2	2
602052	6	2916	9002	LH	50	3	2	2

Table 2.(continued)

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
602053	6	2904	9024	LT	60	3	3	4
602054	5	2916	9118	LT	50	3	3	4
602055	5	2902	9049	LT	180	3	3	4
603001	8	2927	8957	FT	332	2	2	5
603002	7	2918	8957	BC	396	3	2	2
603002	7	2918	8957	BP	48	3	2	2
603002	7	2918	8957	GE	418	3	2	2
603002	7	2918	8957	LG	528	3	2	2
603002	7	2918	8957	LH	19,332	3	2	2
603002	7	2918	8957	PI	2,174	3	2	3
603002	7	2918	8957	SE	4,546	3	2	2
603002	7	2918	8957	UN	944	3	2	2
603002	7	2918	8957	WI	2,134	3	2	3
603003	7	2917	8954	BS	1,765	3	3	4
603003	7	2917	8954	LG	2	3	3	4
603004	8	2922	8953	BC	3,926	3	2	2
603004	8	2922	8953	FT	40	3	2	5
603004	8	2922	8953	GE	3,844	3	2	2
603004	8	2922	8953	LB	94	3	2	2
603004	8	2922	8953	LH	14,040	3	2	2
603004	8	2922	8953	PI	1,416	3	2	3
603004	8	2922	8953	RE	10	3	2	2
604004	8	2922	8953	SE	3,762	3	2	2
603004	8	2922	8953	UN	2,672	3	2	2
603004	8	2922	8953	WI	4,072	3	2	2
603005	8	2923	8953	LH	1,128	3	2	2
603006	8	2923	8952	FT	344	3	2	5
603006	8	2923	8952	LH	548	3	2	2
603007	8	2925	8952	FT	38	3	2	5
603008	8	2925	8951	BC	302	3	2	2
603008	8	2925	8951	FT	344	3	2	5
603008	8	2925	8951	GE	1,942	3	2	2
603008	8	2925	8951	LH	580	3	2	2
603008	8	2925	8951	SE	2,220	3	2	2
603008	8	2925	8951	UN	26	3	2	2
603009	9	2955	8921	FT	80	3	2	5
603010	9	2958	8912	AO	5	3	6	4
603010	9	2958	8912	BS	119	3	6	4
603010	9	2958	8912	FT	84	3	2	5
603010	9	2958	8912	LG	836	3	2	3
603010	9	2958	8912	LH	10	3	2	2
603011	9	2956	8912	AO	5	3	6	4
603011	9	2956	8912	BS	226	3	6	4
603011	9	2956	8912	FT	586	3	2	5
603011	9	2956	8912	LG	398	3	2	3
603012	9	2955	8915	AO	2	3	6	4
603012	9	2955	8915	BC	728	3	2	2
603012	9	2955	8915	FT	172	3	2	5
603012	9	2955	8915	GE	1,114	3	2	2
603012	9	2955	8915	LB	114	3	2	2
603012	9	2955	8915	LG	1,998	3	2	3
603012	9	2955	8915	LH	978	3	2	2
603012	9	2955	8915	PI	182	3	2	3
603012	9	2955	8915	RE	6	3	2	2
603012	9	2955	8915	SE	318	3	2	2
603012	9	2955	8915	WI	158	3	2	3
603013	9	2954	8915	BS	164	3	6	4
603013	9	2954	8915	LG	440	3	2	3
603014	9	2954	8914	AO	2	3	6	4
603014	9	2954	8914	CS	150	3	6	4
603014	9	2954	8914	LG	2,486	3	2	3
603014	9	2954	8914	LH	38	3	2	2
603014	9	2954	8914	PI	2	3	2	3
603014	9	2954	8914	RE	2	3	2	2

Table 2. (continued)

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
603014	9	2954	8914	RT	584	3	6	4
603014	9	2954	8914	SE	2	3	2	2
603015	9	2954	8912	BS	457	3	6	4
603016	8	2926	8954	FT	200	3	2	5
603017	9	2948	8921	BC	3	3	2	2
603017	9	2948	8921	GE	10	3	2	2
603017	9	2948	8921	LH	10	3	2	2
603017	9	2948	8921	PI	3	3	2	3
603018	9	2948	8916	FT	200	3	2	5
603019	9	2944	8922	BS	688	3	6	4
603019	9	2944	8922	FT	20	3	2	5
603020	9	2946	8916	LG	600	3	2	3
603021	9	2944	8916	BS	75	3	6	4
603021	9	2944	8916	FT	122	3	2	5
603021	9	2944	8916	LG	1,138	3	2	3
603022	9	2941	8926	FT	1,400	3	2	5
603023	9	2938	8928	BC	58	3	2	2
603023	9	2938	8928	FT	332	3	2	5
603023	9	2938	8928	GE	58	3	2	2
603023	9	2938	8928	LB	274	3	2	2
603023	9	2938	8928	LH	4,640	3	2	2
603023	9	2938	8928	PI	1,624	3	2	2
603023	9	2938	8928	SE	1,900	3	2	2
603023	9	2938	8928	UN	314	3	2	2
603023	9	2938	8928	WI	136	3	2	2
603024	8	2937	8933	BC	1,280	3	2	2
603024	8	2937	8933	FT	2	3	2	5
603024	8	2937	8933	GE	2,348	3	2	2
603024	8	2937	8933	LB	382	3	2	2
603024	8	2937	8933	LH	9,164	3	2	2
603024	8	2937	8933	RE	210	3	2	2
603024	8	2937	8933	SE	6,752	3	2	2
603024	8	2937	8933	UN	1,112	3	2	2
603024	8	2937	8933	WI	4,278	3	2	2
603025	8	2936	8934	AO	2	3	6	4
603025	8	2936	8934	BC	1,442	3	2	2
603025	8	2936	8934	CE	212	3	2	2
603025	8	2936	8934	FT	50	3	2	5
603025	8	2936	8934	GE	318	3	2	2
603025	8	2936	8934	LB	276	3	2	2
603025	8	2936	8934	LH	9,290	3	2	2
603025	8	2936	8934	PI	1,040	3	2	2
603025	8	2936	8934	SE	8,506	3	2	2
603025	8	2936	8934	UN	996	3	2	2
603025	8	2936	8934	WI	64	3	2	2
603026	8	2934	8935	FT	506	3	2	5
603026	8	2934	8935	LG	66	3	2	3
603026	8	2934	8935	LH	2	3	2	2
603027	8	2942	8933	BC	138	3	2	2
603027	8	2942	8933	FT	6	3	2	5
603027	8	2942	8933	GE	24	3	2	2
603027	9	2942	8933	LB	46	3	2	2
603027	9	2942	8933	LG	200	3	2	3
603027	9	2942	8933	LH	2,176	3	2	2
603027	9	2942	8933	PI	2	3	2	2
603027	9	2942	8933	RE	1	3	2	2
603027	9	2942	8933	SE	1,412	3	2	2
603028	8	2915	8915	GE	3,500	1	2	3
603028	8	2915	8915	LB	1,500	1	2	3
603028	8	2915	8915	LH	25	1	2	3
603028	8	2915	8915	PI	4,000	1	2	3
603028	8	2915	8915	SE	12,000	1	2	3
603028	8	2915	8915	WI	1,000	1	2	3
603029	8	2913	8922	GE	900	1	2	2

Table 2. (concluded)

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
603029	8	2913	8922	LB	350	1	2	2
603029	8	2913	8922	SE	300	1	2	2
603030	8	2914	8921	LB	100	1	2	2
603030	8	2914	8921	SE	70	1	2	2
603031	8	2906	8917	LT	100	1	4	4
603032	8	2858	8923	LT	50	2	4	4
603032	8	2858	8923	FT	50	2	4	4
603033	8	2859	8909	LT	500	2	4	4
603034	8	2929	8910	BS	820	3	3	4
603035	8	2934	8903	BS	1,788	3	3	4
603035	8	2934	8903	LG	5,384	3	3	3
603035	8	2934	8903	RT	110	3	3	4
606036	8	2939	8857	BS	512	3	3	4
603036	8	2939	8857	LG	1,600	3	3	3
603036	8	2939	8857	RT	14,420	3	3	4
603036	8	2939	8857	SN	40,734	3	3	4
603037	8	2938	8858	BS	112	3	3	4
606037	8	2938	8858	CS	48	3	3	4
603037	8	2938	8858	GT	6	3	3	4
603037	8	2938	8858	LG	40	3	3	3
603037	8	2938	8858	RT	1,258	3	3	4
603037	8	2938	8858	SN	3,688	3	3	4
603037	8	2938	8858	ST	20	3	3	3
603038	9	2951	8853	LG	548	3	2	3
603039	9	2952	8855	BC	40	3	2	2
603039	9	2952	8855	GE	204	3	2	2
603039	9	2952	8855	RE	20	3	2	2
603039	9	2952	8855	UN	20	3	2	2
603040	9	2953	8852	AO	4	3	6	4
603040	9	2953	8852	BS	285	3	6	4
603040	9	2953	8852	GE	20	3	2	2
603040	9	2953	8852	LG	3,662	3	2	3
603040	9	2953	8852	LH	20	3	2	2
603040	9	2953	8852	RE	38	3	2	2
603040	9	2953	8852	SE	20	3	2	2
603041	8	2901	8920	BS	1,380	2	4	4
603042	8	2903	8918	BS	1,023	2	4	4
603042	8	2903	8918	LT	800	2	4	4
603043	8	2858	8909	FT	50	2	3	4
603044	8	2908	8915	BS	428	2	4	4
603045	8	2917	8940	LT	50	3	3	4
603046	8	2918	8944	LT	20	3	3	4
603047	7	2918	8954	LT	100	3	3	4
603048	8	2936	8934	BS	390	3	3	4
603049	8	2928	8911	BS	1,114	3	3	4
603049	8	2928	8911	LT	100	3	3	4
603050	9	2952	8855	BS	50	3	3	4
603050	9	2952	8855	RT	774	3	3	4
603050	9	2952	8855	SN	2,108	3	3	4
603051	8	2932	8905	BS	300	3	3	4

29 13
8922

Table 3. Nesting Abundance and Frequency of Occurrence of Pelicans, Cormorants, Anhingas, Herons, Egrets, Ibises, Spoonbills, Gulls, Terns, and Skimmers on Northern Gulf of Mexico Coastal Colonies, 1976.

Species	Nesting Adults	Colonies	Percentage of total colonies
Brown pelican	48	1	0.01
Olivaceous cormorant	7,660	8	0.05
Anhinga	2,582	17	0.10
Great blue heron	10,118	20	0.12
Great egret	76,944	64	0.38
Snowy egret	116,487	50	0.30
Reddish egret	299	9	0.05
Cattle egret	91,386	25	0.15
Louisiana heron	139,905	48	0.29
Little blue heron	81,338	45	0.27
Black-crowned night heron	20,414	32	0.19
Yellow-crowned night heron	253	4	0.02
White-faced ibis	12,495	19	0.11
White ibis	87,752	25	0.15
Roseate spoonbill	2,621	4	0.02
Laughing gull	56,806	19	0.11
Gull-billed tern	179	6	0.04
Forster's tern	19,216	34	0.20
Common tern	12	1	0.01
Sooty tern	20	1	0.01
Least tern	14,304	39	0.23
Sandwich tern	55,682	7	0.04

Table 3. (concluded)

Species	Nesting Adults	Colonies	Percentage of total colonies
Caspian tern	418	6	0.04
Royal tern	21,326	9	0.05
Black skimmer	29,980	37	0.22
Total	847,525		

^abased on 168 total colonies

Table 4. Nesting Abundance of Colonial Waders, Pelicans, Cormorants, and Anhingas by Salinity Type.

Species	Adults present on nesting colonies		
	Fresh	Brackish	Saline
Brown pelican	0	0	48
Olivaceous cormorant	6,872	788	0
Anhinga	2,582	0	0
Great blue heron	10,118	0	0
Great egret	41,242	15,138	20,564
Snowy egret	47,537	15,932	53,018
Reddish egret	0	0	299
Cattle egret	86,774	2,400	2,212
Louisiana heron	14,611	13,294	112,000
Little blue heron	78,882	250	2,206
Black-crowned night heron	1,081	4,604	14,729
Yellow-crowned night heron	253	0	0
White-faced ibis	5,586	0	6,909
White ibis	76,523	134	11,095
Roseate spoonbill	1,275	1,346	0
Total	373,336	53,886	223,080

Table 5. Nesting Abundance of Colonial Gulls, Terns,
and Skimmers by Salinity Type.

Species	Adults on colonies		
	Fresh	Brackish	Saline
Laughing gull	0	0	56,086
Gull-billed tern	128	0	51
Forster's tern	202	6,818	12,196
Common tern	0	0	12
Sooty tern	0	0	20
Least tern	675	1,380	12,249
Sandwich tern	0	0	55,682
Caspian tern	0	0	418
Royal tern	0	0	21,326
Black skimmer	2,151	2,881	24,948
Total	3,156	11,079	182,988

Table 6. Abundance of Nesting Colonial Seabirds and Wading Birds by Habitat Type, Louisiana - Mississippi - Alabama Coasts, 1976.

Species	Cypress Swamp	Breeding Adults			Coastal Beach
		Fresh	Marsh Brackish	Salt	
Brown pelican	0	0	0	48 (100) ^a	0
Olivaceous cormorant	1,092 (14)	5,780 (75)	788 (10)	0	0
Anhinga	2,402 (93)	180 (7)	0	0	0
Great blue heron	9,258 (92)	860 (8)	0	0	0
Great egret	22,956 (30)	18,286 (24)	15,138 (20)	20,564 (27)	0
Snowy egret	8,074 (7)	39,463 (34)	15,932 (14)	53,018 (46)	0
Reddish egret	0	0	0	299 (100)	0
Cattle egret	56,300 (62)	30,474 (33)	2,400 (33)	2,212 (3)	0
Louisiana heron	5,296 (4)	9,315 (7)	13,294 (10)	112,000 (80)	0
Little blue heron	45,288 (56)	33,594 (41)	250 (0.3)	2,206 (3)	0
Black-crowned night heron	51 (0.2)	1,030 (5)	4,604 (22)	14,729 (72)	0
Yellow-crowned night heron	153 (60)	100 (40)	0	0	0
White-faced ibis (includes glossy ibis)	0	5,586 (45)	0	6,909 (55)	0
White ibis	63,870 (73)	12,653 (14)	134 (0.2)	11,095 (13)	0
Roseate spoonbill	0	1,275 (49)	1,346 (51)	0	0
Laughing gull	0	0	0	14,318 (26)	41,768 (74)
Gull-billed tern	0	128 (72)	0	20 (11)	31 (17)
Forster's tern	0	202 (1)	6,768 (35)	12,196 (63)	50 (0.3)
Common tern	0	0	0	0	12 (100)
Sooty tern	0	0	0	0	20 (100)
Least tern	0	675 (5)	1,380 (10)	14 (0.1)	12,235 (86)
Sandwich tern	0	0	0	0	55,682 (100)
Caspian tern	0	0	0	326 (78)	92 (22)
Royal tern	0	0	0	584 (3)	20,742 (97)
Black skimmer	0	2,151 (7)	2,831 (9)	4,353 (14)	20,645 (69)
Unidentified ^b	368 (1)	15,072 (50)	3,868 (13)	10,776 (36)	0
Totals	215,108 (25)	176,824 (20)	68,733 (8)	265,667 (30)	151,277 (17)

^aNumbers in parentheses are percents and do not total 100 due to rounding.

^bNests not identifiable to species during transect sampling; includes snowy egret, little blue heron, cattle egret, and Louisiana heron.

Table 7. Nesting Abundance of Colonial Seabirds and Wading Birds on Spoil Islands and Spoil Deposits Censused on the Louisiana-Mississippi-Alabama Coasts, 1976.

Species	Individual Adults Attending Nests			Totals
	Fresh marsh	Brackish marsh	Coastal islands	
Olivaceous cormorant	530	788	0	1,318 (17) ^a
Great egret	1,536	13,052	0	14,588 (19)
Snowy egret	2,343	12,468	140	14,951 (13)
Cattle egret	164	2,400	0	2,564 (3)
Louisiana heron	3,840	5,096	40	8,976 (6)
Little blue heron	3,994	250	0	4,244 (5)
Black-crowned night heron	290	3,604	0	3,894 (19)
Yellow-crowned night heron	90	0	0	90 (36)
White-faced ibis	1,226	0	0	1,226 (10)
White ibis	9,808	134	0	9,942 (11)
Roseate spoonbill	375	1,346	0	1,721 (66)
Gull-billed tern	128	0	0	128 (72)
Forster's tern	102	50	0	152 (0.8)
Least tern	675	1,350	0	2,025 (14)
Caspian tern	0	0	132	132 (32)
Black skimmer	2,151	2,831	50	5,032 (17)
Unidentified ^b	15,072	3,066	0	18,138 (60)
Total	42,324	46,435	362	89,121 (10)

^aPercent of total nesters in study area that nested on spoil.

^bNests not identifiable to species during transect sampling; includes snowy egret, cattle egret, Louisiana heron and little blue heron.

Nesting Habits and Relative Abundance of Each Species

Brown Pelican. A small colony of birds introduced from Florida nested in low mangrove shrubs in Barataria Bay. This nest site was typical for the native Louisiana population, extirpated by 1961 (personal communication J. Valentine, U.S. Fish and Wildlife Service, May 1976).

Olivaceous Cormorant. A common nester in fresh and brackish marsh heronries of southwest Louisiana. Nest sites were in the tallest available trees or shrubs.

Anhinga. A common fresh marsh and swamp nester among herons and alone in small swamp colonies. Nests were placed high in woody vegetation.

Great Blue Heron. A few small colonies of great blue herons were found in fresh marshes; largest groups nested atop mature cypress or tupelo trees in swamps.

Great Egret. This species nested abundantly in cypress swamps, marshes, and on vegetated spoil and barrier islands, always placing its nests on top of the shrub or tree canopy (Figure 6).

Snowy Egret. An abundant nester in shrub heronries in swamps and marshes throughout the study area.

Reddish Egret. A rare estuarine species occasionally found nesting among Louisiana herons in black mangrove thickets on insular marsh fragments or behind barrier beaches.

Cattle Egret. An abundant fresh swamp and marsh nester, occasionally found breeding in brackish and saline marsh heronries. Nests were commonly found in shrubs. The largest cattle egret colony (588004) was north of the coastal wetlands.

Louisiana Heron. Most abundant of all colonial species. Their center of nesting abundance was the saline marsh but breeding also occurred in swamps, fresh and brackish marshes, and on spoil islands.

Little Blue Heron. Swamp heronries were the center of abundance for this heron, usually associated with the closely related snowy egret. Nests were placed in shrubs.

Black-Crowned Night Heron. This principally estuarine species nested most abundantly in black mangrove heronries. Nests were built close to the ground deep within mangrove thickets.

Yellow-Crowned Night Heron. A swamp dweller nesting in small, scattered colonies. We found few nests in fresh marsh heronries and on spoil islands.

White-Faced Ibis and Glossy Ibis. Much more common as a breeding bird in salt marsh than in freshwater areas. Their thick, mound-like nests were usually built directly on smooth cordgrass.

White Ibis. This abundant species places its nests in trees and shrubs in the swamps, in mangrove shrubs in the salt marsh, and in willow shrubs on spoil islands.

Roseate Spoonbill. Although actually nesting in only four heronries in extreme southwest Louisiana, spoonbills were observed loafing at other colonies as far east as Atchafalaya Bay. Nests were built in shrubs.

Laughing Gull. An estuarine species that nested on smooth cordgrass or shells in the salt marsh, or in salt meadow cordgrass (wiregrass) on barrier island beaches. This seabird usually built a nest of sticks and grass, but sometimes simply dug a scrape in sand or shell.

Gull-Billed Tern. An uncommon species nesting on barrier beaches, salt marsh shell berms, and spoil islands. All gull-billed tern nesting occurred within black skimmer colonies. The tern nested most often beside driftwood.

Forster's Tern. Very abundant nester on wrack (usually matted vegetation) on the salt marsh. Many colonies were on the same islands as black mangrove heronries.

Common Tern. We found this species nesting near beach dunes on Dauphin Island, Alabama. Eggs were placed in a scrape dug in the sand.

Sooty Tern. The small population which has traditionally nested on the Chandeleur Islands dug their nest scrapes under forbs on the barrier beach of Curlew Island during 1976.

Least Tern. Suitable nesting habitat included any flat, unvegetated substrate near good feeding areas. Nests were scrapes formed in sand or shell in such diverse situations as barrier beaches, spoil islands, vacant house lots, and airports.

Sandwich Tern. Commonly nested in huge colonies with royal terns on unvegetated barrier beaches. Nest scrapes were placed about 30 cm apart in sand or shell (Figure 5).

Caspian Tern. Small colonies nested on barrier islands near royal and sandwich tern colonies. Caspian terns also nested on shell berms in salt marshes in St. Bernard Parish, Louisiana. Eggs were placed in a depression or a scrape in sand or shell.

Royal Tern. Royal and sandwich terns commonly nested together in dense groups on barrier beaches. Royal tern scrapes were slightly less dense than those of sandwich terns (Figure 5).

Black Skimmer. We found skimmers nesting on various unvegetated substrates, always near shallow estuaries. Largest colonies occurred on barrier beaches and spoil islands, but a large population nested on the many small shell berms within the Louisiana salt marsh. Nests were scrapes in sand or shell.

Of all birds that nested in marsh or swamp, 30 percent nested within cypress-tupelo swamp heronries. This was expected, because swamps compose 29 percent of all wetlands in the study area. Similarly, fresh marsh, composing 22 percent of coastal wetland areas, had 24 percent of all wetland nesting activity. In contrast, brackish marsh, 33 percent of the wetland area, had only 9 percent of the nesting, while saltmarsh, with only 16 percent of the total wetland area, had 37 percent of all swamp and marsh nesting. The preference for saline over adjacent brackish marsh was expected, because woody vegetation, necessary for most heron and egret nesting, was rare in brackish areas.

DISTURBANCE CAUSED BY INVENTORIES

The relative amount of disturbance to nesting birds by each census technique was not quantified in terms of ultimate nesting success. Two apparent effects were the immediate agitation of adults and nestlings during the census and the nesting activity post-census. Although affected by many unmeasured factors, these two responses could be described and compared, among both species and inventory techniques, in light of extensive observations over 168 colonies. The following comparisons are tentative and need testing through controlled experiments and quantitative descriptions of "disturbance." Immediate disturbance was identified as an observed agitation of birds coincident with our activities in or near nesting colonies.

Our decision concerning how much time to spend at a colony was based upon minimizing the duration of disturbance while at the same time maximizing accuracy. For censuses of most species, excepting aerial photography of great egrets, royal terns, sandwich terns, and black skimmers, accuracy increased along with duration of counts, either by allowing increased sample sizes or by providing more time for visual estimates or more careful total counts.

Duration of disturbance was especially important at both heronries and seabird colonies during early nestling stages, when flushed adults left their naked or downy young unprotected against temperature stress. Ground-based activities were more disturbing than aerial work. Total nest counts were most disturbing because they were conducted within colonies, and because they required the longest periods of disturbance relative to the area of the colony being censused.

Belt-transect sampling was locally as disturbing as total nest counts; both required nest counts within the colony, but the overall extent and duration of disturbance was less with belt transects since only 10 percent of the nesting area was sampled. Total nest counts kept a greater number of adults in the air for a longer period of time. Adults flushed from nests

during a belt transect sample returned to their nests after the observers moved to the next transect. Colonies visited 2 or 3 weeks after belt-transect sampling appeared to continue the nesting cycle unaffected.

Visual estimates taken from boats or aircraft probably caused about equal disturbance because of the short duration of estimating, and because the estimates were made from outside the nesting area. Aerial passes less than 30 m above colonies flushed most incubating individuals from their nests. A small boat could usually approach closer without exciting adults, a useful technique for exposed tern and skimmer colonies but not for gulls or herons nesting in dense vegetation.

Helicopters flushed more birds than did fixed-wing aircraft operated at similar altitudes.

Although applicable to few colonial nesters, aerial photographic counts produced the least apparent disturbance of all census methods. Photographs of adequate quality for accurate censuses were obtained during a few minutes of aerial maneuvering and at a distance from the colony that elicited no obvious alarm among nesting birds.

NESTING CHRONOLOGY AND SEASONAL COLONY ACTIVITY

Nesting chronology for 25 nesting species was compiled from 1,200 separate visits to colonies where the nesting stage was recorded. The incubation stage is used to describe timing of reproduction for all species (Figures 16 and 17), because this stage was more easily identified and quantified with respect to the nesting population than the stages of courtship, egg-laying, and hatching or fledging.

Among the waders, great blue herons nested earliest, with all colonies incubating by early March. Great egrets and black-crowned night herons began nesting next, with courtship observed in February and the peak period of incubation in late March. Snowy egrets began nesting activities soon after great egrets and Louisiana herons initiated nesting soon after the snowy egrets.

Little blue herons nesting in freshwater swamps (Figure 16) began to incubate about a month earlier than the same species nesting in salt marshes. The latter were incubating in early May. White-faced ibises, white ibises, and cattle egrets were the last species of wading birds to begin nesting.

A bimodal surge of ibis nesting intensity, as described by Palmisano (1971), was not apparent during 1976. However, it appeared that breeding adults continually immigrated into each colony from early April to mid-June. Individuals segregated into groups of synchronous nesters, with various nesting stages observable in a single colony from May through late July. The ibises were less synchronous in nesting than were other waders studied.

Reproductive schedules of reddish egrets, yellow-crowned night herons, and roseate spoonbills were similar to the other waders with which they

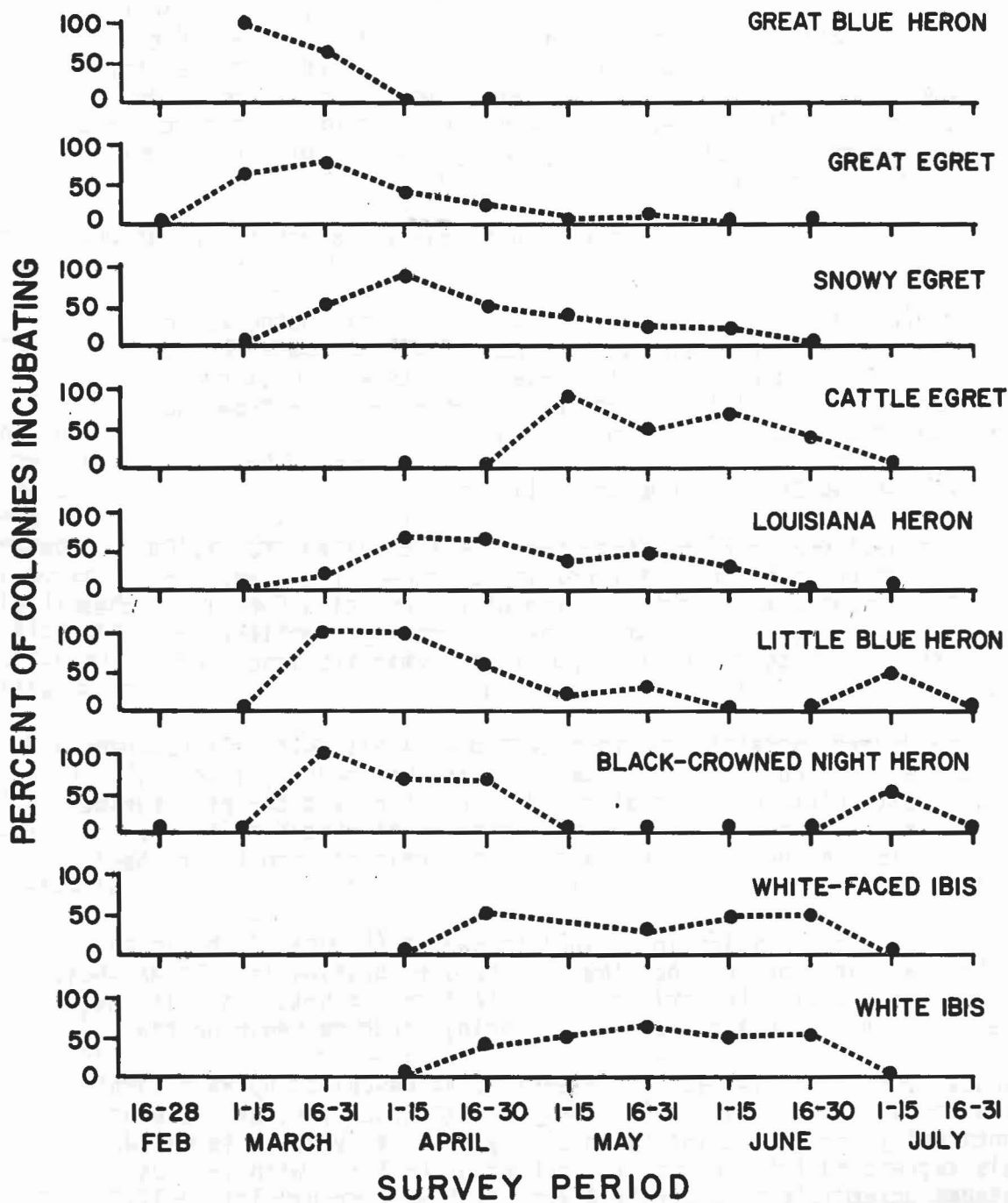


Figure 16. Seasonal timing of incubation for some common wading birds of the Northern Gulf of Mexico Coast, 1976.

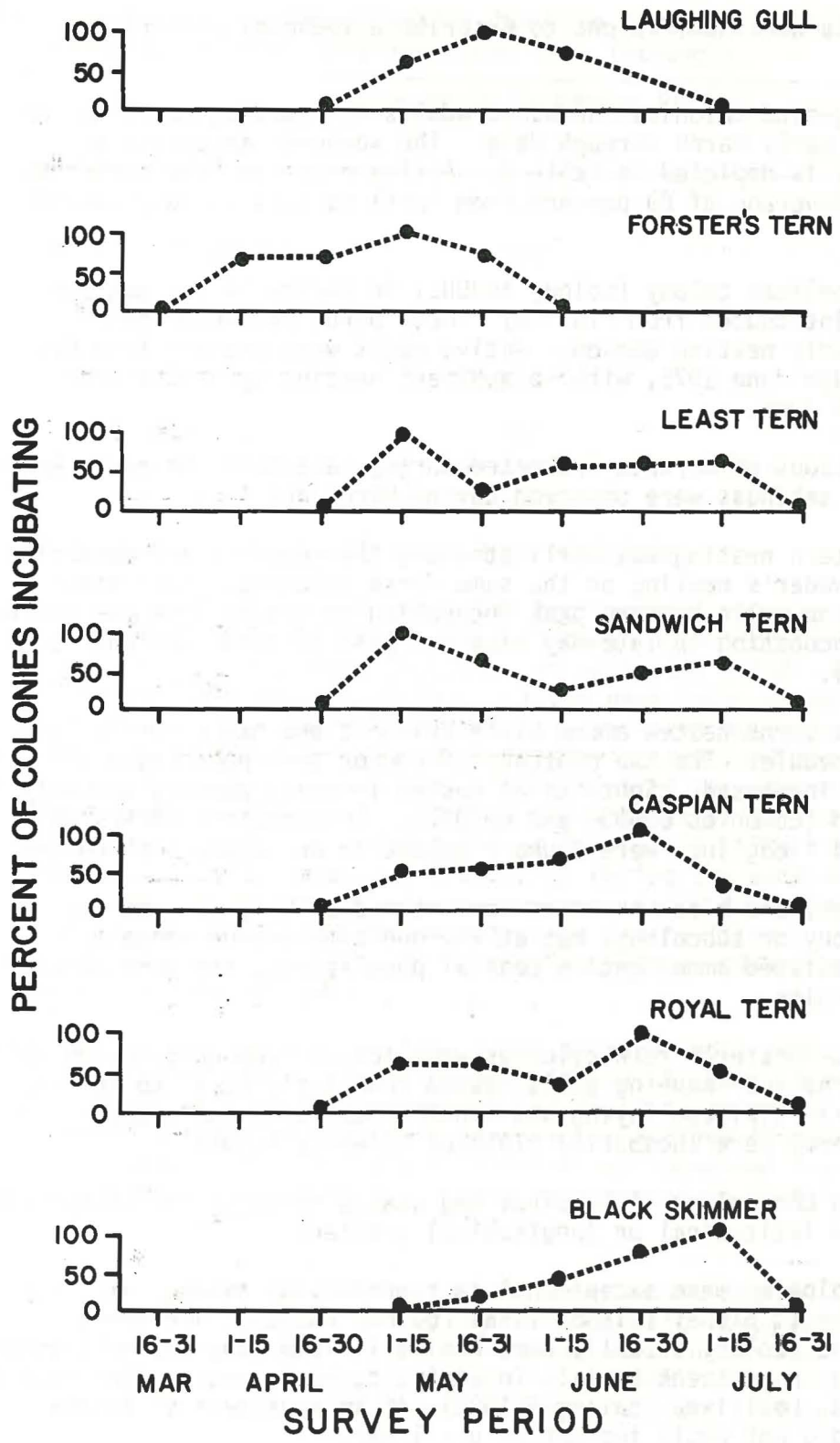


Figure 17. Seasonal timing of incubation for some common seabirds of the Northern Gulf of Mexico Coast, 1976.

associated. Data are insufficient to describe a seasonal pattern for these species.

Most wading-bird colonies contained adults in breeding condition or fledglings from early March through July. The seasonal intensity of heronry activity is depicted in Table 8. Active nests in five heronries decreased by an average of 89 percent from April samples to July samples (Table 8).

The brown pelican colony (colony 603002) in Barataria Bay was composed of birds introduced from Florida. These birds retained their traditionally early nesting season. Active nests were present from December 1975 through June 1976, with no apparent nesting synchrony from February through June.

Most olivaceous cormorants incubated during late March to early April. Most incubating anhingas were observed during March and April.

Forster's tern nesting was earliest among the seabirds and generally coincided with wader's nesting on the same marsh colonies. Most other terns and laughing gulls reached peak incubation by mid-May. A few black skimmers were incubating in late May with the peak in late June and early July (Figure 17).

Gull-billed terns nested among black skimmers and had a similarly late nesting schedule. The two clutches of common tern eggs found 15 June were being incubated. Sooty terns nested in small numbers and only on Curlew Island (colonies 603036 and 603037). Incomplete clutches were found 13 May and fledglings were found 4 August in an adjacent subcolony.

Gulls, terns, and black skimmers were reproductively synchronous within each colony or subcolony, but at any one time a wide range of nesting stages existed among entire coastal populations, and even between adjacent subcolonies.

In general, Forster's tern colonies were active from early March to July. Other terns and laughing gulls nested from early April to August. Black skimmers' initial egg laying was synchronous; some individuals, probably renesters, were incubating clutches in early August.

The nesting chronology of seabirds and wading birds in the study area did not follow a latitudinal or longitudinal gradient.

Specific colonies were exceptional in reproductive timing. For example, colonies at Sidney Island, Texas (colony 601001), and Avery Island, Louisiana (colony 602001), were active in late January, well before onset of nesting in adjacent areas. In contrast, most species that nested on Rabbit Island, Louisiana (colony 601002), 40 km southeast of Sidney Island, Texas, did not begin incubation until May.

Table 8. Seasonal Nesting Intensity for Five Typical Louisiana Heronries Based on Sampling Along Belt Transects.

Colony	Active nests by census Period		
	1-17 April	5-20 July	% decrease
601010	1,907	230	88
602040	9,683	378	97
602050	2,571	162	94
603004	14,279	2,829	80
603008	2,535	367	86

VANDALISM, INADVERTENT HUMAN DISTURBANCE, AND PROTECTION

Vandalism or intentional human disturbance of several seabird colonies was noted. The most drastic impact of apparent human intrusion was observed on Grassy Island, Louisiana (colony 590001). An estimated 2,750 incubating adult Forster's terns were present 15 May. Eleven days later an estimated 200 adults were present, few nests were occupied, and most nests contained dead young. Fifteen crippled or dead adult Forster's terns and one crippled gull-billed tern were found on the shore. Four cripples were necropsied; although no lead shot was found, the injuries were characteristic of gunshot wounds. Spent shotgun shells were not found on the island. The reproductive activity of adjacent tern colonies was unaffected during the same period; hence, environmental contamination, adverse weather, or food shortage seemed unlikely causes for the mortality and desertion on Grassy Island. This colony, one of the largest Forster's tern colonies, was abandoned by 1 July with no apparent fledging of young.

Unintentional disturbance of nesting birds appeared more common than intentional disturbance. Motorists on Dauphin Island, Alabama, drove along the beach through colonies of black skimmers and least terns on 15 June. Motorists, probably unaware of the nests, apparently enjoyed flushing the conspicuous black skimmer adults. Black skimmers had abandoned the area by 1 July. It is unlikely that young could have been reared to fledging by this date.

More than 54,000 sandwich and royal terns were incubating on Curlew Island, Louisiana (colony 603036) during the ground visit of 13 May. Several fishermen and beachcombers were walking beside, and in one case through, the colony of dense nests. Although no physical damage was noticed, adults were flushed from nests with potential egg predators (i.e., laughing gulls) nearby.

Human disturbance at wading bird colonies was not directly observed; however, several local residents described the attributes of cooked nestling herons and egrets. The practice of taking nestlings for human consumption, though difficult to quantify, is traditional and probably intensive locally.

Only 18 of the 168 colonies found within the study area were posted or otherwise protected by inclusion in State, Federal, or private refuges-- 11 in Louisiana (colonies 58801, 601004, 601006, 601007, 601009, 602001, 602002, 602006, 603028, 603034, 603049), 6 in Mississippi (colonies 590004, 590005, 590007, 590010, 590012, 590023), and 1 colony (601001) in Texas near the Texas-Louisiana boundary. Only 8 of these 18 colonies have human ingress effectively controlled (588001, 601001, 601004, 601010, 602001, 602002, 590007, 603028). Only seven colonies (601001, 601010, 602001, 590004, 590005, 590007, 590012) were posted with signs stating that the birds were nesting and legally protected.

DISCUSSION

FIXED-WING VS. ROTARY-WING AIRCRAFT

We used Cessna 172 and 185 fixed-wing and Bell G4A rotary-wing aircraft during various aspects of the field work. Fixed-wing aircraft were superior to helicopters for aerial search of the extensive marsh and swamplands of the study area because of their greater cruising speed. Safety codes prohibit helicopters from hovering below 90 m altitude and most charter helicopter pilots refused to make low passes over bird colonies. The only advantage of helicopters over fixed-wing aircraft for aerial estimates was the slightly lower minimum air speed; usually 64 km/hr in helicopters vs. 96 km/hr in fixed-wing aircraft. (Selection of pilots should be based upon their skill and their willingness to cooperate with the observers.)

Both types of aircraft were used to transport ground census crews to and from colonies at the seaward edge of the marsh or on offshore islands. Because the amphibious fixed-wing aircraft could be safely landed near these colonies except on windy days, the slower, though more maneuverable, helicopter was of no advantage. Also, helicopters were judged to be more disturbing than fixed-wing aircraft to nesting birds.

Because of its lower speed capability, the helicopter was better for high-quality aerial photography of *Thalasseus* spp. colonies, especially with the aircraft's doors removed, and was better for locating cryptic least tern colonies. With the amphibious fixed-wing aircraft, photographs of comparable quality were obtained only after considerable effort, many aerial passes and, most importantly, much time flying above the colony.

At \$75 per flight hour and \$15 per ground standby hour, the amphibious fixed-wing plane with pilot was less expensive than a small helicopter, which chartered for \$300 per day plus \$50 per flight hour. More area and

more colonies could be reached in a given time at 176 km/hr than at 96 km/hr, normal cruising speeds for Cessna 185 and Bell G4A aircraft, respectively. Time saved en route to colonies more than balanced the extra time and effort required to obtain good photographs using fixed-wing aircraft.

The Cessna 172 wheel plane was used for survey flights over freshwater marshes and swamps where landing of fixed-wing aircraft was normally impossible and the amphibious plane provided no additional safety advantage.

ESTIMATES OF ABUNDANCE

Field-tested, standardized inventory techniques were unavailable for most study species; therefore, our censuses necessarily combined experimentation along with application of various census methods.

Effects Of Asynchronous Nesting

At any one time, a colony did not contain all nesting attempts that would occur throughout the nesting season. Although most species within a colony exhibited an initial synchronized wave, some individuals nested later. Thus, an inventory at any point in time probably missed a segment of the breeding population. Also, unsuccessful breeders probably re-nested during the same season. Thus, the same adults could have been counted on successive censuses. For these reasons, asynchrony influenced inventory efforts and limited accuracy independent of census technique.

The problem of asynchronous nesting was important in estimating the abundance of *Thalasseus* spp. terns nesting within the Chandeleur Island group. In mid-May an estimated 27,000 royal and sandwich tern nests on Curlew Island (colony 603036) contained eggs. By 1 July, two additional colonies (603037 and 603050) containing an estimated 2,000 incubating birds each, were found within 20 km of the first colony. The original colony now contained feathered young. Adults in the two late colonies, apparently from the same population as the earlier nesters, were either late nesting or re-nesting after an initial failure at the primary colony. Because these late groups were located more than 1 km from the original colony, I considered them separate and discrete nesting groups.

Reliability of Inventory Methods An estimate of the relative reliability of all census methods for all species in all habitats is depicted in Figures 18 and 19.

Population estimates based on bird counts (adults on colony) are least reliable of the methods employed because: (1) the number of adults present varied with nesting stage, time of day, weather, and probably current feeding conditions; and, (2) all adults present could not be seen or photographed and counted due to cryptic coloration and because some individuals were obscured by the vegetation. Thus, bird count estimates would be least reliable for colonies in dense vegetation such as heronries in black mangrove or gull colonies in salt meadow cordgrass,

IN SALINE OR BRACKISH MARSH

IN FRESH MARSH OR SWAMP

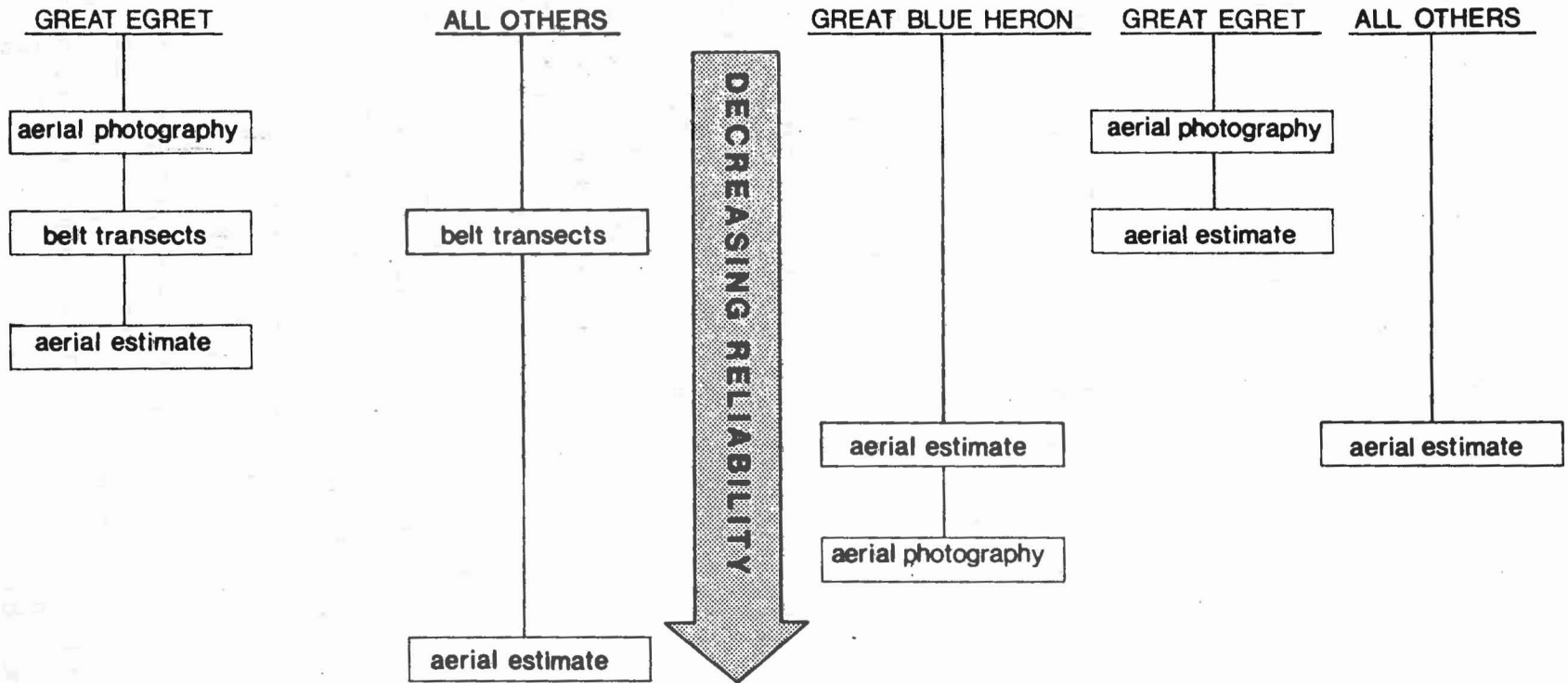


Figure 18. Relative reliability of inventory techniques for wading bird colonies in coastal Louisiana-Mississippi-Alabama during 1976.

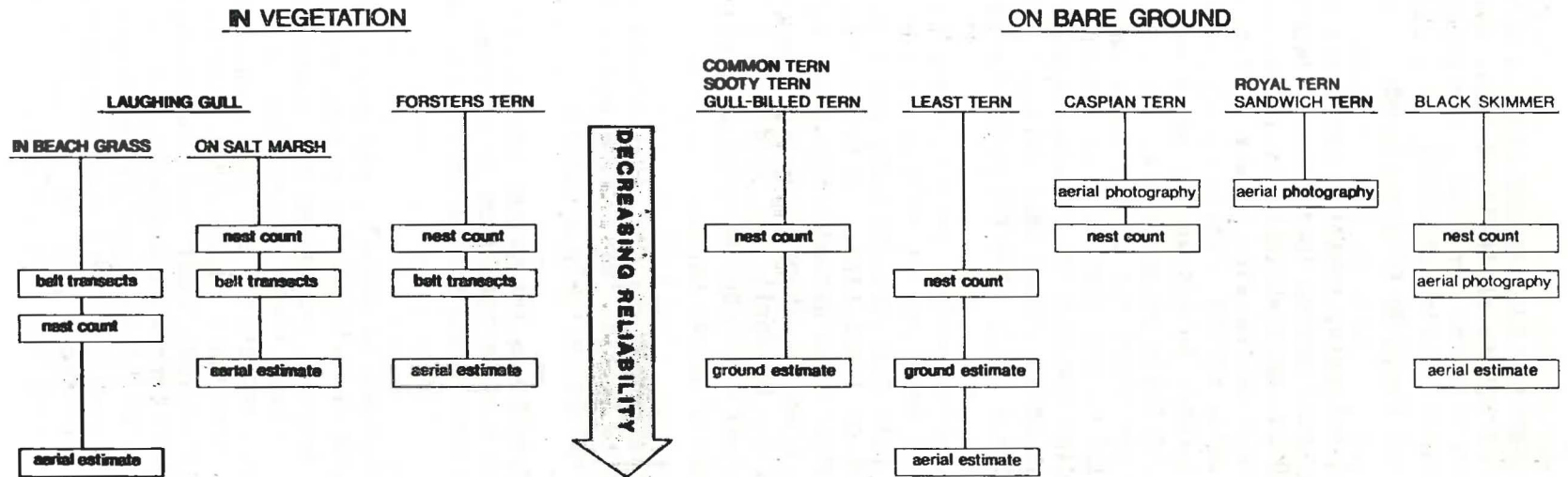


Figure 19. Relative reliability of inventory techniques for seabird colonies in coastal Louisiana-Mississippi-Alabama during 1976.

and for inconspicuous species such as the Louisiana heron, black-crowned night heron, little blue heron, white-faced ibis, and least tern. Most accurate estimates were obtained for highly conspicuous species during incubation when individual nesting attempts, or breeding pairs standing within the nesting area, could be distinguished.

The visual aerial estimate, probably the least reliable, was unfortunately the only practical method in floating (lacking a firm substrate) marsh heronries. Although most white birds in the colonies in sparse buttonbush were visible from the air, it was difficult to separate small white species (i.e., snowy egrets, cattle egrets, white ibises, and immature little blue herons) unless we passed at very close range; and then it was difficult to tally accurately by species. The most effective technique was to estimate abundance of the conspicuous white species from an altitude of about 150 m, and then to move closer, flush birds, and estimate relative species composition. Comparisons with results of ground estimates at several colonies showed that dark-colored cryptic species such as Louisiana herons were usually underestimated by aerial methods.

Visual aerial estimates produce accurate results comparable to photographic counts or ground sampling for relatively small colonies of highly conspicuous species. This category includes great egrets against dark foliage, black skimmers on light sand, and Forster's terns on wrack. Accurate visual estimates of large and conspicuous nesting aggregations were largely dependent upon the observer's skill in estimating large numbers of white objects. By April, and after about 30 hours of aerial surveying, observer visual estimates were usually within 15 percent of aerial photograph counts of great egrets.

Ground estimates were more accurate than visual aerial estimates of diffusely nesting species such as least terns and gull-billed terns, which were difficult to see against a light substrate.

The view from aircraft was far better than ground-based observations for estimating numbers at large heronries in treetops or shrubs, except where dense vegetation restricted the vertical view (heronries in dense mangrove or willow).

Counts of black skimmers in aerial photographs of colonies, taken at midday, were accurate and individuals in nesting and loafing areas could usually be separated. Because incubating and standing birds could not be distinguished from each other, these counts represent only an index of abundance. Nevertheless, regression analyses comparing contemporary counts of active nests (nests containing eggs and/or young) and bird counts for 19 black skimmer colonies during their peak in incubation, showed 2.2 adults per active nest and a 0.89 correlation coefficient ($y = 0.46x - 2.1$) regressing nests over birds). This relationship, together with the observation that skimmers rarely are seen outside the colony during midday, when the photographs were taken, indicates that the photographic bird count is a suitable measure of abundance for this species. Aerial photographic counts

taken after the young had hatched were not as reliable for estimating active nests because most adults loafed or fished beyond colony limits. The bird-to-nest ratio was more variable after hatching and generally lower than during the incubation period.

Adult black skimmers were noted in pairs on photographs of some colonies. Each pair presumably occupied a nest site, but most "pair" counts were larger than concurrent counts of active nests, probably because our "active nest" counts included only scrapes containing eggs or young. Each pair presumably occupied a nest site, which included defended patches of bare sand and empty scrapes in addition to active nests.

Nest counts yielded a closer approximation of nesting abundance at any time than did bird counts because a nest was equatable to a nesting effort by one pair of breeding birds.

Results of belt-transect sampling on black mangrove heronries are shown in Table 9. To reduce confidence limits on estimates from small heronries, a larger sample should have been collected. However, larger samples could not have been obtained in these cases without causing heightened disturbance.

Belt transects also were run through heronries on spoil islands vegetated with willow or common reed, through laughing gull colonies in beach grass (*Uniola paniculata*, *Spartina patens*, and *Paspalum* spp.), and through Forster's tern colonies in smooth cordgrass. Confidence intervals for mean transect nest densities in these colonies approximated intervals calculated for heronries in black mangrove. Also, although we usually omitted total ground counts on the same visit as transect sampling, several concurrent counts of total nests on Forster's tern colonies were within 10 percent of sampling estimates. Sampling estimates of great egret nesting groups in April agreed, within 10 percent, with aerial photographic counts of those same colonies during incubation in March.

A relationship was hypothesized between the total nesting area and the nest density of insular heronries. Data from colonies on 11 mangrove islands whose nesting areas were determined from aerial photographs showed that nest density decreased when island size and available nesting area increased; a curvilinear relationship was found. Linear regression analysis of the log transformation values of nest density and nesting area yielded a 0.91 correlation coefficient, statistical significance at the 99.9 percent level, and the equation $y = -1.90x + 7.21$ (regressing area over density).

Basic requirements of the above relationship are: (1) the heronry must be on a mangrove island within the Louisiana salt marsh; (2) the heronry must be well-occupied (new or degenerating old colonies will be necessarily diffuse and will not fit the relationship); (3) the total area used for nesting, defined by the occurrence of active nests, must be accurately mapped on the ground, and (4) field work must be conducted

Table 9. Results of Belt Transect Sampling on 11 Louisiana Heronries on Mangrove Islands.

Colony	(% of colony area Sample size)	Nest estimate	Mean density (nests/m ²) ± 95% confidence limits
602031	9.0	16,880	0.0676±0.0107
602036	11.0	2,626	0.4700±0.3267
602038	8.7	10,010	0.3906±0.1304
602040	7.9	9,683	0.6464±0.1828
602050	7.9	2,545	0.6011±0.2129
602051	8.5	3,371	0.5229±0.2389
603002	9.1	14,938	0.2151±0.0445
603004	10.8	13,857	0.1579±0.0259
603008	8.5	2,535	0.9154±0.2032
603023	10.2	4,502	0.1684±0.0532
603024	9.5	12,666	0.3230±0.0341

during April or May, assuming similar nesting chronology from year to year.

Total ground counts were best for exposed, widely spaced nests of gull-billed terns and least terns, for species that could not be adequately photographed from aircraft, and for rare species such as sooty terns, common terns, and reddish egrets which otherwise might have been underestimated or totally missed.

Counts taken from aerial photographs of incubating birds were accurate and practical for assessing abundance of great egret, royal tern, sandwich tern, and some caspian tern colonies. Individual nests attended by adults were discernible on 20-by 25-cm black-and-white prints of photographs taken below 100-m altitude. These nest counts taken from aerial photographs were comparable to concurrent ground-sampling estimates. Color and color-infrared films produced similar results, but were more expensive. Incubating birds were not frightened from nests by aircraft passing as low as 30 m. Because these species nested on top of vegetation or in the open, and in an apparently synchronous wave, it was assumed that most nesting attempts were included. Timing of census was important and would ideally have coincided with a peak in incubation, although later photographs may have sufficed with great egrets

if resolution was adequate to separate nests containing white downy young and brooding adults from loafing birds.

Aerial photographs accurately recorded all "nest-site holders" (Nettleship 1976) on royal, sandwich, and caspian tern colonies during incubation. Birds defending nest sites were found during ground inspections to be incubating eggs and were, therefore, true breeders.

Our small-format (35-mm) camera was especially restrictive on large colonies of great egrets, sandwich terns, and royal terns. A larger format (e.g., 70mm) would have improved results by reducing the need for overlapping exposures and by increasing resolution.

CONCLUSIONS

The vast and highly productive coastal zones of Louisiana, Mississippi, and Alabama support correspondingly large populations of seabirds and wading birds.

Reproductive activity occurred from February through July on most heronries, and from April through August on gull, tern, and skimmer colonies. Timing of reproduction appeared unrelated to general habitat type, latitude, or longitude.

The use of salt marsh and adjacent coastal beaches by nesting colonial birds was disproportionately high compared to the use of the more extensive freshwater and brackish habitats.

Small, fixed-wing amphibious aircraft, because of their greater speed and lower cost, were more efficient than helicopters in our particular study area. Large heronries of the coastal marsh could not be accurately censused from any aircraft, and the slightly lower speed of helicopters made little difference.

Inventories employing nest counts were more representative of current nesting abundance than those based on bird counts, because the former were not immediately affected by weather, feeding conditions, or time of day. Bird counts based upon aerial photographs were considered representative for black skimmers because most breeding adults were present and countable on the colony at midday, and because the bird-to-nest ratio at incubation was reasonably constant for all colonies.

The aerial photographic count of incubating adults was the most rapid and least disturbing census technique, but was only useful for a few highly synchronous and conspicuous species nesting in the open.

Sampling along belt transects produced reliable nest estimates and was especially useful on large heronries containing species that could not be assessed visually or photographically from aircraft.

The total ground count of active nests was a very accurate method for conspicuous nests in open situations. The observer's route through the colony had to be carefully marked to avoid miscounts.

Least reliable of all census methods tested was the aerial estimate of birds present on heronries. Dark-colored species and species nesting under vegetation could not be seen by aerial observers. Counts of conspicuous species could not be converted confidently to current nest or "breeding pair" estimates because all variables affecting the relative number of adults present were not known.

The obvious effects of ground censusing activities on nesting birds were observed during early nestling stages. Nest abandonment and loss of eggs during the incubation period due to disturbance by the observer were not determined, but could be important in reducing overall nesting success. The effects of all census methods on reproductive success should be studied further.

More data are needed to test the ability of the linear equation to predict the size of heronry populations on mangrove islands. The equation probably yields a closer approximation of nesting abundance than other methods requiring comparable expenditures when ground-based sampling is impossible.

Only 11 percent of 168 colonies surveyed were protected by the posting of signs or by restricting human access. Most of the observed intruders were curious and unaware of the potential damage caused by their presence. Adequate posting, legal protection, and public awareness of the bird's activities and their sensitivity to disturbance should reduce disturbance.

Further studies of seabirds and wading birds that nest in the coastal zone of Louisiana, Mississippi, and Alabama are needed. Additional information is required to describe and understand periodic shifts in population numbers, and colony locations.

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Appendix A

American Oystercatcher

The following information lists only those American oystercatchers found in coastal Louisiana in 1976 during ground survey of nesting wading bird and seabird colonies. These numbers are not to be construed as total population numbers for coastal Louisiana in 1976. All individuals were observed on shell berms at the seaward edge of the salt marsh.

Nearest colony	Locale	Latitude	Longitude	Number of individuals
590001	Grassy Island	30°09'	89°28'	2
590002	Three Mile Pass	30°03'	89°22'	1
590008	Isle au Pitre	30°09'	89°12'	10
590009	Brush Island	30°02'	89°10'	2
603010	Martin Island	29°58'	89°12'	5
603011	Holmes Island	29°56'	89°12'	5
603012	Conkey Cove	29°55'	89°15'	2
603014	Mitchell Island	29°54'	89°14'	2
603025	Black Bay	29°36'	89°34'	2
603040	North Island	29°53'	88°52'	4
Total				35

Appendix B

Historic Occurrence of Colonially Nesting Seabirds and Wading Birds on the Louisiana, Mississippi, and Alabama Coasts

In preparation for the field inventory during spring and summer 1976, a review of historical records was undertaken. Information was assembled on historic locations, species composition, and abundance of colonially nesting seabirds and wading birds.

Only records from within the study area (Figure B1) are included in the following tables. A library search was augmented with interviews and correspondence with refuge personnel and other local observers. Especially large contributions were supplied by Alexander Sprunt IV (62), John Walther (60), and Jacob Valentine (63).

Historical records of breeding by colonial seabirds and waders within the study area were tabulated (Table B1). Records were judged to be too fragmentary and discontinuous for defining population trends; therefore, all available observations are chronologically listed. Species are treated separately. Source numbers are ordered alphabetically in Sources and Notes. Descriptive locations given by the primary observers are sometimes difficult to place, but in most cases geographic regions are designated (Figure B1). Most units of abundance have been coded: P = Present (no numbers mentioned); PN = Present nesting (no numbers mentioned); B = Individual birds; A = Adult birds; Y = Fledglings or immature birds; BP = Breeding pairs; N = Active nests; X = Not nesting.

Regional divisions of the coast are not intended to separate distinct populations of birds that do not interchange, but are included to facilitate placement of descriptive locations, or possibly to reveal similarities in species composition among colonies within each general geographic area.

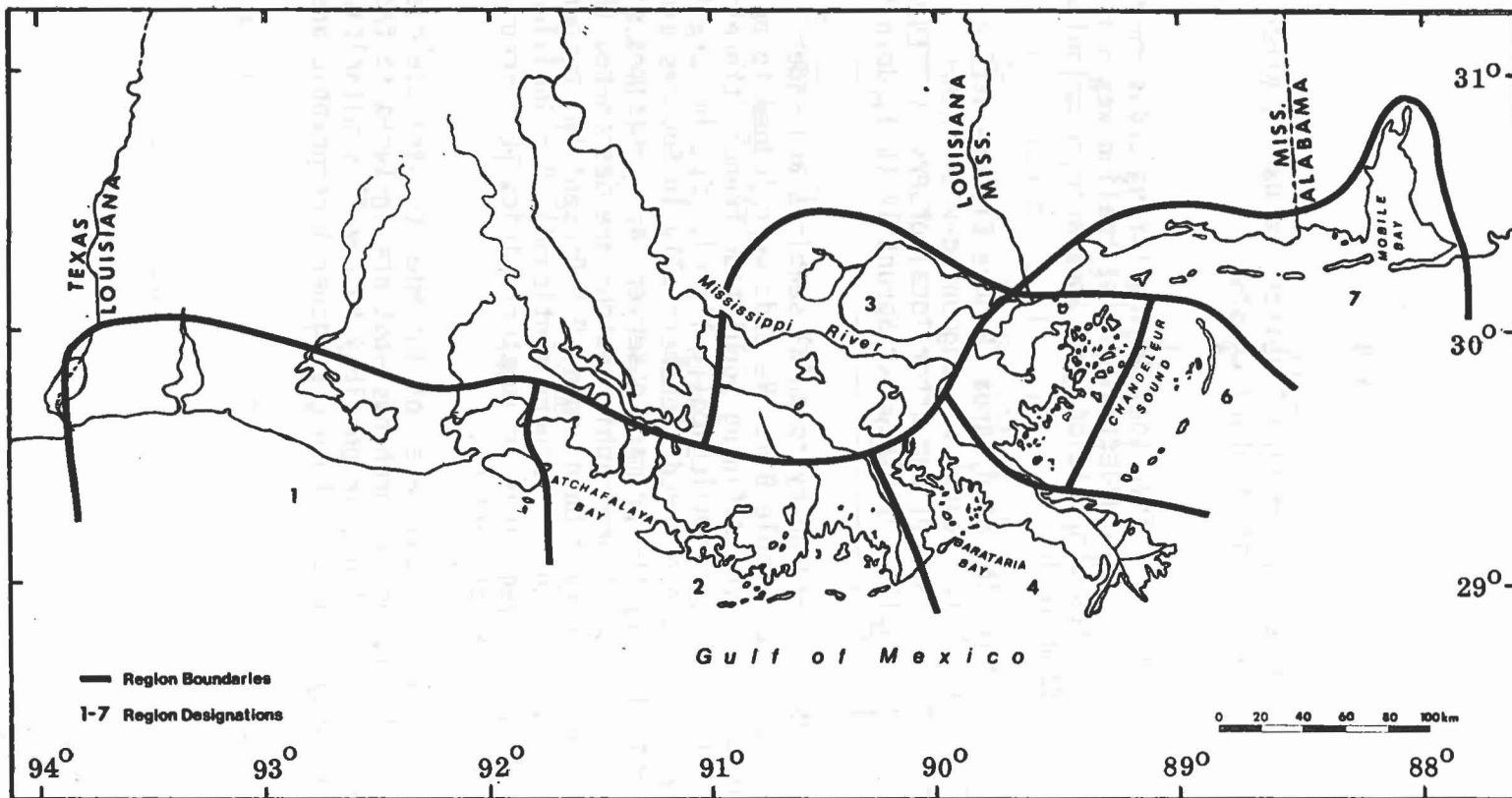


Figure B1. Gulf Coast study area and regional subdivisions used in historic records review.

Table B1. Historic Occurrence of Colonially Nesting Seabirds and Wading Birds on the Louisiana, Mississippi, and Alabama Coasts.

Date	Region	Location	Abundance	Source
Brown Pelican (<i>Pelecanus occidentalis</i>)				
General: The Brown Pelican was an abundant coastal nester until its decline in the 1950's. Extirpated as breeding bird by 1962. Reintroductions from Florida have nested from 1971.				
1837	-	Texas to N. Carolina	very abundant	3
1907	1	Shell Keys	300B	39
	4	North Pass Mud Lumps, Miss. R	20B	39
	4	Northeast Pass Mud Lumps	600B	39
	4	Southeast Pass Mud Lumps	7,500B	39
6/1915 1917	2	E. Timbalier I.	13,000B	2
	6	Errol I. and Grand Gosier I.	2,000B	7
	4	Mississippi R. Mud Lumps	50,000+B	7
1918	6	Errol I.	12N	8
	4	Mississippi R. Mud Lumps	50,000B	8
	6	Chandeleur Islands	PN	12
	6	Grand Gosier I.	1,200N	9
	4	Mouth of South Pass, Miss. R.	abundant	30
1922	6	Breton I.	PN	15
	2	E. Timbalier I.	PN	15
1931	6,5	N. Keys of Freemason I., Grassy I.		
	6,4	Grand Gosier I., Pass a Loutre Mud Lumps	35,000-50,000B	2
		Louisiana Coast	75,000-80,000B	2
	6	North I.	PN	34
	6	Curlew I.	PN	34
	4	Mississippi R. Mud Lumps	PN	34
1933	6	North Island	2,300N	54
	4	Pass a Loutre Mud Lumps	4,550B	54
	2	Belle Pass I. (E. of Timbalier I.)	1,000N	54
		Louisiana Coast	5,500N; 14,000A	54
	4	Pass a Loutre Mud Lumps	thousands	33
to 1938	6	Chandeleurs	PN	54
	2	Isles Dernieres	PN	54
	6	Grand Gosier I.	PN	54
5/1938	6	North I.	PN	27
6/1941	6	North I.	large colony	47
	2	E. Timbalier I.	5,000A	47
1943	-	Louisiana Coast	unchanged since 1880's	51
to 1944	7	Mississippi Coast	x	20
1950	6	North I.	8,000-10,000N	49
1954	-	Louisiana Coast	abundant	46
1956	2	Isles Derniers	large colony	53
	6	North I.	3,000A	49
1959	6	North I.	850BP	62
1960	6	North I.	200BP	31
	4,6	Delta NWR & Breton NWR	x	25
6/1961	6	North I.	200BP; 100Y	64

Table B1. (continued)

Date	Region	Location	Abundance	Source
Brown Pelican (Cont'd)				
	6	North I.	150N	31
1962	6	North I.	x	52
1965	4	Delta NWR	x	25
1966- 1975	4	Delta NWR	x	25
1971	4	Queen Bess I.	13N	49
1972	4	Queen Bess I.	14Y	37
5/1973	4	Queen Bess I.	10BP	62
5/1974	4	Queen Bess I. Queen Bess I.	35BP 200A; 100Y	62 50
5/1975	4	Queen Bess I.	50BP	62
Double-Crested Cormorant (<i>Phalacrocorax auritus</i>)				
General: Old records indefinite due to probable confusion of <i>P. auritus</i> (Double-crested Cormorant) with <i>P. olivaceus</i> (Olivaceous Cormorant)				
1908	-	Louisiana Coast	common nester	17
1922	-	Louisiana Coast	PN	15
1930	1	Bird Island, Cameron	12BP	12
1940	-	Louisiana	PN	22
1943	1	Shell Hill, Sabine NWR	19BP	60
1944	1	Sabine NWR	abundant	60
1945	1	Shell Hill	PN	60
Olivaceous Cormorant (<i>Phalacrocorax olivaceus</i>)				
General: <i>P. olivaceus</i> was apparently confused with <i>P. auritus</i> in the early literature (prior to 1940's).				
1837	-	Gulf Coast	abundant nester	3
1908	-	Louisiana Coast	common nester	17
6/1919	1	Black Bayou, Cameron Black Bayou	several nests 1N	26 54
1922	1	S. Louisiana, Lake Arthur	PN	15
1930	1	Bird Island, Cameron	20N	12
1940	-	S. Louisiana	PN	22
1948	1	Black & Blue Groves, Lacassine NWR	250BP	42
1949- 1975	1	Lacassine NWR	200BP	42
1952	1	Shell Hill	100BP	60
1953- 1964	1	Shell Hill	50-100BP	60

Table B1. (continued)

Date	Region	Location	Abundance	Source
1954	-	Olivaceous Cormorant (Cont'd) Louisiana Coast	common nester	46
5/1958	1	Blue & Purple Grove, Lacassine NWR	several hundredBP	62
	1	Shell Hill	300BP	62
1959	1	Purple Grove, Lacassine NWR	PN	62
5/1965	1	The Burn, Lacassine NWR	several BP	62
	1	Blue & Purple Grove	PN	62
	1	Shell Hill	150BP	62
1965	1	Shell Hill	450BP	60
	4	Delta NWR	x	25
1966/ 1975	1	Shell Hill	20-100BP	60
1966- 1975	4	Delta NWR	x	25
1970- 1975	1	Gum Cove Ranch, Cameron	PN	53
5/1972	1	Oak Grove, Cameron	20BP	62
	1	Rabbit Island, Cameron	120BP	62
	1	Shell Hill	200BP	62
	1	Lacassine NWR II	25BP	62
	1	Lacassine NWR III	50BP	62
	1	Blue Grove, Lacassine NWR	200BP	62
	1	Purple Grove, Lacassine NWR	20BP	62
	1	Grand Lake	20BP	62
	1	Sidney I.	300BP	62
5/1973	1	Lacassine NWR	140BP	62
	1	Little Chenier	100BP	62
	1	E. of Lake Charles-Grand Chenier Rd.	12BP	62
	1	Creole Oil Well Rd.	300BP	62
	1	Rabbit I., Cameron	130BP	62
	1	Shell Hill	2BP	62
5/1974	1	Grand Lake	15BP	62
	1	Lacassine NWR I	75BP	62
	1	Blue & Purple Grove	30BP	62
	1	Lake Misere	1,500BP	62
	1	Creole Oil Well Rd.	25BP	62
	1	Sidney I.	150BP	62
1974	1	Moore Ranch, Cameron	PN	4
	1	Shell Hill	80BP	4

Great Blue Heron (*Ardea herodias*)

General: The Great Blue Heron has nested sparingly along the Louisiana and Mississippi Coastal Marshes.

2/1920	1	Bird I., Black Bayou	70N	26
1926	3,1	Houma & Cameron Parish	PN	16
1940	4	S.E. Louisiana & Gulf Coast	PN	22

Table B1. (continued)

Date	Region	Location	Abundance	Source
Great Blue Heron (Cont')				
1941-1975	1	Shell Hill	75BP	60
1944	7	Deer I., MS	PN	20
1948-1962	1	Blue & Black Groves, Lacassine NWR	100-300BP	42
1954	-	Gulf Coast	common nester	46
5/1958	1	Blue & Purple Groves	60BP	62
	1	Shell Hill	50BP	62
	1	Browns Knoll, Sabine NWR	3BP	62
5/1959	3	Ponchatoula	35BP	62
	1	Lacassine Intracoastal	15BP	62
	1	Purple Grove	8BP	62
	1	Lake Misere	45BP	62
	1	Shell Hill	30BP	62
1963-1975	1	Lake Misere	50BP	42
5/1965	3	Ponchatoula	100BP	62
	1	Lacassine Intracoastal	x	62
	1	Purple Grove	75BP	62
	1	Blue Grove	50BP	62
	1	Lake Misere	15BP	62
	1	Shell Hill	45BP	62
	1	Sabine Marsh	40BP	62
1965-1974	4	Delta NWR	x	25
1966	1	Lacassine NWR	153BP	42
	4	Delta NWR	x	25
1968	1	Lacassine NWR	72BP	63
1969	1	Lacassine NWR	29BP	63
1970-1975	1	Gum Cove Ranch, Cameron	PN	53
5/1972	3	Lake Maurepas South	100BP	62
	1	Shell Hill	15BP	62
	3	Ponchatoula	250BP	62
	1	Lacassine NWR II	20BP	62
	1	Blue Grove	30BP	62
	1	Purple Grove	20BP	62
5/1973	3	Manchac Swamp	200BP	62
	3	S.W. of Ponchatoula	50BP	62
	3	Near town of Ponchatoula	135BP	62
	3	S. of Lake Maurepas	300BP	62
	1	Lacassine NWR	57BP	62
	1	Shell Hill	6BP	62
5/1974	1	Grand Lake	20BP	62
	1	Lacassine NWR	370BP	62
	1	Little Chenier	8BP	62
	3	Tickfaw River	100BP	62

Table B1. (continued)

Date	Region	Location	Abundance	Source
Great Blue Heron (Cont't)				
1963-1975	1	Lake Misere	50BP	42
5/1965	3	Ponchatoula	100BP	62
	1	Lacassine Intracoastal	x	62
	1	Purple Grove	75BP	62
	1	Blue Grove	50BP	62
	1	Lake Misere	15BP	62
	1	Shell Hill	45BP	62
	1	Sabine Marsh	40BP	62
1965-1974	4	Delta NWR	x	25
1966	1	Lacassine NWR	153BP	42
	4	Delta NWR	x	25
1968	1	Lacassine NWR	72BP	63
1969	1	Lacassine NWR	29BP	63
1970-1975	1	Gum Cove Ranch, Cameron	PN	53
5/1972	3	Lake Maurepas South	100BP	62
	1	Shell Hill	15BP	62
	3	Ponchatoula	250BP	62
	1	Lacassine NWR II	20BP	62
	1	Blue Grove	30BP	62
	1	Purple Grove	20BP	62
5/1973	3	Manchac Swamp	200BP	62
	3	S.W. of Ponchatoula	50BP	62
	3	Near town of Ponchatoula	135BP	62
	3	S. of Lake Maurepas	300BP	62
	1	Lacassine NWR	57BP	62
	1	Shell Hill	6BP	62
5/1974	1	Grand Lake	20BP	62
	1	Lacassine NWR	370BP	62
	1	Little Chenier	8BP	62
	3	Tickfaw River	100BP	62
	3	Lake Maurepas	75BP	62
	3	Gheens # 1	75BP	62
	2	North Bend	50BP	62
	2	Amelia	130BP	62
1974	1	Black Lake	PN	4
	1	Shell Hill	8BP	4
5/1975	2	North Bend	100BP	62
	2	E. of Amelia	300BP	62
	3	Gheens	40BP	62
	1	E. of Grand Lake	30BP	62
	1	Lake Misere	175BP	62
	1	S. of town of Lacassine	5BP	62
	3	S. of Lake Maurepas	75BP	62
	3	N. of Lake Maurepas	225BP	62
1975	1	Pool 1A, Sabine NWR	8BP	5
	1	Shell Hill	8BP	5
	2	Kent Bayou	PN	5
	2	S. of Lake Penchant	PN	5

Table B1. (continued)

Date	Region	Location	Abundance	Source
Great Blue Heron (Cont'd)				
	4	Big I., Barataria Bay	25BP	5
	4	Delta NWR	50BP	5
	1	S.W. White Lake	150BP	62
	1	E. Grand Lake	60BP	62
	1	Little Chenier	50BP	62
	1	Sidney I.	100BP	62
	1	Black Lake Intracoastal	70BP	62
	1	Lake Misere	275BP	62
1975	1	Lacassine NWR	550BP	5
	1	Shell Hill	80BP	5
Anhinga (<i>Anhinga anhinga</i>)				
General: Anhingas are most numerous in freshwater areas north of the coastal zone.				
1922	-	Louisiana	PN	15
1938	1	Avery I.	PN	54
1939- 1972	1	Willow I. & Big Burn	50BP	42
1940- 1958	1	Shell Hill	2-20BP	60
to 1944	7	Mississippi Coast	x	20
1965	4	Delta NWR	x	25
1966- 1975	4	Delta NWR	x	25
5/1972	1	Lacassine NWR III	12BP	62
	1	Avery I.	6BP	62
5/1973	1	Little Chenier	24BP	62
5/1974	1	Avery I.	5BP	62
	1	Weeks I. -Marsh 1	8BP	62
	1	Lacassine NWR	10BP	62
	2	S.E. of Jeanerette	30BP	62
	2	Lake de Cade	12BP	62
1974	1	Little Chenier	5BP	4
	3	Covington	6BP	4
5/1975	2	E. of Weeks I.	25BP	62
	1	Lake Misere	40BP	62
	1	S. of town of Lacassine	20BP	62
Great Egret (<i>Casmerodius albus</i>)				
General: The Great Egret was decimated by plume hunters during the late nineteenth century, but recovered rapidly after 1915.				
1920	1	Bird I., Black Bayou	small numbers	26
1926	4	Mississippi R. Delta Cameron Parish	PN PN	16 16
6/1930	1	Bird I., Cameron	12BP	12
1933	1	Cameron coastal marsh	PN	33

Table B1. (continued)

Date	Region	Location	Abundance	Source
Great Egret (Cont'd)				
1939-1975	1	Lacassine NWR	300-500BP	42
1941-1975	1	Sabine NWR	2,000BP	60
to 1944	7	Mississippi Coast	x	20
1958	1	Avery I.	PN	61
5/1958	1	Willow Island, Lacassine NWR	350BP	62
	1	Blue & Purple Grove	175BP	62
	1	Shell Hill	400BP	62
	1	Lake No. 1, Sabine NWR	800BP	62
	1	Browns Knoll, Sabine NWR	20BP	62
	1	Avery I., Bird City	400BP	62
	3	Ponchatoula No. 1	300BP	62
	3	Ponchatoula No. 2	200BP	62
	3	Huey Long Bridge	150BP	62
5/1959	6	North I.	35BP	62
	4	Bird I., Taylor Pass, Plaquemines	500BP	62
	4	Cyprion Bay	50BP	62
	2	Lake Hatch	150BP	62
	3	Huey Long Bridge	150BP	62
	3	Ponchatoula No. 1	150BP	62
	3	Lake Boeuf	200BP	62
	1	Deadman Island, Vermillion	50BP	62
	1	Weeks I., Iberia	5BP	62
	1	Avery I., Bird City	440BP	62
	1	Lacassine Bayou, Lacassine NWR	300BP	62
	1	Lacassine Intracoastal	65BP	62
	1	The Burn, Lacassine	75BP	62
	1	Shell Hill	1BP	62
	1	Lake No. 1, Sabine NWR	350BP	62
	1	Sabine Marsh	400BP	62
	1965	4	Delta NWR	x
5/1965	6	North I. and New Harbor I.	46BP	62
	4	Bird I., Plaquemines	40BP	62
	4	Venice Complex	35BP	62
	4	Cyprion Bay	x	62
	4	Barataria East, Plaquemines	40BP	62
	4	Barataria Bay West, Lafourche & Jefferson	100BP	62
	2	Lake Hatch	100BP	62
	3	Huey Long Bridge	x	62
	3	Ponchatoula No. 1	450BP	62
	3	Lake Boeuf	x	62
	1	Deadman Island	150BP	62
	1	Weeks Island	x	62
	1	Avery I., Bird City	300BP	62
	1	Lacassine Bayou	120BP	62
	1	Lacassine Burn	500BP	62
	1	Lacassine Intracoastal	x	62
	1	Purple Grove, Lacassine NWR	350BP	62
	1	Blue Grove, Lacassine NWR	40BP	62
	1	Lake Misere	20BP	62
	1	The Burn, Cameron	275BP	62
1	Rabbit I., Cameron	125BP	62	
1	Shell Hill	20BP	62	
1	Sabine Marsh	200BP	62	

Table B1. (continued)

Date	Region	Location	Abundance	Source
Great Egret (Cont'd)				
1966	6	Breton Islands NWR	30N	25
	7	Petit Bois Island	3N	25
1966- 1973	4	Delta NWR	x	25
1967	6	Breton I. and Chandeleurs	22N	25
1968	6	Breton Islands NWR	8N	25
1969	6	North I. and New Harbor I.	<20BP	63
1970	2	W. Islands of Isles Dernieres	600N	52 (24:692)
1971	6	North I. and New Harbor I.	<20BP	63
	6	Breton Islands NWR	8N	25
	6	Crane I.	800BP	71
5/1972	4	Barataria Bay East, Plaquemines	475BP	62
	4	Barataria Bay West, Lafourche & Jefferson	697BP	62
5/1972	3	L. Maurepas S.	300BP	62
	3	Gheens	100BP	62
	1	Oak Grove, Cameron	6BP	62
	1	Rabbit I., Cameron	1,500BP	62
	3	Ponchatoula	800BP	62
	1	Lacassine No. II	750BP	62
	1	Lacassine No. III	1,200BP	62
	1	Blue Grove, Lacassine NWR	x	62
	1	Purple Grove, Lacassine NWR	x	62
	1	Avery I.	575BP	62
	1	Deadman I.	400BP	62
	1	Grand Lake	250BP	62
	1	Lacassine No. 1	150BP	62
	1	Sidney I.	2,500BP	62
1973	6	North I. and New Harbor I.	<20BP	63
5/1973	2	N. Sweet Bay Lake	500BP	62
	3	Lake Boeuf	350BP	62
	3	Gheens	1,250BP	62
	3	S.W. of Lake Salvador	200BP	62
	4	Barataria Bay West	1,470BP	62
	4	Barataria Bay East	1,485BP	62
	2	East Bend	130BP	62
	4	Venice Complex	150BP	62
	4	Grand Bay	670BP	62
	6	Chandeleur Islands	50BP	62
	3	Manchac Swamp	150BP	62
	3	S.W. of Ponchatoula	100BP	62
	3	Ponchatoula (near town)	150BP	62
	3	S. of Lake Maurepas	600BP	62
	1	Avery I., Bird City	450BP	62
	1	Deadman Island	600BP	62
	1	Rainey	85BP	62
	1	Lacassine NWR	35BP	62
	1	Little Chenier	250BP	62
	1	Creole Oil Well Rd.	100BP	62
	1	Rabbit Island	525BP	62
	1	N.E. of Sabine NWR	50BP	62

Table B1.(continued)

Date	Region	Location	Abundance	Source
Great Egret (Cont'd)				
1974	4	Long Island Bayou, Delta NWR	PN	25
5/1974	1	Avery I., Bird City	250BP	62
	1	Avery I., Saline Pond	85BP	62
	1	Weeks I., Marsh 1.	150BP	62
	1	Deadman I.	250BP	62
	1	Rainey	125BP	62
	1	E. of Grand Lake	150BP	62
	1	Lacassine NWR # 1	350BP	62
	1	Lacassine NWR # 2	10BP	62
	1	Lake Misere	3,000BP	62
	1	Creole Oil Well Rd.	40BP	62
	3	Tickfaw River	60BP	62
	3	Ponchatoula	900BP	62
	3	Lake Maurepas	450BP	62
	3	Lake des Allemands	50BP	62
	3	Gheens	800BP	62
	2	Jeanerette	150BP	62
	2	North Bend	450BP	62
	2	Amelia	450BP	62
	2	Sweet Bay Lake	100BP	62
	2	Palmetto Bayou	150BP	62
	2	Lake de Cade	200BP	62
	2	Timbalier Bay	90BP	62
	4	Barataria Bay West	790BP	62
	4	Queen Bess Island	20BP	62
	4	Barataria Bay East	1,150BP	62
4	Venice Complex	60BP	62	
5	Black Bay	390BP	62	
1	Lake Calcasieu	25BP	62	
1	Sidney I.	1,000BP	62	
1	Rabbit I.	800BP	62	
1	Johnson's Bayou	100BP	62	
1975	1	S. Misere Marsh, Lacassine NWR	1,000FP	5
	1	Rabbit I.	700BP	5
	2	N. of Bayou Penchant (near Kent B)	1,000BP	5
	4	2 mi. S. of Little Lake	1,000BP	5
	4	N.E. of Big I., Barataria Bay	1,000BP	5
	4	Long Island Bayou, Delta NWR	700BP	5
	4	1/4 mi. N. of Quarantine Station	1,000BP	5
	1	Avery I., Bird City	450BP	65
5/1975	1	Avery I., Bird City	200BP	62
	1	Avery I., Saline Pond	175BP	62
	1	Weeks I., Marsh 1	200BP	62
	1	Weeks I., Marsh 2	225BP	62
	2	Franklin	100BP	62
	2	North Bend	225BP	62
	2	Sweet Bay Lake	350BP	62
	2	Amelia	600BP	62
	3	Lake Boeuf	25BP	62
	3	Gheens	160BP	62
	2	Lake Hatch	100BP	62
	2	Lake de Cade	700BP	62
	2	E. Timbalier Bay (3 parts)	650BP	62
	4	Barataria Bay West	1,175BP	62
	4	Barataria Bay East	1,025BP	62
1	Deadman Island	250BP	62	
1	S.W. White Lake	50BP	62	

Table B1. (continued)

Date	Region	Location	Abundance	Source
		Great Egret (Cont'd)		
	1	E. Grand Lake	450BP	62
	1	Creole Oil Well Rd.	50BP	62
	1	Little Chenier	160BP	62
	1	Rabbit I.	2,000BP	62
	1	Sidney I.	450BP	62
	1	N. of Black Lake (Intracoastal)	120BP	62
	1	Lake Misere Periphery	475BP	62
	1	Mermentau River Mouth	40BP	62
	3	Manchac White Ibis (2 parts)	650BP	62
	3	Lake Maurepas West	150BP	62
	3	Lake Maurepas South	350BP	62

Snowy Egret (*Egretta thula*)

General: The Snowy Egret quickly recovered from decimation by plume hunters during the 1880's and 1890's.

1907	2	E. Timbalier Island	PN	17
	1	Avery I.	PN	17
1908	2	E. Timbalier Island	PN	41
7/1908	6	Breton I. Reservation	40BP	40
6/1908	6	Battledore I.	PN	38
1910	1	Avery I.	2,000BP	28
1913	4	Mississippi River Mouth	abundant	24
1920	1	Bird I., Cameron	abundant	26
1930	1	Avery I. and Marshes	PN	12
1931	1	Avery I.	big colonies	2
	1	Cameron & Calcasieu Parishes	big colonies	2
	4	Saltwater Islands of Plaquemines Parish	big colonies	2
1932	1	Cameron marsh	PN	33
1938	1	Avery I.	largest extant colony	54
		S. Louisiana	many colonies	54
to 1944	7	Mississippi	x	20
1935-	1	Willow I.	abundant	42
1975	1	Blue & Black Groves	abundant	42
	1	Big Burn	abundant	42
1940-	1	Bird I., Cameron	abundant	60
1975	1	Calcasieu Spoilbanks	abundant	60
	1	Shell Hill	abundant	60
5/1958	1	Willow I., Lacassine NWR	600BP	62
	1	Shell Hill	100BP	62
	1	W. Shore, Lake No. 1, Sabine NWR	800BP	62
	1	Rainey	15BP	62
	1	Avery I., Bird City	150BP	62
	1	Avery I., Saline Pond	100BP	62
	1	Avery I., Duck Pond	25BP	62
	3	Ponchatoula	150BP	62
	3	Huey Long Bridge	150BP	62

Table B1. (continued)

Date	Region	Location	Abundance	Source
Snowy Egret (Cont'd)				
5/1959	6	North I., St. Bernard Parish	50BP	62
	4	Taylor's Pass Bird Island	350BP	62
	4	Cyprion Bay	25BP	62
	2	Lake Hatch	300BP	62
	3	Huey Long Bridge	150BP	62
	3	Ponchatoula	450BP	62
	3	Lake Boeuf	250BP	62
	1	Deadman Island	250BP	62
	1	Weeks I.	375BP	62
	1	Avery I., Bird City	250BP	62
	1	Avery I., Saline Pond	350BP	62
	1	Lacassine bayou, Lacassine NWR	500BP	62
	1	Lacassine Intracoastal	620BP	62
	1	The Burn	350BP	62
	1	W. Shore Lake No. 1 Sabine NWR	30BP	62
	1	Sabine NWR Marsh	500BP	62
1965- 1973	4	Delta NWR	x	25
5/1965	6	North and New Harbor Islands	54BP	62
	4	Taylor Pass Bird Island	420BP	62
	4	Venice Complex	115BP	62
	4	Cyprion Bay	x	62
	4	Barataria Bay East	40BP	62
	4	Barataria Bay West	2,616BP	62
	2	Lake Hatch	400BP	62
	3	Huey Long Bridge	x	62
	3	Ponchatoula No. 2	x	62
	3	Lake Boeuf	200BP	62
	3	Gheens	1,000BP	62
	1	Deadman Island	400BP	62
	1	Weeks I.	x	62
	1	Avery I., Bird City	25BP	62
	1	Avery I., Saline Pond	x	62
	1	Lacassine Bayou	540BP	62
	1	Lacassine Burn	300BP	62
	1	Lacassine Intracoastal	x	62
	1	The Burn	650BP	62
	1	Rabbit I.	350BP	62
	1	W. Shore Lake No. 1, Sabine NWR	x	62
	1	Sabine Marsh	250BP	62
1966	4	Delta NWR	x	25
	6	Breton Islands NWR	25N	25
1967	6	Breton Islands NWR	25N	25
1968	6	Breton Islands NWR	12N	25
1969- 1975	6	Chandeleurs, North & New Harbor I	<20BP	63
1970	2	W. Islands of Isle Dernieres	900N	52 (24:692)
1971	4	Crane I.	2,000BP	71
1972- 1975	1	Rabbit I.	abundant	60
5/1972	4	Barataria Bay East	1,100BP	62

Table B1. (continued)

Date	Region	Location	Abundance	Source
Snowy Egret (Cont't)				
5/1972 (cont'd)	3	Gheens	225BP	62
	4	Barataria bay West	1,767BP	62
	1	Little Chenier	125BP	62
	1	Rabbit I.	4,000BP	62
	1	Lacassine NWR No. II	750BP	62
	1	Lacassine NWR No. III	2,400BP	62
	1	Avery I.	10BP	62
	1	Grand Lake	600BP	62
	1	Sidney I.	2,000BP	62
	1	Lake Boeuf	450BP	62
5/1973	2	N. Sweet Bay Lake	1,250BP	62
	3	Lake Boeuf	1,400BP	62
	3	Gheens	300BP	62
	3	S.W. of Lake Salvador	500BP	62
	4	Barataria Bay West	2,830BP	62
	4	Barataria Bay East	3,150BP	62
	4	Venice Complex	1,250BP	62
	4	Grand Bay	3,600BP	62
	3	Manchac Swamp	3,000BP	62
	1	Deadman I.	150BP	62
	1	Little Chenier	400BP	62
	1	Rabbit I.	5,300BP	62
1974	2	Raccoon Pt., Isles Dernieres	1,500BP	4
	4	Long I. bayou, Delta NWR	PN	25
	7	Cat. I., Alabama	100BP	69
5/1974	1	Avery I., Bird City & Saline Pond	x	62
	1	Weeks I., Marsh 2	25BP	62
	1	Deadman I.	50BP	62
	1	Rainey	75BP	62
	1	E. of Grand Lake	225BP	62
	1	Mermentau River mouth	100BP	62
	1	Lacassine NWR	800BP	62
	1	Little Chenier	250BP	62
	3	Ponchatoula	1,660BP	62
	3	Lake des Allemands	2,000BP	62
5/1974	3	Lake Boeuf	840BP	62
	3	Gheens	50BP	62
	3	Lake Salvador	100BP	62
	3	S. of Long Lake	340BP	62
	1	Jeanerette	200BP	62
	2	Franklin	650BP	62
	2	Sweet Bay Lake	200BP	62
	2	Palmetto Bayou, Terrebonne Parish	600BP	62
	2	Lake de Cade	960BP	62
	2	Timbalier Bay	1,550BP	62
	4	Barataria Bay West	995BP	62
	4	Queen Bess I.	65BP	62
	4	Barataria Bay East	1,600BP	62
	4	Venice Complex	210BP	62
	5	Telegraph Point	20BP	62
	5	Black Bay	1,685BP	62
	1	Lake Calcasieu	25BP	62
	1	Sidney I.	1,800BP	62
	1	Rabbit I., Lake Calcasieu	5,800BP	62
	1	Johnson's Bayou	600BP	62
	2	Lake Hatch	200BP	62
1975	2	N. of Bayou Penchant	1,000BP	5
	4	2 mi. S. of Little Lake	200BP	62

Table B1.(continued)

Date	Region	Location	Abundance	Source
Snowy Egret (Cont'd)				
5/1975	1	Weeks I., Marsh 1	100BP	62
	2	Franklin	300BP	62
	2	North Bend	600BP	62
	2	Sweet Bay Lake	500BP	62
	2	Palmetto Bayou	500BP	62
	3	Lake Roef	500BP	62
	3	Gheens	50BP	62
	3	Long Lake	700BP	62
	2	Lake Hatch	800BP	62
	2	Lake de Cade	600BP	62
	2	E. Timbalier Bay	1,740BP	62
	4	Barataria Bay West	900BP	62
	4	Queen Bess I.	125BP	62
	4	Barataria Bay East	850BP	62
	1	Deadman I.	250BP	62
	1	S.W. White Lake	250BP	62
	1	E. Grand Lake	50BP	62
	1	Creole Oil Well Rd.	500BP	62
	1	Little Chenier	15BP	62
	1	Rabbit I.	4,000BP	62
	1	Sidney I.	750BP	62
	1	Black Lake Intracoastal	50BP	62
	1	Lake Misere	600BP	62
	3	Manchac White Ibis	1,000BP	62
	2	N.W. of Houma	25BP	62

Reddish Egret (*Dichromanassa rufescens*)

General: The Reddish Egret has been found nesting in small numbers from Raccoon Point, Isles Dernieres, to the Chandeleurs.

1906	-	Louisiana Coast	PN	17
1926	2	Timbalier I.	PN	16
to 1944	7	Mississippi Coast	x	20
to 1954	4	Barataria Bay	PN	1
1958	6	North I.	1N	52 (12:419)
6/1958	6	North I.	1BP	47
1960	6	Chandeleur Islands	5N	52 (14:454)
1962	6	North I.	1BP	52
5/1965	6	North I. and New Harbor I.	5BP	62
1965- 1974	4	Delta NWR	x	25
1968	6	North, New Harbor and Freemason I.	<10BP	63
1968	6	Breton Islands NWR	2N	25
1970	6	North I.	1BP	52 (24:692)

Table B1.(continued)

Date	Region	Location	Abundance	Source
Reddish Egret (Cont'd)				
1970- 1975	6	New Harbor Islands	PN	53
1971	6	Breton Islands NWR	8N	25
	6	North, New Harbor, and Freemason I.	<10BP	63
1973	6	North, New Harbor, and Freemason I.	<10BP	63
1974	6	North I.	10BP	4
	6	Raccoon Point	5BP	4
	6	North, New Harbor, and Freemason I.	<10BP	63
Cattle Egret (<i>Bubulcus ibis</i>)				
General: Cattle Egrets nest mainly in freshwater areas. No record of nesting before 1956 in Louisiana.				
1956- 1966	1	Big Burn & Little Burn	100-500BP	42
1957	1	Lacassine Bayou	PN, 40B	52 (11:410)
1958	4	Delta NWR	permanent resident	
5/1958	1	Willow I.	100BP	62
	1	Avery I., Bird City	4BP	62
5/1959	3	Lake Boeuf	25BP	62
	1	Avery I., Bird City	12BP	62
	1	Lacassine Intracoastal	90BP	62
5/1962	3	Lake Boeuf	20BP	75
1965	4	Delta NWR	x	25
5/1965	4	Taylor Pass Bird Island	29BP	62
	4	Venice Complex	50BP	62
	2	Lake Hatch	500BP	62
	2	Lake Boeuf	200BP	62
	3	Gheens	150BP	62
	1	Avery I., Bird City	25BP	62
	1	Lacassine Bayou	225BP	62
	1	Lacassine Burn	3,000BP	62
	1	Lacassine Intracoastal	x	62
	1	The Big Burn, Lacassine NWR	350BP	62
1966	4	Belta NWR	x	25
	7	Petit Bois I.	1N	25
1967- 1975	1	Big Burn, Lacassine	5,000-10,000BP	42
1971	1	Lacassine NWR	10,000BP	48
5/1972	3	Lake Boeuf	300BP	62
	3	Gheens	525BP	62
	4	Barataria Bay West	400BP	62
	1	Lacassine No. III	1,800BP	62
	1	Avery I.	40BP	62
	1	Sidney I.	2,000BP	62

Table B1. (continued)

Date	Region	Location	Abundance	Source
Cattle Egret (Cont'd)				
5/1973	2	N. Sweet Bay Lake	1,250BP	62
	3	Lake Boeuf	1,400BP	62
	3	Gheens	200BP	62
	4	Barataria Bay East	50BP	62
	3	Long Lake	100BP	62
1	Little Chenier	300BP	62	
1974	3	Salvador Wildl. Management Area # 1	3,000BP	4
	7	Cat I., Alabama	400BP	69
5/1974	1	Avery I., Saline Pond	140BP	62
	1	Weeks I., Marsh 2	600BP	62
	1	Mermentau River Mouth	2,000BP	62
	1	Lacassine NWR	300BP	62
	1	Creole Oil Well Road	15BP	62
	3	Ponchatoula	540BP	62
	3	Lake des Allemands	1,000BP	62
	3	Lake Boeuf	360BP	62
	3	Gheens	50BP	62
	3	Lake Salvador	250BP	62
	3	S. of Long Lake	1,360BP	62
	1	Jeanerette	300BP	62
	2	Franklin	100BP	62
	2	Sweet Bay Lake	50BP	62
	2	Palmetto Bayou	250BP	62
	2	Lake de Cade	240BP	62
	4	Barataria Bay West	10BP	62
	5	Black Bay	125BP	62
	1	Lacassine Bayou	750BP	62
	1	Lake Calcasieu	200BP	62
	1	Sidney I.	1,200BP	62
	2	Lake Hatch	150BP	63
	1	Avery I., Saline Pond	150BP	62
	1	Weeks Island, Marsh 1	PN	62
	2	Sweet Bay Lake	100BP	62
	3	Lake Boeuf	1,000BP	62
	3	Long Lake	1,500BP	62
	2	Lake Hatch	200BP	62
	2	Lake de Cade	100BP	62
	1	E. Grand Lake	300BP	62
	1	Sidney I.	1,800BP	62
	1	Lake Misere	2,700BP	62
1	Town of Lacassine	700BP	62	
3	Manchac White Ibis	250BP	62	
3	Lake des Allemands	400BP	62	
3	N.W. of Houma	250BP	62	

Louisiana Heron (*Hydranassa tricolor*)

General: The Louisiana Heron is an abundant estuarine nester on the Gulf Coast.

1907	2	E. Timbalier I.	1,750B	17
1908	6	Battledore I.	abundant	38
1910	6	Battledore I.	50BP	13
	6	Hog I.	200BP	13
1913	7	Petit Bois I.	100BP	20

Table B1. (continued)

Date	Region	Location	Abundance	Source
1920	1	Louisiana Heron (Cont'd) Black Bayou, Cameron Parish	abundant	26
1928	7	Petit Bois I., Mississippi	50BP	35
	7	Coffee I., Alabama	PN	35
	7	Dauphin I., Alabama	PN	35
5/1932	1	Cameron Parish	PN	32
6/1933	1	Black Bayou, Cameron Parish	PN	54
	7	Biloxi, Mississippi	PN	54
	1	Avery I.	PN	54
	4	Ronquille Bay	PN	54
	4	Bird I., Plaquemines Parish	PN	54
	4	Grand Isle, Jefferson Parish	PN	54
5/1938	6	North I.	PN	27
1939- 1975	1	Willow I., Big & Little Burn, Lacassine	500-1,000BP	42
1940- 1974	1	Bird I., Shell Hill, Chinaberry I.	100-300BP	60
6/1958	7	Cat I., Mobile Bay	80B	36
5/1958	1	Willow Island	400BP	62
	1	W. Shore, Lake No. 1 Sabine NWR	200BP	62
	1	Rainey	10BP	62
	1	Avery I., Bird City	150BP	62
	1	Avery I., Saline Pond	75BP	62
	1	McIlhenny Duck Pond	25BP	62
	3	Huey Long Bridge	150BP	62
5/1959	6	North I.	30BP	62
	4	Taylor's Pass Bird I.	250BP	62
	4	Cyprion Bay	25BP	62
	2	Lake Hatch	200BP	62
	3	Huey Long Bridge	75BP	62
	3	Ponchatoula No. 2	100BP	62
	3	Lake Boeuf	250BP	62
	1	Deadman Island	200BP	62
	1	Weeks I.	220BP	62
	1	Avery I., Bird City	45BP	62
	1	Avery I., Saline Pond	25BP	62
	1	Lacassine Bayou	350BP	62
	1	Lacassine Intracoastal	510BP	62
	1	The Burn, Lacassine NWR	300BP	62
	1	W. Shore Lake No. 1, Sabine NWR	25BP	62
	1	Sabine NWR, Marsh	500BP	62
6/1962	7	Petit Bois I.	PN	27
1965	4	Delta NWR	x	25
5/1965	6	North I.	60BP	62
	4	Taylor's Pass Bird Islands	1,800BP	62
	4	Venice Complex	385BP	62
	4	Cyprion Bay	x	62
	4	Barataria Bay East	70BP	62
	4	Barataria Bay West	3,285BP	62
	2	Lake Hatch	200BP	62

Table B1.(continued)

Date	Region	Location	Abundance	Source
		Louisiana Heron (Cont'd)		
	3	Huey Long Bridge	x	62
	3	Ponchatoula	x	62
	3	Gheens	150BP	62
	1	Deadman Island	250BP	62
	1	Weeks I.	x	62
	1	Avery I., Bird City	x	62
	1	Avery I., Saline Pond	x	62
	1	Lacassine Bayou	400BP	62
	1	Lacassine Burn	750BP	62
	1	Lacassine Intracoastal	x	62
	1	Big Burn, Lacassine	200BP	62
	1	Rabbit I.	300BP	62
	1	Sabine Pool 1B	200BP	62
	1	W. Shore Lake No. 1, Sabine NWR	x	62
	1	Sabine NWR Marsh	250BP	62
1966	6	Breton Islands NWR	10N	25
1966- 1974	4	Delta NWR	x	25
1967	6	Breton Islands NWR	13N	25
1968	6	Breton Islands NWR	8N	25
1969	6	Curlew I.	30BP	63
	6	Breton Islands NWR	30B	25
1970	2	W. Islands of Isles Dernieres	1,500N	52 (24:692)
1971	4	Crane I.	4,000BP	71
5/1972	4	Barataria Bay East	1,900BP	62
	3	Lake Boeuf	150BP	62
	4	Barataria Bay West	1,715BP	62
	1	Little Chenier	20BP	62
	1	Rabbit I., Cameron Parish	6,000BP	62
	1	Lacassine No. II	250BP	62
	1	Lacassine No. III	5,400BP	62
	1	Avery I.	12BP	62
	1	Grand Lake	12BP	62
	1	Sidney I.	2,000BP	62
1973	2	Raccoon Point, Isles Dernieres	3,000BP	4
1973- 1974	6	North I. and Chandeleurs	4BP	63
5/1973	2	N. Sweet Bay Lake	500BP	62
	3	Lake Boeuf	700BP	62
	3	S.W. of Lake Salvador	160BP	62
	4	Barataria Bay West	2,760BP	62
	4	Barataria Bay East	4,400BP	62
	4	Venice Complex	150BP	62
	4	Grand Bay	3,575BP	62
	6	North I.	15BP	62
	3	S.W. of Ponchatoula	1,000BP	62
	1	Rainey	30BP	62
	1	Rabbit I.	8,500BP	62
	1	N.E. of Sabine NWR	120BP	62

Table B1. (continued)

Date	Region	Location	Abundance	Source
Louisiana Heron (Cont'd)				
1974	6	Breton Islands NWR	PN	25
	1	Lacassine NWR	1,500BP	4
	2	Point au Fer	1,500BP	4
	7	Cat I., Alabama	100BP	69
5/1974	1	Avery I., Saline Pond	2BP	62
	1	Weeks I., Marsh 2	150BP	62
	1	E. of Grand Lake	450BP	62
	1	Mermentau River Mouth	25BP	62
	1	Lacassine NWR	1,510BP	62
	1	Lake Misere	50BP	62
	3	Ponchatoula	620BP	62
	3	Lake des Allemands	300BP	62
	3	Lake Boeuf	300BP	62
	3	Gheens	25BP	62
	3	Lake Salvador	50BP	62
	1	Jeanerette	50BP	62
	2	Franklin	25BP	62
	2	Sweet Bay Lake	25BP	62
	2	Palmetto Bayou, Terrebonne Parish	60BP	62
	2	Lake de Cade	100BP	62
	2	Timbalier Bay	1,250BP	62
	4	Barataria Bay West	445BP	62
	4	Queen Bess I.	175BP	62
	4	Barataria Bay E.	570BP	62
	4	Venice Complex	25BP	62
5/1974	5	Telegraph Point	12BP	62
	5	Black Bay	315BP	62
	1	Sidney I.	300BP	62
	1	Rabbit I.	4,200BP	62
1975	2	N. of Bayou Penchant	1,000BP	5
	4	2 mi. S. of Little Lake	1,000BP	5
5/1975	1	Weeks I., Marsh 1	100BP	62
	2	North Bend	PN	62
	2	Sweet Bay Lake	100BP	62
	2	Palmetto Bayou, Terrebonne	50BP	62
	2	Amelia	PN	62
	3	Lake Boeuf	100BP	62
	3	Lake Salvador	200BP	62
	3	Long Lake	100BP	62
	2	Lake Hatch	100BP	62
	2	E. Timbalier Bay	2,145BP	62
	4	Barataria Bay West	900BP	62
	4	Queen Bess I.	300BP	62
	4	Barataria Bay East	1,200BP	62
	1	S.W. White Lake	PN	62
	1	E. Grand Lake	50BP	62
	1	Rabbit I.	3,500BP	62
	1	Sidney I.	200BP	62
	1	Lake Misere	600BP	62
	3	Manchac White Ibis	PN	62
	3	Lake des Allemands	PN	62
	3	N.W. of Houma	25BP	62

Little Blue Heron (*Florida caerulea*)

General: The Little Blue Heron is much more abundant in freshwater swamps north of the coastal marshes.

1837		S. Louisiana	PN	3
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Table B1. (continued)

Date	Region	Location	Abundance	Source
6/1933	1	Little Blue Heron (Cont'd) Avery I.	PN	54
1939	1	Willow I.	75BP	42
1940	1	S. Louisiana	PN	22
to 1944	7	Mississippi Coast	x	20
1950	1	Shell Hill	PN	60
1954- 1972	1	Big Burn, Lacassine	25-500BP	42
1958	1	Sabine NWR	100BP	60
5/1958	1	Avery I., Bird City	30BP	62
	1	Avery I., Saline Pond	45BP	62
5/1959	2	Lake Hatch	100BP	62
	3	Huey Long Bridge	75BP	62
	3	Ponchatoula No. 2	100BP	62
	3	Lake Boeuf	1,000BP	62
	1	Weeks I.	235BP	62
	1	Avery I., Bird City	25BP	62
	1	Avery I., Saline Pond	15BP	62
	1	Lacassine Bayou	250BP	62
	1	Lacassine Intracoastal	90BP	62
	1	The Burn, Cameron Parish	150BP	62
	1	Sabine NWR Marsh	250BP	62
1961	4	Delta NWR	PN	25
1965	4	Delta NWR	x	25
5/1965	4	Venice Complex	345BP	62
	2	Lake Hatch	300BP	62
	3	Huey Long Bridge	x	62
	3	Ponchatoula	x	62
	3	Lake Boeuf	100BP	62
	3	Gheens	150BP	62
	1	Weeks I.	x	62
	1	Avery I., Bird City	x	62
	1	Avery I., Saline Pond	x	62
	1	Lacassine Bayou	600BP	62
	1	The Burn, Lacassine NWR	500BP	62
	1	Lacassine Intracoastal	x	62
	1	Big Burn	x	62
	1	Sabine NWR Marsh	25BP	62
1966	6	Breton Islands NWR	1N	25
1966- 1973	4	Delta NWR	x	25
1967	1	Sabine NWR	50BP	60
1969	6	North I.	10BP	63
1971	1	Pool 1B, Sabine NWR	500BP	60
	4	Crane I.	300BP	71
5/1972	3	Lake Boeuf	1,500BP	62

Table B1. (continued)

Date	Region	Location	Abundance	Source
Little Blue Heron (Cont'd)				
5/1972 (Cont'd)	3	Gheens	750BP	62
	1	Little Chenier	40BP	62
	1	Lacassine NWR-No. III	3,600BP	62
	1	Lacassine NWR-No. I	60BP	62
	1	Sidney I.	500BP	62
1973	6	North I.	PN	63
	6	New Harbor I.	PN	63
5/1973	2	N. Sweet Bay Lake	750BP	62
	3	Lake Boeuf	2,800BP	62
	3	Gheens	500BP	62
	3	S.W. of Lake Salvador	800BP	62
	4	Barataria Bay West	100BP	62
	4	Barataria Bay East	50BP	62
	3	Long Lake	150BP	62
	4	Venice Complex	300BP	62
	6	North I.	2BP	62
	3	S.W. of Ponchatoula	3,000BP	62
	1	Rainey	15BP	62
	1	Lacassine NWR	15BP	62
	1	Little Chenier	150BP	62
1974	3	Salvador Wildl. Manag. Area #1	2,000BP	4
	6	North I., New Harbor I., Chandeleurs	20BP	4
5/19/74	1	Weeks I., Marsh 2	250BP	62
	1	E. of Grand Lake	150BP	62
	1	Mermentau River mouth	100	62
5/1974	1	Lacassine NWR	250BP	62
	1	Little Chenier	100BP	62
	3	Ponchatoula	1,280BP	62
	3	Lake des Allemands	1,200BP	62
	3	Lake Boeuf	700BP	62
	3	Gheens	200BP	62
	3	Lake Salvador	350BP	62
	3	S. of Long Lake	800BP	62
	1	Jeanerette	450BP	62
	2	Franklin	250BP	62
	2	Sweet Bay Lake	200BP	62
	2	Palmetto Bayou	200BP	62
	2	Lake de Cade	200BP	62
	4	Barataria Bay West	40BP	62
	4	Queen Bess Island	5BP	62
	4	Barataria Bay East	240BP	62
	4	Venice Complex	50BP	62
	5	Black Bay	12BP	62
	1	Lacassine Bayou	25BP	62
	2	Lake Hatch	200BP	62
1975	2	N. of Bayou Penchant	1,000BP	5
	2	S. of Lake Penchant	PN	5
	4	2 mi. S. of Little Lake	1,000BP	5
	2	Island in Pelican Pass	50BP	5
	2	Shell I. Bay	200BP	5
5/1975	1	Weeks I., Marsh 1	300BP	62
	1	Avery I., Saline Pond	PN	62
	2	Franklin	300BP	62
	2	North Bend	500BP	62
	2	Sweet Bay Lake	300BP	62

Table B1. (continued)

Date	Region	Location	Abundance	Source
Little Blue Heron (Cont'd)				
5/1975	2	Palmetto Bayou	700BP	62
	3	Lake Boeuf	600BP	62
	3	Lake Salvador	400BP	62
	3	Long Lake	500BP	62
	2	Lake Hatch	600BP	62
	2	Lake de Cade	300BP	62
	2	E. Timbalier Bay	PN	62
	4	Barataria Bay West	25BP	62
	4	Barataria Bay East	50BP	62
	1	S.W. White Lake	50BP	62
	1	E. Grand Lake	75BP	62
	1	Creole Oil Well Road	150BP	62
	1	Lake Misere	175BP	62
	1	Town of Lacassine	50BP	62
	3	Manchac White Ibis	3,000BP	62
	3	Lake des Allemands	1,700BP	62
	3	N.W. of Houma	100BP	62
Black-Crowned Night Heron (<i>Nycticorax nycticorax</i>)				
General: Black-Crowned Night Herons have been common, but never abundant, coastal nesters.				
1837	-	Louisiana	PN	3
1908	2	E. Timbalier I.	PN	41
	5	Morgan Harbor I. (near Breton I.)	200BP	40
	5	Dutcher's I.	20BP	40
	3	Lake Maurepas	PN	17
6/1908	6	Batteldore I.	PN	38
1911	7	Petit Bois I.	PN	35
2/1920	1	Bird I., Cameron Parish	PN	26
1939	1	Willow I.	3BP	42
1944	1	Shell Hill	5BP	60
1953-1966	1	Big Burn, Lacassine NWR	25-150BP	42
1953-1967	1	Shell Hill & Pool 3, Sabine NWR	40BP	60
1958	7	Dauphin I., Alabama	PN	36
5/1958	1	Willow I., Lacassine NWR	PN	62
	1	W. Shore, Lake No. 1, Sabine NWR	PN	62
5/1959	4	Taylor Pass Bird Island	50BP	62
	1	Big Burn, Lacassine NWR	75BP	62
	1	W. Shore, Lake No. 1, Sabine NWR	PN	62
1961	4	Delta NWR	PN	25
1965	4	Delta NWR	x	25
5/1965	6	North & New Harbor I.	52BP	62
	4	Taylor Pass Bird I	x	62
	4	Barataria Bay	55BP	62

Table B1. (continued)

Date	Region	Location	Abundance	Source
Black-Crowned Night Heron (Cont'd)				
5/1965	1	Little Burn, Lacassine NWR	150BP	62
	1	Big Burn, Lacassine NWR	40BP	62
	1	Sabine NWR Marsh	75BP	62
1966	4	Delta NWR	x	25
	6	Breton Islands NWR	5N	25
1970	2	W. Islands of Isles Dernieres	600N	52 (24:692)
1971	4	Crane I.	100	71
1972	1	Rabbit I., Lake Calcasieu	PN	60
5/1972	3	Gheens	20BP	62
	4	Barataria Bay West	25BP	62
	1	Little Chenier	10BP	62
	1	Lacassine NWR - No. II	250BP	62
	1	Lacassine NWR - No. II	150BP	62
	1	Grand Lake	25BP	62
	1	Sidney I.	100BP	62
1973	2	Raccoon Point, Isles Dernieres	600N	4
5/1973	3	S.W. of Lake Salvador	40BP	62
	4	Barataria Bay West	17B	62
	4	Barataria Bay East	20BP	62
	3	Long Lake	25BP	62
	4	Grand Bay	200BP	62
	6	North I.	1BP	62
	1	Rainey	6RP	62
	1	Lacassine NWR	16BP	62
	1	Little Chenier	50BP	62
	1	Rabbit I., Lake calcasieu	30BP	62
1974	1	Rabbit I.	PN	60
5/1974	1	E. of Grand Lake	12BP	62
	1	Lacassine NWR	25BP	62
	1	Little Chenier	5BP	62
	3	Lake des Allemands	12BP	62
	2	Palmetto Bayou, Terrebonne Parish	5BP	62
	2	Lake de Cade	10BP	62
	2	Timbalier Bay	8BP	62
	4	Barataria Bay West	1BP	62
	4	Queen Bess I.	5BP	62
	4	Barataria Bay East	19BP	62
	5	Black Bay	2BP	62
	1	Sidney I.	10BP	62
	1	Rabbit I.	12BP	62
	1	Johnson's Bayou	10BP	62
1975	4	Delta NWR	PN	25
5/1975	3	Lake Salvador	25BP	62
	2	Lake de Cade	25BP	62
	4	Barataria Bay West	25BP	62
	4	Barataria Bay East	25BP	62
	1	E. Grand Lake	30BP	62
	1	Creole Oil Well Rd.	10BP	62
	1	Rabbit I.	250BP	62
	1	Sidney I.	50BP	62
	1	Lake Misere	90BP	62
	3	Lake des Allemands	100BP	62

Table B1.(continued)

Date	Region	Location	Abundance	Source
Yellow-Crowned Night Heron (<i>Nyctannassa violacea</i>)				
General: Yellow-Crowned Night Herons have been infrequent nesters south of freshwater marshes.				
1913	7	Bayou la Batre, Alabama	PN	35
	7	Dauphin I., Alabama	PN	35
1920	1	Bird I., Black Bayou, Cameron	PN	26
1933	1	Black Bayou, Cameron	PN	54
1939	1	Willow I., Lacassine NWR	12BP	42
to 1944	7	Mississippi Coast	x	20
1950- 1966	1	Shell Hill	30-40BP	60
1953- 1958	1	Lacassine NWR	PN	42
5/1958	1	Willow I., Lacassine NWR	PN	62
5/1959	1	Lacassine Intracoastal	65BP	62
1965	4	Delta NWR	x	25
5/1965	4	Venice Complex	138BP	62
	4	Pass a Loutre Hdqtrs.	10BP	62
	1	Lacassine Intracoastal	x	62
1965- 1974	3	New Orleans: 30°00'N x 89°55'W	150-200RP	4
1966	4	Delta NWR	x	25
5/1974	1	Weeks I., Marsh 2	12BP	62
	2	North Bend	12BP	62
1975	4	1/2 mi N. of Main Pass	50BP	5
Ibis, White-Faced and Glossy (<i>Plegadis chihi</i> and <i>P. falcinellus</i>)				
General: All dark ibises are considered <i>P. chihi</i> (White-Faced Ibis) for this report.				
1913	1	Near Lake Arthur	PN	24
1928- 1960	1	Big Burn, Lacassine NWR	PN	47
1932	1	Cameron Marshes	hundreds	32
1939	1	Willow I.	48P	42
1943	1	Lacassine NWR	400B	23
to 1944	7	Mississippi Coast	x	20
1950	1	Shell Hill, Sabine NWR	PN	60
1953- 1967	1	Little & Big Burn, Lacassine NWR	50-600BP	42
1957	1	Lacassine NWR	2,000B	52 (11:410)

Table B1. (continued)

Date	Region	Location	Abundance	Source
Ibis (Cont'd)				
5/1959	4	Taylor Pass Bird Island	50BP	62
	1	Lacassine Intracoastal	85BP	62
	1	Sabine NWR-Marsh	400BP	62
1959	4	Taylor Pass, Plaquemines	50BP	47
1959- 1965	1	Shell Hill & Pool 1B, Sabine NWR	1,400-2,400BP	60
1965	4	Delta NWR	x	25
5/1965	4	Taylor Pass Bird I.	600BP	62
	4	Barataria Bay West	455BP	62
	1	Lacassine Bayou	200BP	62
	1	Little Burn, Lacassine NWR	500BP	62
	1	Lacassine Intracoastal	x	62
	1	Big Burn, Lacassine NWR	500BP	62
	1	Sabine NWR, Pool 1B	200BP	62
	1	Sabine NWR Marsh	750BP	62
1966	1	Shell Hill	PN	60
1966- 1973	4	Delta NWR	x	25
1971	1	Big Burn, Lacassine NWR	PN	55
	5	Black Bay, Plaquemines Parish	PN	55
	4	Barataria Bay	PN	55
	4	Queen Bess I.	PN	55
	4	Crane I.	400PN	71
5/1972	4	Barataria Bay East	600BP	62
	4	Barataria Bay West	1,060BP	62
	1	Rabbit I., Lake Calcasieu	3,500BP	62
	1	Sidney I.	300BP	62
5/1973	2	N. Sweet Bay Lake	500BP	62
	4	Barataria Bay West	850BP	62
	4	Barataria Bay East	415BP	62
	4	Grand Bay, Plaquemines Parish	575BP	62
1974	5	N.W. of Mozambique Point	PN	4
	4	Long Island Bayou, Delta NWR	PN	25
	7	Cat I., Alabama	2BP	69
5/1974	1	Sabine NWR, Pool 1B	300BP	60
	2	Sweet Bay Lake	150BP	62
	2	Lake de Cade	200BP	62
	2	Timbalier Bay	55BP	62
	4	Barataria Bay West	50BP	62
	4	Queen Bess I.	140BP	62
	4	Barataria Bay East	200BP	62
	5	Black Bay	160BP	62
	1	Sidney I.	200BP	62
	1	Rabbit I.	125BP	62
	1	Johnson's Bayou	2,500BP	62
	2	Lake Hatch	400BP	62
1975	1	Lacassine NWR Pool	60BP	5
	1	Sabine NWR, Pool 1B	450BP	5
	3	Gheens	500BP	5

Table B1.(continued)

Date	Region	Location	Abundance	Source
		Ibis (Cont'd)		
	4	1/4 mi. N. of Quarantine Station, Delta NWR	PN	5
	4	Long Island Bayou	5,000BP	5
5/1975	2	Palmetto Bayou, Terrebonne Parish	150BP	62
	3	Lake Salvador	200BP	62
	2	Lake Hatch	100BP	62
	2	Lake de Cade	400BP	62
	2	E. Timbalier Bay	150BP	62
	4	Barataria Bay West	25BP	62
	4	Queen Bess I.	300BP	62
	4	Barataria Bay East	500BP	62
	1	Rabbit I.	PN	62
	1	Johnson's	575BP	62
	1	Sidney I.	100BP	62
White Ibis (<i>Eudocimus albus</i>)				
General: Although large colonies of white ibis occur in freshwater areas, smaller colonies are common within the estuaries.				
1931	-	S. Louisiana	x	12
1941	3	Near Thibodaux	PN	47
to 1944	7	Mississippi Coast	x	20
1946- 1972	1	Big Burn, Lacassine NWR	gradual increase	42
1949	3	S.W. of Ponchatoula	40,000B	52 (3:241)
1950	1	Shell Hill	PN	60
5/1958	3	Ponchatoula No. 2	4,000-5,000BP	62
5/1959	4	Taylor Pass Bird Island	250BP	62
	3	Ponchatoula No. 2	50BP	62
	1	Big Burn, Lacassine NWR	25BP	62
	1	Sabine NWR-Marsh	5,000BP	62
1959- 1966	1	Shell Hill	1,000-1,800BP	62
1960	3	Pass Manchac	thousands	47
1960's	1	Big Burn	1,000BP	42
1964	1	Sabine NWR-Pool 1B	PN	60
1965	4	Delta NWR	x	25
5/1965	4	Taylor's Pass Bird Island	300BP	62
	3	Ponchatoula No. 2	x	62
	3	Manchac White Ibis	11,000+BP	62
	1	Little Burn, Lacassine NWR	1,000BP	62
	1	Big Burn	5,000BP	62
	1	Sabine NWR, Pool 1B	100BP	62
	1	Sabine NWR, Marsh	400BP	62
1966- 1973	4	Delta NWR	x	25

Table B1. (continued)

Date	Region	Location	Abundance	Source
White Ibis (Cont'd)				
1971	4	Crane I.	2,000BP	71
1972	1	Willow I., Lacassine NWR	2,500BP	42
5/1972	4	Barataria Bay East	330BP	62
	4	Barataria Bay West	850BP	62
	3	Manchac White Ibis	25,000BP	62
	1	Sidney I.	100BP	62
1973	3	Lake Boeuf	500BP	4
5/1973	2	N. Sweet Bay Lake	250BP	62
	4	Barataria Bay West	750BP	62
	3	Long Lake	500BP	62
	4	Grand Bay	400BP	62
	3	Manchac White Ibis	20,000BP	62
	1	Rainey	15BP	62
1974	4	Long I. Bayou, Delta NWR	PN	25
	5	N.W. of Mozambique Point	PN	4
	5	Lake Machias & Lake Fortuna Islands	50BP	4
5/1974	3	Manchac White Ibis	20,000+BP	62
	2	Sweet Bay Lake	25BP	62
	3	S. of Long Lake	100BP	62
	2	Palmetto Bayou, Terrebonne Parish	5,000BP	62
	2	Timbalier Bay	15BP	62
	4	Barataria Bay West	20BP	62
	4	Barataria Bay East	1,100BP	62
	5	Black Bay, Plaquemines Parish	400BP	62
	1	Rabbit I.	125BP	62
	1	Johnson's Bayou	1,200BP	62
	2	Lake Hatch	75BP	62
1975	3	Gheens	1,500BP	5
	4	Queen Bess I.	200BP	5
	4	1/4 mi N. of Quarantine Sta., Delta NWR	500BP	5
	4	Long I. Bayou, Delta NWR	1,200BP	5
5/1975	2	Sweet Bay Lake	20BP	62
	2	Palmetto Bayou	1,000BP	62
	3	Lake Salvador	3,000BP	62
	3	Long Lake	800BP	62
	2	Lake Hatch	100BP	62
	2	E. Timbalier Bay	200BP	62
	4	Queen Bess I.	50BP	62
	4	E. Barataria Bay	700BP	62
	1	Rabbit I.	PN	62
	3	Manchac White Ibis	13,500BP	62

Roseate Spoonbill (*Ajaja ajaja*)

General: Prior to decimation by plume hunters during 1880's, Roseate spoonbills nested abundantly in marshes bordering White Lake, Lake Misere, Grand Lake and Black Bayou, Cameron (51,47). Small rookeries occur in Cameron and Vermilion Parishes.

1915	1	Black Bayou, Cameron Parish	<20B	2
1918	1	Black Bayou	300B	54
6/1968	1	Black Bayou	200B	8

Table B1. (continued)

Date	Region	Location	Abundance	Source
Roseate Spoonbill (Cont'd)				
1919	1	Black Bayou	45BP	54
1920	1	Bird I., Black Bayou	100BP	54
	1	Bird I., Cameron Farm	75BP	56
5/1920	1	Bird I., Black Bayou	104B	57
7/1920	1	Bird I., Black Bayou	82N	26
1929	1	Bird I., Black Bayou	PN	11
1930	1	Bird I., Cameron	PN	12
1934	1	Cameron (only current colony in Louisiana)	PN	33
1940- 1941	1	Bird I., & Black Bayou	25-50B	60
1943	1	Black Bayou (only current colony in Louisiana)	PN	51
1943- 1947	1	Shell Hill	10-80BP	60
1950	1	Shell Hill	10BP	60
1952	1	Shell Hill	4BP	60
1954	1	Shell Hill	10BP	60
1955- 1959	1	Willow I. & Little Burn, Lacassine NWR	17-65B	42
1956- 1963	1	Shell Hill & Pool 1B	20-150BP	60
5/1958	1	Willow I.	50BP	62
	1	Shell Hill	70BP	62
5/1959	1	Lacassine Bayou, Lacassine NWR	65BP	62
	1	Lacassine Intracoastal	1BP	62
	1	Sabine NWR-Marsh	50BP	62
1961	1	Little Burn	50BP	62
1962	1	Little Burn	50BP	62
1964- 1967	1	Short Cutoff I., Little Burn or Big Burn	50-200BP	42
1965	4	Delta NWR	x	25
5/1965	1	Lacassine Bayou	80BP	62
	1	Lacassine Intracoastal	x	62
	1	Sabine NWR-Marsh	x	62
1966	4	Delta NWR	x	25
1971	1	Frankfort levee & Sec. 26, Lacassine NWR	190BP	42

Table B1.(continued)

Date	Region	Location	Abundance	Source
Roseate Spoonbill (Cont'd)				
5/1972	1	Little Chenier	2BP	62
	1	Lacassine NWR No. II	500BP	62
	1	Lacassine NWR No. III	100BP	62
5/1972	1	Deadman I.	16BP	62
	1	Sidney I.	1,200BP	62
1972	1	Frankfort levee & Sec. 26	65BP	42
	1	Rabbit I.	PN	60
5/1973	1	Rainey, Vermilion Parish	12BP	62
	1	Little Chenier	200BP	62
	1	Rabbit I.	20BP	62
1974	1	N.E. corner of Lacassine NWR	N	42
	1	Lake Charles	15BP	4
5/1974	1	Lacassine NWR	300BP	62
	1	Creole Oil Well Road	25BP	62
	1	Sidney I.	125BP	62
5/1975	1	Deadman I.	10BP	62
	1	S.W. White Lake	50BP	62
	1	Little Chenier	65BP	62
	1	Sidney I.	350BP	62
	1	Lacassine - Lake Misere	50BP	62
6/1975	1	Rabbit I.	10BP	62
American Oystercatcher (<i>Haematopus palliatus</i>)				
General: The American oystercatcher is a rare breeder traditionally nesting on Isle au Pitre, North I. and the Chandeleurs (47,53).				
4/1837	2	Isles Dernieres	14-15B	3
1898	7	Petit Bois I.	PN	35
1900	4	Grand Isle	P	17
1910	6	Freemason Key	1BP	13
5/1913	6	Freemason I.	PN	54
6/1918	5	Isle au Pitre	PN	12
1930	6	North I.	PN	12
1931	-	Louisiana Coast	rare nester	2
6/1933	5	Isle au Pitre	PN	54
5/1938	6	Freemason Keys	1B	27
6/1941	5	Isle au Pitre	2B	47
	6	North I.	4B	47
to 1944	7	Mississippi Coast	x	20
1962	7	Bayou la Batre, Alabama	P	36
1965- 1974	4	Delta NWR	x	25

Table B1.(continued)

Date	Region	Location	Abundance	Source
American Oystercatcher (Cont'd)				
1968	5	Isle au Pitre	P	63
1971	6	North I. and New Harbor I.	PN-21B	63
1973	6	Chandeleurs, North & New Harbor I.	17B	52 (27:879)
8/1973	6	North I. & Monkey I., Chandeleurs	3B	63
1974	6	North I.	7B	63
Laughing Gull (<i>Larus atricilla</i>)				
General: Laughing gulls are abundant coastal nesters. Largest colonies have traditionally been located on North Island, Mississippi River Mud Lumps and the Chandeleurs (47,31).				
4/1837	4	S.W. Pass, Mississippi	abundant	3
	4	Barataria Bay	abundant	3
1907	2	E. Timbalier I.	4,500BP	39
	4	N. Pass Mud Lumps	25BP	39
	4	Pass a Loutre Mud Lumps	25BP	39
	4	N.E. Pass Mud Lumps	500BP	39
1908	6	Breton I.	PN	45
	6	Battledore I.	PN	45
6/1908		Battledore I.	PN-thousands	38
7/1908	6	Battledore I., Plaquemines Parish	2,000BP	40
	5	Dutchers I., St. Bernard Parish	1,500BP	40
	5	Little Deadman I., St. Bernard Par.	500BP	40
	5	Eloi Bay, St. Bernard Parish	10,000BP	40
	5	Mitchell Key, St. Bernard Parish	200BP	40
	5	San Holmes., St. Bernard Parish	2,000BP	40
	5	Brush I., St. Bernard Parish	400BP	40
	5	Sundown I., St. Bernard Parish	1,000BP	40
	5	Morgan Harbor I., St. Bernard Par.	29,000BP	40
8/1908	2	E. Timbalier I.	PN	41
6/1910	6	Battledore I.	5,000BP	14
7/1910	6	Grand Gosier, Plaquemines Parish	10BP	13
	6	Hog I., Plaquemines Parish	1,000BP	13
	5	Dutchers I.	500BP	13
1919	6	Battledore I.	PN-several thousand birds	10
6/1931	6	Curlew I., Plaquemines	PN	34
6/1933	5	Isle au Pitre	PN-1,000B	54
	4	Pass a Loutre Mud Lumps	PN	54
	2	Isles Dernieres	PN	54
5/1938	6	Freemason I.	PN	27
	6	North I.	PN	27
to 1944	7	Mississippi Coast	x	20

Table B1. (continued)

Date	Region	Location	Abundance	Source
Laughing Gulls (Cont'd)				
1949	5	Isle au Pitre	PN	52 (3:242)
1958	1	Sabine NWR (near refuge)	PN	60
5/1962	7	Le Petit Pass I.	PN	27
6/1962	7	Petit Bois I.	PN	27
	7	Petit Bois I.	3,000N	52 (16:481)
	6	Stake I.	1,000N	75
1965+				
1966	4	Delta NWR	x	25
1966	6	Breton Islands NWR	3,500N	25
	7	Petit Bois I.	500N	25
1967	6	Stake I.	500BP	52 (21:580)
	6	Breton Islands NWR	1,500N	25
	7	Petit Bois I.	350N	25
1968	6	Breton Islands NWR	2,000N	25
	7	Horn I. (west end)	75N	25
	7	Petit Bois I.	75N	25
6/1968	6	Curlew I., Stake I., & North I	1,000N	63
1969	6	Breton Islands NWR	950N	25
6/1969	6	North I.	1,200	63
	6	Stake I.	950N	63
	6	New Harbor I.	100N	63
1970	6	North I.	800N	25
5/1970	2	Isles Dernieres	600BP	63
	2	Coupe Colin I., Isles Dernieres	1,000N	63
1971	6	Breton I., NWR	1,850N	25
6/1971	2	Raccoon Point, Isles Dernieres	200BP	63
	6	North I., Chateleaux & New Harbor I.	2,000BP	63
	6	North I., Chateleaux & New Harbor I.	1,800BP	52 (27:879)
1972	6	S. tip of Chateleaux	800N	25
5/1972	6	North I. & New Harbor I.	900N	63
	6	Monkey I., Chateleaux	276N	63
	1	Sidney I., Sabine Lake	200BP	62
5/1973	6	North I. & New Harbor I.	600N	63
	6	North I.	10,820BP	62
	4	Grand Bay, Plaquemines	400BP	62
	1	Rabbit I., Calcasieu Lake	30BP	62
1974	6	Breton I. NWR	PN	25
7/1974	6	North I. & Harbor I.	3,000BP	63
	6	Gate I.	10BP	4

Table B1. (continued)

Date	Region	Location	Abundance	Source
Laughing Gulls (Cont'd)				
6/1975	6	North I. & New Harbor I.	3,000N	63
	6	Curlew I.	200N	63
	5	Chicot I.	PN	74
Gull-Billed Tern (<i>Gelochelidon nilotica</i>)				
General: The Gull-billed tern has nested in very small numbers among other nesting seabirds on the north Gulf Coast.				
1837	4	Mississippi Delta	rare nester	3
1906	1	W. Louisiana Coast	small groups	17
1913	7	Petit Bois I.	PN	20
1928	7	Petit Bois I.	15-20BP	35
6/1941	5	Isle au Pitre	1N	47
6/1956	7	Cedar Point, Alabama	3N	36
1958	1	Near Sabine NWR	PN	60
1960	3	Near Pascagoula	3N	52 (14:455)
1961	6	Curlew I.	5N	31
1962	5	Grassy I., St. Bernard Parish	11N	52 (15:485)
	3	1 mi. W. of Pascagoula	11N	52 (16:485)
	6	Chandeleur Islands	3N	52 (16:485)
6/1962	7	Pascagoula, MS	11N	27
	7	Grand Island, Mississippi Sound	PN	27
1965- 1974	4	Delta NWR	x	25
1970	6	Chandeleur Islands	x	63
1971	6	Breton I. NWR	4N	25
6/1971	6	Chandeleur I.	5N	63
	6	Chandeleurs, North I., & New Harbor I.	9B, 4N	52 (27:879)
5/1972	6	Chandeleur I.	5N	31
5/1973	6	Monkey I., Chandeleurs	3B	31
	6	Chandeleurs, North I., & New Harbor I.	27B	52 (27:879)
Forster's Tern (<i>Sterna forsteri</i>)				
General: Forster's terns have been abundant coastal marsh nesters.				
1907	4	Barataria Bay	200BP	39
	4	N. Pass Mud Lumps	50BP	39

Table B1. (continued)

Date	Region	Location	Abundance	Source
		Forster's Tern		
	4	Pass a Loutre Mud Lumps	125BP	39
	4	N.E. Pass Mud Lumps	375BP	39
1908	6	Breton I.	PN	45
	6	Battledore I.	PN	45
6/1908	6	Battledore I.	PN-small groups (<24 /group)	38
	5	Sundown I.	125BP	40
	5	Morgan Harbor Islands	500BP	40
7/1910	6	Battledore I.	30BP	13
	6	Hod I.	1,000BP	13
1921	6	Breton Reservation (2 colonies)	PN	14
	6	Battledore I.	30BP	14
1931	6	North I.	PN	34
6/1931	6	North I.	PN	54
	6	Chandeleurs	PN	54
1933	5	Grassy I., Lake Borgne	273N	54
	4	Pass a Loutre Mud Lumps	103N	54
1941	1	Calcasieu Lake jetties and spoils	50BP	60
1944	5	Mouth of Pearl River	PN	20
1949	5	Isle au Pitre	PN	52 (3:242)
1958	1	Near Sabine NWR	PN	60
1959	1	Rockefeller - two levees 4 mi N. of coast	62N	21
1962	7	Mobile Co., Alabama	PN-few pairs	36
5/1962	5	Grassy I.	200N	75
	7	Le Petite Pass I.	210N	75
	7	Grand Island	180N	75
	5	Grassy I.	PN	27
5/1965	4	Barataria Bay West	800BP	62
1965- 1973	4	Delta NWR	x	25
1967	6	Breton I. NWR	150N	25
5/1972	4	Barataria Bay West	75BP	62
	1	Rabbit I., Calcasieu Lake	500BP	62
	1	Sidney I., Sabine Lake	200BP	62
5/1973	4	Barataria Bay East	375BP	62
	4	Barataria Bay West	570BP	62
	4	Grand Bay Islands	400BP	62
	1	Rabbit I.	225BP	62
5/1974	2	Belle Pass	125BP	62
	2	Timbalier Bay	150BP	62
	4	Barataria Bay East	350BP	62
	1	Rabbit I.	110BP	62

Table B1. (continued)

Date	Region	Location	Abundance	Source
Common Tern (<i>Sterna hirundo</i>)				
General: The common tern nests very rarely within the study area.				
1940	-	Gulf Coast	PN	22
to 1944	7	Mississippi Coast	x	20
1962	7	Spanish Point, 1 mi W. of Pascagoula	1BP	27
6/1971	6	Monkey I., Chandeleurs	1N	63
1973	6	Chandeleur Islands	3A	52 (27:879)
Sooty Tern (<i>Sterna fuscata</i>)				
General: A small band of sooty terns have been found each year on the periphery of the major tern rookery on the Chandeleurs.				
6/1933	6	Curlew I., Chandeleurs	1BP, 1N	29
1955	6	Breton I. & Chandeleurs	P	25
6/1964	6	Curlew I.	1N	52 (18:514)
1967	6	Stake I.	8N	52 (21:580)
6/1968	6	Curlew I.	3N	63
6/1969	6	Curlew I.	11N	31
5/1970	6	Chandeleurs	x	52
6/1971	6	Chandeleurs (5 groups)	19N	31
8/1973	6	Chandeleurs	2A, 1Y	52 (27:879)
	6	Chandeleurs, North I., New Harbor I.	15A, 1Y	52 (27:879)
6/1975	6	Curlew I.	6N	63
	6	Curlew I.	several pairs	53
Least Tern (<i>Sterna albifrons</i>)				
General: Least terns have been found breeding abundantly on coastal islands, river sandbars, and sandy areas near coastal highways (47). They frequently nest near <u>Rynchops niger</u> colonies.				
1837	-	Bayou Sara	PN	3
1908	2	E. Timbalier I.	PM	41
	6	Barrel Key, Breton I. Reservation	50BP	40
1918	1	Calcasieu Lake Island	100N	60
1919	6	Freemason Keys	PN-100B	10
1928	7	Dauphin I. & Petit Bois I.	300-400B	35

Table B1 (continued)

Date	Region	Location	Abundance	Source
		Least Tern (Cont'd)		
1930	-	Louisiana Coast	common nester	12
1937	7	Cat I., Mississippi	PN	20
1938	7	Cat I., Mississippi	PN	27
	-	Chandeleurs, Miss. Mud Lumps to Calcasieu Lake	PN	54
1942	7	Cat I., Mississippi	PN	20
1944	7	Mississippi Coast & Islands	PN	20
	7	Open beach before Gulfport Harbor	PN	20
7/1955	4	Grand Island	15N	70
1955- 1958	1	Sabine NWR (scattered groups)	PN	60
6/1956	7	Pascagoula	200B	67
5/1958	7	Cedar Point & Cochrane Causeway, Alabama	700B	36
	7	Dauphin I.	PN	36
5/1961	7	Pascagoula	44N	75
5/1962	7	1 mi. W. of Pascagoula	400BP	36
1965- 1973	4	Delta NWR	x	25
1966	6	Breton Islands NWR	300N	25
	7	Horn I.	35N	25
	7	Petit Bois I.	30N	25
1967	6	Breton Islands NWR	500N	25
	7	Horn I.	20N	25
	7	Petit Bois I.	50N	25
1968	6	Breton Islands NWR	500N	25
	7	Horn I.	50N	25
	7	Petit Bois I.	100N	25
1969	6	Breton I.	175N	25
	7	Petit Bois I.	90N	25
1970	6	North I.	160N	25
1971	6	Breton Islands NWR	200N	25
	7	Beach near Pass Christian, MS	PN	19
	7	E. of Gulfport, MS	PN	19
	6	Breton I.	PN	19
	6	Grand Gosier I.	PN	19
6/1971	6	Chandeleurs & Breton I.	220N	63
	2	Raccoon Point, Isles Dernieres	4BP	63
1972	6	N. and S. Breton I.	100N	25
5/1972	6	S. Breton I.	170N	63

Table B1. (continued)

Date	Region	Location	Abundance	Source
Least Tern (Cont'd)				
1973	6	Chandeleurs, North & New Harbor I.	600B	52 (27:879)
5/1973	1	Rainey	200BP	62
1974	6	Breton Islands NWR	PN	25
7/1974	6	Chandeleur Islands	PN	63
	6	S. Breton I.	PN-3,500B	52 (28:913)
1975	1	Rainey Refuge (Belle Isle Lake)	200BP	43
Sandwich Tern (<i>Thalasseus sandvicensis</i>)				
General: Sandwich terns usually nest with royal terns.				
1837	-	Texas to Florida	abundant nester	3
6/1908	6	Battledore I.	PN-thousands	38
7/1908	5	S.W. Harbor Key	2,500BP	40
	6	Battledore I.	500BP	40
6/1910	6	Grand Gosier	2,000B	14
7/1910	6	Grand Gosier	1,000BP	13
6/1931	6	North I.	PN	34
1933	6	Errol I.	1,980N	54
5/1938	6	Freemason I.	PN	27
1938	4	Pass a Loutre Mud Lumps	PN	54
	6	Chandeleur I.	PN	54
	5	Isle au Pitre	PN	54
	4	Grand Isle, Jefferson Parish	PN	54
	5	Raccoon Pass	PN	54
	5	Brush I.	PN	54
	6	Battledore I.	PN	54
1941	5	Isle au Pitre	24BP	47
	6	North I.	24BP	47
to 1944	7	Mississippi Coast	x	20
1961	6	Curlew I., Chandeleurs	3,000N	31
6/1962	7	Petit Bois I.	PN	27
	7	Petit Bois I.	2,500N	52 (16:485)
	6	Chandeleurs	8,700B	75
1965	6	Curlew I.	6,000N	31
1965- 1974	4	Delta NWR	x	25
1966	6	Breton Islands NWR	3,000N	25
	7	Horn I., Mississippi	10N	25

Table B1. (continued)

Date	Region	Location	Abundance	Source
Sandwich Tern (Cont'd)				
1967	6	Stake I.	6,000BP	52 (21:580)
	6	Breton Islands NWR	75N	25
6/1968	6	Curlew I.	27,900N	31
1968	6	Breton I. NWR	400N	25
	7	Petit Bois I.	100N	25
6/1969	6	Stake I., Chateleux	46,613N	31
1969	6	Breton Islands NWR	43,250N	25
5/1970	6	North I., Chateleur I., New Harbor I., & Breton I.	100N	63
7/1970	2	Isles Dernieres	200Y	49
1970	6	Breton Islands NWR	40,000N	25
6/1971	6	Monkey I., Chateleux	23,400N	31
1971	6	Breton Islands NWR	26,400N	25
5/1972	6	Chateleur I. & Monkey I.	12,020N	63
1972	6	Chateleux	11,500N	52 (26:867)
	6	S. tip of Chateleux	12,700N	25
5/1973	6	North I.	2,500N	63
	6	Curlew I.	PN	63
	6	Stake I.	PN	63
	6	Monkey I.	PN	63
7/1973	5	Raccoon I.	5,000 A&Y	49
7/1974	6	Monkey I.	5,821N	63
1974	6	Breton Islands NWR	PN	25
6/1975	6	Curlew I.	30,000-50,000Y +150N	63
Caspian Tern (<i>Hydroprogne caspia</i>)				
General: Caspian terns commonly nest on the periphery of <i>Thalasseus</i> ssp. terneries.				
Traditional breeding locations include: Breton I., Grassy I., Freemason I., Grand Gosier I., Pass a Loutre Mud Lumps (2), Isle au Pitre and North I. (47).				
1837	-	Louisiana Coast	(not separated from <i>T. maximus</i>)	3
6/1908	6	Battledore I. area	a few small colonies	38
7/1908	6	Battledore I.	20BP	40
	5	Little Deadman I., St. Bernard	25BP	40
6/1910	6	Grand Gosier	40BP	14
6/1917	4	Mississippi River Mud Lumps	35N	12
	6	Freemason Keys	50BP	12

Table B1. (continued)

Date	Region	Location	Abundance	Source
Casplan Tern (Cont'd)				
6/1918	2	Timbalier I.	PN	54
1919	4	Pass a Loutre Mud Lumps	36PN	54
	6	Errol I., Chandeleurs	PN	54
	6	Freemason I.	PN	54
	4	Pass a Loutre Mud Lumps	30BP	10
6/1931	6	North I.	PN	34
6/1933	6	Breton I.	1N	54
	6	Curlew I., Chandeleurs	25N	
5/1938	6	Freemason I.	PN	27
to 1944	7	Mississippi Coast	x	20
6/1962	6	Chandeleurs	few nests	75
1965- 1974	4	Delta NWR	x	25
1966	6	Breton Islands NWR	500N	25
	7	Horn I., MS	5N	25
1967	6	Stake I., Chandeleurs	50BP	52
				(21:580)
	6	Breton Islands NWR	500N	25
	7	Petit Bois I., MS	15N	25
6/1968	6	Curlew I., North I., & Stake I.	270N	31
1968	6	Breton Islands NWR	50N	25
	7	Petit Bois I.	15N	25
6/1969	6	Chandeleurs	x	31
5/1970	6	Chandeleurs	x	31
6/1971	6	Chandeleurs	x	31
5/1972	6	Chandeleurs	x	31
5/1973	6	Sand Islet S. of Monkey I., Chandeleurs	78N	63
7/1974	6	Monkey I.	30N	63
1974	6	Breton Islands NWR	PN	25
6/1975	6	Chandeleurs	x	63
Royal Tern (<i>Thalasseus maximus</i>)				
General: Royal terns nest with <i>T. sandvicensis</i> on coastal islands (48).				
1837	-	Louisiana Coast	(not separated from <i>H. caspia</i>)	3
before 1893	7	Pelican I., Mobile Bay	PN	36
6/1894	2	Raccoon Pass, Timbalier Bay	PN	54

Table B1. (continued)

Date	Region	Location	Abundance	Source
Royal Tern (Cont'd)				
1907	6	Breton I.	PN	18
	6	Battledore I.	PN	18
1908	6	Breton I.	PN	45
	6	Battledore I.	PN	45
6/1908	6	Battledore I.	PN-thousands	38
7/1908	5	S.W. Harbor Key	2,500BP	40
	6	Battledore I.	2,000BP	40
8/1908	2	E. Timbalier I.	PN	41
6/1910	6	Grand Gosier I., Chandeleurs	3,500N	13
before 1920	-	Louisiana Coast	numerous nester	10
1930	?	Tern I.	5,000BP	12
	1	Shell Keys NWR	PN-700B	54
1931	6	North I.	PN	34
before 1931	6	Errol I., Chandeleurs	PN	12
	6	Grand Gosier I.	PN	12
	6	Breton I.	PN	12
	6	Hog I., Plaquemines Parish	PN	12
	6	Battledore I.	PN	12
	5	Brush I.	PN	12
6/1933	6	North I.	600N	54
	6	Errol I.	8,400N	54
	4	Pass a Loutre Mud Lumps	550N	54
	6	Grand Gossier I.	x	54
1938	6	Freemason I.	PN	27
before 1940	-	Louisiana Coast	numerous nester	22
before 1944	7	Mississippi Coast	x	20
1950	5	Isle au Pitre	PN-150B	49
before 1954	-	Louisiana Coast	numerous nester	46
1958	7	Sand I., Alabama	4,000B	52 (12:419)
6/1958	7	Sand I.	50+N	36
1961	6	Curlew I., Chandeleurs	5,000N	31
1962	7	Petit Bois I.	300N	27
6/1962	6	Chandeleurs	7,000B	75
1964	6	Curlew I.	1,000N	63

Table B1. (continued)

Date	Region	Location	Abundance	Source
		Royal Tern (Cont'd)		
1965	4	Delta NWR	x	25
1966	4	Delta NWR	x	25
	6	Breton Islands NWR	500N	25
	7	Horn I., MS	10N	25
	7	Petit Bois I., MS	50N	25
1967	6	Stake I., Chandeleurs	1,000BP	52 (21:580)
1968	6	Breton Islands NWR	4,000N	25
	7	Petit Bois I.	150N	25
1968	6	Breton Islands NWR	400N	25
	7	Horn I.	12N	25
	7	Petit Bois I.	200N	25
6/1968	6	North I., chandeleur I., New Harbor I., & Breton I.	3,100N	31
1969	6	Breton Islands NWR	3,363N	25
6/1969	6	Stake I.	3,363N	31
5/1970	6	Chandeleurs	x	31
	2	Coupe Colin Pass I., Isles Dernieres	200N	63
1970	6	Breton Islands NWR	4,000N	25
1971	6	Breton Islands NWR	2,600N	25
6/1971	6	Monkey I., Chandeleurs	2,600N	31
	6	North I.	<1,000BP	31
	2	Raccoon Point to E. end of island, Isles Dernieres	20BP	63
1972	6	S. tip of Chandeleurs	1,500N	25
5/1972	6	Chandeleur I. & Monkey I.	1,607N	63
5/1973	6	North I.	600N	63
7/1974	6	Monkey I.	2,495N	63
6/1975	6	Curlew I.	10,000-15,000Y	63
Black skimmer (<i>Rynchops niger</i>)				
General: Black skimmers nest abundantly on sandy beaches and islands, often in association with least terns.				
1837	-	S. Carolina to Sabine River	PN	3
1907	2	Caroline Cut I., Isle Dernieres	750BP	39
	2	E. Timbalier I.	5,500BP	39
7/1908	5	Martin Island Key, St. Bernard	225BP	40
	6	Battledore I.	1,600BP	40
	5	Mitchell's Key	200BP	40
	5	Brush I.	500BP	40
8/1908	2	E. Timbalier I.	PN	41

Table B1. (continued)

Date	Region	Location	Abundance	Source
Black Skimmer (Cont'd)				
1908	2	E. Timbalier I.	PN-large colony	18
	6	Battledore I.	PN-abundant	38
1910	6	Grand Gosier I.	300BP	13
	6	Battledore I.	1,000BP	13
	6	Hog I., Plaquemines Parish	200BP	13
	5	Dutchers I.	200BP	13
7/1913	7	E. end of Petit Bois I.	PN-40-50B	35
1913	7	W. end of Dauphin I.	PN	35
	7	Petit Bois I.	PN	20
1917	6	Battledore I.	PN	6
6/1931	6	Breton I.	PN	34
1933	6	Stake I., Curlew I., & Breton I.	several hundred nests	54
6/1938	6	North I.	10BP	27
	7	Pascagoula	PN	27
1940	1	Calcasieu Lake jetties	1BP	60
1941	1	Calcasieu Lake jetties	150BP	60
before 1944	7	Mississippi Coast, Petit Bois I.	PN	20
1949	5	Isle au Pitre	200BP	52 (3:242)
6/1956	7	Pascagoula	150B	67
8/1956	7	Dauphin I.	PN-1,020B	36
1958	1	Calcasieu Lake jetties	PN	60
7/1959	1	Rockefeller Refuge (2 levees 4 mi N. of coast)	165BP	21
1961	4	Delta NWR	PN	25
5/1962	5	Grassy Island	3N	75
1965	4	Grassy Island	x	25
	4	Grassy Island	x	25
1966	6	Breton Islands NWR	100N	25
	6	Breton Islands NWR	750N	25
1967	7	Horn I., MS	10N	25
	7	Petit Bois I., MS	150N	25
6/1968	6	North I.	500BP	63
	6	Curlew I. & Chandeleur I.	250BP	63
1968	6	Breton Islands NWR	800N	25
	7	Horn I.	10N	25
	7	Petit Bois I.	75N	25

Table B1. (concluded)

Date	Region	Location	Abundance	Source
Black Skimmer (Cont'd)				
6/1969	6	Chandeleurs	x	31
5/1970	6	N. Breton I.	250N	31
	2	Coupe Colin Pass I., Isles Dernieres	200N	63
1970	6	N. Breton I.	PN	25
6/1971	6	Chandeleur I.	155N	31
	2	Raccoon Pt. to E. end island, Isles Dernieres	100N	63
5/1972	6	Chandeleur I. & S. Breton I.	100N	63
	4	Barataria Bay West	60BP	62
	1	Rabbit I., Calcasieu lake	20BP	62
1972	6	N. & S. Breton I.	100N	25
5/1973	6	North I.	100N	63
7/1973	5	Raccoon I.	PN-1,000B	63
1973	4	Grand Bay Islands	100BP	62
	6	Chandeleurs to Grand Gosier I.	485BP	62
	1	Rabbit I., Calcasieu Lake	50BP	62
	1	Rabbit I., Calcasieu Lake	PN	59
7/1974	6	Breton I.	421N	63
	5	Gate I., St. Bernard Parish	100BP	4
	1	Rabbit I.	PN	59
	4	Pass Abel I.	300BP	52
				(23:913)
1974	6	Breton Islands NWR	PN	25
6/1975	1	Rabbit I.	PN	59
	6	S. Breton I.	42N	63
	6	Monkey I.	79N	63
	6	Curlew I.	80N	63
8/1975	4	Pass Abel I.	PN-2,000-3,000A	58
1975	2	Timbalier Island West	PN	58

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Appendix C

The Timing and Number of Aerial and Ground Visits to Seabird and Wading Bird Colonies During 1976

Colony	February	March	April	May	June	July	August
588001			▲ ●			●	
588002			●			●	
588003		●	●			●	
588004					▲		
589001					●		
589002					●		
589003					●		
589004					●		
589005					●		
589006					●		
589007					●		
589008					●		
589009				●			
589010				●	●		
589011			●	●	●		
589012			●	●	●		
589013				●	●		
589014				●	●		
589015				●			
589016				●			
589017			●	●	●		
589018			●		●		
589019				●	●		
589020			▲	▲ ●	●		
589021				●			

● Aerial Visit

▲ Ground Visit

■ Aerial and Ground Visit on Same Day

Appendix C (continued)

Colony	February	March	April	May	June	July	August
590001		▲ ●		● ▲		●	●
590002					●		
590003					▲		
590004				●	▲		
590005				●	▲		
590006					▲		
590007				● ▲	▲	▲	
590008		●		●	●	▲	●
590009		●		●		●	●
590010		●		●	●	●	●
590011				●	▲	●	●
590012				●	●	●	
590013					▲		
590014				●	▲		
590015				●	▲		●
590016				●	▲		
590017				●	▲		●
590018				●	●		●
590019				●	●		●
590020				●	●		●
590021				●	●		●
590022							●
590023						▲	
601001		▲ ●	▲	●	●		
601002		●	●		● ▲		
601003		●	▲	●		●	
601004				●		●	
601005				●		●	
601006		●		●		●	
601007				● ▲		●	
601008		●		●		●	
601009		●		▲	●		
601010		●	▲	●	●	▲	
601011						■	
601012						●	
601013						●	
601014						●	
602001	▲	● ▲	▲	▲		●	
602002		●	●	●		●	
602003						●	

Appendix C (continued)

Colony	February	March	April	May	June	July	August
602004			●				
602005			●				
602006		●	●		■	●	
602007			●		● ● ▲ ●	● ●	●
602008			●		● ▲ ●	● ●	●
602009			●		▲	●	
602010			●		▲	●	
602011			●		▲	●	
602012			● ▲		▲	●	
602013					●		
602014		●	● ●				
602015				●			
602016				●			
602017					●		
602018					●		
602019				●			
602020				●			
602021		● ▲		●	●		
602022				●	●		
602023					●	●	
602024		● ●		●	●		
602025				●			
602026					●		
602027					●	●	
602028		●		●		●	
602029		●		●		●	
602030		●		●		●	
602031		●		● ▲	▲ ●	■ ●	■
602032		●		● ▲	●	●	●
602033				●		●	●
602034				●		●	●
602035				● ▲	●		●
602036		●			●		●
602037					●		●
602038		●	▲				●
602039		●		▲			●
602040		●	▲			▲	●
602041				●		●	●
602042				●	●	■	●
602043				●		●	●

Appendix C (continued)

Colony	February	March	April	May	June	July	August
602044			●		● ●	▲	
602045				● ●		●	
602046				●	▲ ▲		
602047		●			● ●		
602048					●		
602049			●				
602050		●	▲ ▲				
602051			▲ ▲			▲	
602052		●	▲				
602053			●			▲	●
602054					●	●	● ●
602055			●				● ●
603001				●	▲		
603002	▲	●	▲	▲	●	●	●
603003			●	▲	●	■	
603004	▲	●	▲	●	●	▲	●
603005		●	▲	●	▲	●	
603006					▲	▲	
603007					▲		
603008	▲	●	▲	●	▲	●	●
603009					●		
603010				● ●	▲	●	
603011				● ●	▲	● ●	
603012		●		● ●	▲	● ●	
603013				● ●	▲	● ●	
603014				● ●	▲	● ●	
603015				● ●	●	● ●	
603016				● ●	● ●	● ●	
603017				▲	● ●	● ●	
603018				● ●	●	●	
603019				● ●	● ●	▲	
603020		● ●		● ●	● ●	● ●	
603021		● ●		● ●	▲	● ●	
603022		● ●		● ●	● ●	● ●	
603023				● ●	▲	● ●	
603024				● ●	▲	● ●	
603025				● ●	▲	● ●	
603026		●		● ●	▲	● ●	●
603027				● ●	▲	● ●	
603028		●		● ●	▲	● ●	

Appendix C (concluded)

Colony	February	March	April	May	June	July	August
603029 603030 603031 603032 603033		●		● ● ● ● ●		● ●	
603034 603035 603036 603037 603038		● ● ●		●●● ●●● ●●● ●●● ●●●		■ ■ ■ ■	● ● ● ▲ ▲
603039 603040 603041 603042 603043		● ●		▲ ▲	▲	● ● ■ ●	● ● ● ■
603044 603045 603046 603047 603048						● ● ● ● ■ ■	● ●
603049 603050 603051				● ●		■ ● ●	● ● ●

Appendix D

Locations and Characteristics of Seabird Colonies of Coastal Louisiana, Mississippi, and Alabama, 1976

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
589021	10	3003	9002	LT	30	2	5	6
590001	9	3009	8928	BS	800	3	6	4
590001	9	3009	8928	FT	5,500	3	2	5
590002	9	3003	8922	BS	40	3	6	4
590003	20	3020	8912	LT	80	3	3	4
590004	20	3020	8911	LT	1,500	3	3	4
590005	20	3020	8910	LT	2,000	3	3	4
590006	20	3022	8902	LT	20	3	3	4
590007	20	3023	8900	LT	4,210	3	3	4
590008	9	3009	8912	BS	1,283	3	6	4
590008	9	3009	8912	CS	44	3	6	4
590008	9	3009	8912	FT	202	3	2	5
590008	9	3009	8912	GT	20	3	6	4
590008	9	3009	8912	LG	1,916	3	2	3
590009	9	3002	8910	BS	166	3	6	4
590009	9	3002	8910	FT	30	3	2	5
590009	9	3002	8910	LG	30	3	2	3
590010	21	3014	8839	LT	30	3	3	4
590011	21	3013	8831	BS	500	3	3	4
590011	21	3013	8831	CS	4	3	3	4
590011	21	3013	8831	GT	2	3	3	4
590011	21	3013	8831	LT	50	3	3	4
590011	21	3013	8831	RT	150	3	3	4
590011	21	3013	8831	SN	822	3	3	4
590012	21	3012	8824	LT	20	3	3	4
590013	22	3015	8809	LT	1,000	3	3	4
590014	22	3015	8812	LT	1,000	3	3	4
590015	22	3014	8819	BS	500	3	3	4
590015	22	3014	8819	CT	12	3	3	4
590015	22	3014	8819	GT	23	3	3	4
590015	22	3014	8819	LT	350	3	3	4
590016	22	3014	8820	LT	350	3	3	4
590017	22	3019	8812	LT	14	3	6	4
590018	20	3014	8909	LT	50	3	3	4
590019	20	3014	8904	BS	90	3	3	4
590020	22	3018	8808	CS	132	3	4	4
590022	21	3022	8834	BS	50	3	4	4
590023	21	3014	8845	BS	80	3	3	4
601002	1	2951	9323	BS	50	2	3	4
601002	1	2951	9323	FT	4,526	2	2	5
601007	1	2959	9252	FT	100	1	2	5
601009	2	2941	9212	BS	60	1	4	4
601009	2	2941	9212	LT	500	1	4	4
601011	1	2944	9345	BS	713	3	3	4
601011	1	2944	9345	LT	500	3	3	4

Appendix D (continued)

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
601012	1	2946	9321	LT	20	3	3	4
601013	1	2946	9314	LT	100	3	3	4
601014	1	2944	9301	LT	30	3	3	4
602006	3	2926	9151	BS	1,000	3	3	4
602006	3	2926	9151	LG	90	3	3	4
602006	3	2926	9151	RT	2,320	3	3	4
602006	3	2926	9151	SN	2,674	3	3	4
602007	4	2924	9122	BS	405	1	4	4
602007	4	2924	9122	GT	16	1	4	4
602007	4	2924	9122	LT	75	1	4	4
602008	4	2923	9122	BS	1,686	1	4	4
602008	4	2923	9122	FT	102	1	4	5
602008	4	2923	9122	GT	112	1	4	4
602013	5	2913	9110	LT	50	3	3	4
602031	5	2903	9056	BS	3,084	3	3	4
602031	5	2903	9056	LG	34,652	3	3	3
602031	5	2903	9056	RT	436	3	3	4
602031	5	2903	9056	SN	192	3	3	4
602032	5	2904	9043	FT	20	3	2	5
602033	5	2903	9044	LT	100	3	3	4
602034	5	2904	9040	LT	50	3	3	4
602035	5	2917	9030	FT	400	3	2	5
602036	5	2912	9028	FT	946	3	2	5
602037	5	2915	9025	FT	60	2	2	5
602041	5	2904	9030	LT	35	3	3	4
602042	6	2904	9021	BS	4,863	3	3	4
602042	6	2904	9021	CS	40	3	3	4
602042	6	2904	9021	LT	60	3	3	4
602042	6	2904	9021	RT	1,274	3	3	4
602042	6	2904	9021	SN	5,464	3	3	4
602043	6	2906	9010	LT	50	3	3	4
602044	6	2909	9007	BS	2,914	3	3	4
602044	6	2909	9007	LT	20	3	3	4
602046	7	2928	9004	FT	1,800	2	2	5
602050	6	2915	9005	FT	78	3	2	5
602051	6	2915	9003	FT	494	3	2	5
602053	6	2904	9024	LT	60	3	3	4
602054	5	2916	9118	LT	50	3	3	4
602055	5	2902	9049	LT	180	3	3	4
603001	8	2927	8957	FT	332	2	2	5
603003	7	2917	8954	BS	1,765	3	3	4
603003	7	2917	8954	LG	2	3	3	4
603004	8	2922	8953	FT	40	3	2	5
603006	8	2923	8952	FT	344	3	2	5
603007	8	2925	8952	FT	38	3	2	5
603008	8	2925	8951	FT	344	3	2	5
603009	9	2955	8921	FT	80	3	2	5
603010	9	2958	8912	BS	119	3	6	4
603010	9	2958	8912	FT	84	3	2	5
603010	9	2958	8912	LG	836	3	2	3
603011	9	2956	8912	BS	226	3	6	4
603011	9	2956	8912	FT	586	3	2	5
603011	9	2956	8912	LG	398	3	2	3
603012	9	2955	8915	FT	172	3	2	5
603012	9	2955	8915	LG	1,998	3	2	3
603013	9	2954	8915	BS	164	3	6	4
603013	9	2954	8915	LG	440	3	2	3
603014	9	2954	8914	CS	150	3	6	4
603014	9	2954	8914	LG	2,486	3	2	3
603014	9	2954	8914	RT	584	3	6	4
603015	9	2954	8912	BS	457	3	6	4
603016	8	2926	8954	FT	200	3	2	5
603018	9	2948	8916	FT	200	3	2	5
603019	9	2944	8922	BS	688	3	6	4

Appendix D (concluded)

COLONY	PARISH	LAT	LONG.	SPECIES	NUMBERS	SALINITY	HABITAT	SITE
603019	9	2944	8922	FT	20	3	2	5
603020	9	2946	8916	LG	600	3	2	3
603021	9	2944	8916	BS	75	3	6	4
603021	9	2944	8916	FT	122	3	2	5
603021	9	2944	8916	LG	1,138	3	2	3
603022	9	2941	8926	FT	1,400	3	2	5
603023	9	2938	8928	FT	332	3	2	5
603024	8	2937	8933	FT	2	3	2	5
603025	8	2936	8934	FT	50	3	2	5
603026	8	2934	8935	FT	506	3	2	5
603026	8	2934	8935	LG	66	3	2	3
603027	9	2942	8933	FT	6	3	2	5
603027	9	2942	8933	LG	200	3	2	3
603031	8	2906	8917	LT	100	1	4	4
603032	8	2858	8923	LT	50	2	4	4
603033	8	2859	8909	FT	50	2	4	4
603033	8	2859	8909	LT	500	2	4	4
603034	8	2929	8910	BS	820	3	3	4
603035	8	2934	8903	BS	1,788	3	3	4
603035	8	2934	8903	LG	5,384	3	3	3
603035	8	2934	8903	RT	110	3	3	4
603036	8	2939	8857	BS	512	3	3	4
603036	8	2939	8857	LG	1,600	3	3	3
603036	8	2939	8857	RT	14,420	3	3	4
603036	8	2939	8857	SN	40,734	3	3	4
603037	8	2938	8858	BS	112	3	3	4
603037	8	2938	8858	CS	48	3	3	4
603037	8	2938	8858	GT	6	3	3	4
603037	8	2938	8858	LG	40	3	3	3
603037	8	2938	8858	RT	1,258	3	3	4
603037	8	2938	8858	SN	3,688	3	3	4
603037	8	2938	8858	ST	20	3	3	3
603038	9	2951	8853	LG	548	3	2	3
603040	9	2953	8852	BS	285	3	6	4
603040	9	2953	8852	LG	3,662	3	2	3
603041	8	2901	8920	BS	1,380	2	4	4
603042	8	2903	8918	BS	1,023	2	4	4
603042	8	2903	8918	LT	800	2	4	4
603043	8	2858	8909	FT	50	2	3	4
603044	8	2908	8915	BS	428	2	4	4
603045	8	2917	8940	LT	50	3	3	4
603046	8	2918	8944	LT	20	3	3	4
603047	7	2918	8954	LT	100	3	3	4
603048	8	2936	8934	BS	390	3	3	4
603049	8	2928	8911	BS	1,114	3	3	4
603049	8	2928	8911	LT	100	3	3	4
603050	9	2952	8855	BS	50	3	3	4
603050	9	2952	8855	RT	774	3	3	4
603050	9	2952	8855	SN	2,108	3	3	4
603051	8	2932	8905	BS	300	3	3	4

Appendix E

Nesting Abundance and Occurrence of Colonial Seabirds and Wading Birds in North Gulf of Mexico Coastal Colonies, 1976

COLONY	PARISH	LAT	LONG.	NUMBERS	SALINITY	HABITAT	SITE
BROWN PELICAN							
603002	7	2918	8957	48	3	2	2
OLIVACEOUS CORMORANT							
588001	1	3001	9330	1,052	1	1	1
588003	1	3003	9324	40	1	1	1
601001	19	2958	9350	788	2	4	2
601003	1	2953	9305	230	1	4	2
601004	1	2946	9256	300	1	4	2
601006	1	2956	9253	250	1	2	2
601007	1	2959	9252	1,000	1	2	2
601008	2	2953	9235	4,000	1	2	2
ANHINGA							
588001	1	3001	9330	14	1	1	1
588004	11	3040	9220	600	1	1	1
589001	13	3028	9144	200	1	1	1
589002	12	3026	9138	10	1	1	2
589003	13	3023	9139	50	1	1	2
589004	12	3021	9137	50	1	1	2
589005	13	3013	9139	100	1	1	2
589007	13	3009	9131	800	1	1	2
589008	12	3008	9118	500	1	1	1
601006	1	2956	9253	10	1	2	2
601007	1	2959	9252	160	1	2	1
601008	2	2953	9235	10	1	2	2
602001	3	2954	9155	10	1	1	2
602002	3	2953	9154	4	1	1	1
602003	3	2949	9142	4	1	1	2
602014	23	2942	9104	10	1	1	1
602024	24	2953	9023	50	1	1	1
GREAT BLUE HERON							
588001	1	3001	9330	248	1	1	1
588003	1	3003	9324	70	1	1	1
589009	15	3009	0945	200	1	1	1
589011	17	3017	9035	100	1	1	1
589012	17	3020	9031	70	1	1	1
589013	18	3022	9027	100	1	1	1
589014	18	3022	9026	10	1	1	1
589015	18	3024	9024	110	1	1	1

Appendix E (continued)

COLONY	PARISH	LAT	LONG.	NUMBERS	SALINITY	HABITAT	SITE
GREAT BLUE HERON (Cont.)							
589016	18	3023	9023	300	1	1	1
589017	16	3010	9031	600	1	1	1
589018	16	3006	9034	30	1	1	1
589019	16	3006	9039	220	1	1	1
601006	1	2956	9253	200	1	2	2
601007	1	2959	9252	110	1	2	1
601008	2	2953	9235	500	1	2	2
602014	23	2942	9104	2,000	1	1	1
602016	14	2958	9053	100	1	1	1
602017	14	2956	9049	100	1	1	1
602024	24	2953	9023	5,000	1	1	1
602029	5	2931	9048	50	1	2	2
GREAT EGRET							
588001	1	3001	9330	114	1	1	1
588002	1	3002	9329	100	1	2	3
588003	1	3003	9324	70	1	1	1
589001	13	3028	9144	500	1	1	1
589007	13	3009	9131	200	1	1	2
589008	12	3008	9118	500	1	1	1
589009	15	3009	9045	1,100	1	1	1
589010	17	3017	9036	100	1	1	1
589011	17	3017	9035	40	1	1	1
589012	17	3020	9031	220	1	1	1
589013	18	3022	9027	300	1	1	1
589016	18	3023	9023	300	1	1	1
589017	16	3010	9031	900	1	1	1
589018	16	3006	9034	1,600	1	1	1
589019	16	3006	9039	550	1	1	1
601001	19	2958	9350	10,378	2	4	2
601002	1	2951	9323	2,086	2	2	3
601003	1	2953	9305	674	1	4	2
601004	1	2946	9256	600	1	4	2
601006	1	2956	9253	2,700	1	2	2
601007	1	2959	9252	1,000	1	2	2
601008	2	2953	9235	5,000	1	2	2
601010	2	2936	9202	2,574	2	4	2
602001	3	2954	9155	640	1	1	6
602002	3	2953	9154	922	1	1	1
602004	4	2955	9136	500	1	1	1
602009	4	2932	9117	16	1	4	2
602010	4	2934	9115	2	1	4	2
602012	4	2936	9114	244	1	4	2
602014	23	2942	9104	2,800	1	1	1
602015	5	2937	9057	300	1	1	1
602016	14	2958	9053	2,400	1	1	1
602017	14	2956	9049	200	1	1	1
602018	6	2954	9051	1,000	1	1	1
602022	24	2957	9031	50	1	2	2
602024	24	2953	9023	10,000	1	1	1
602028	6	2935	9033	800	1	2	2
602029	5	2931	9048	300	1	2	2
602030	5	2925	9055	100	1	1	1
602031	5	2903	9056	3,048	3	2	2
602032	5	2904	9043	100	3	2	2
602036	5	2912	9028	290	3	2	2
602038	6	2913	9021	196	3	2	2
602039	6	2912	9019	1,216	3	2	2
602040	6	2909	9016	2,522	3	2	2
602045	6	2923	9013	100	2	4	2
602047	6	2918	9004	330	3	2	2

Appendix E (continued)

COLONY	PARISH	LAT	LONG.	NUMBERS	SALINITY	HABITAT	SITE
GREAT EGRET (Cont.)							
602049	6	2916	9004	40	3	2	3
602050	6	2915	9005	1,672	3	2	2
602051	6	2915	9003	590	3	2	2
602052	6	2916	9002	260	3	2	2
603002	7	2918	8957	418	3	2	2
603004	8	2922	8953	3,844	3	2	2
603008	8	2925	8951	1,942	3	2	2
603012	9	2955	8915	1,114	3	2	2
603017	9	2948	8921	10	3	2	2
603023	9	2938	8928	58	3	2	2
603024	8	2937	8933	2,348	3	2	2
603025	8	2936	8934	318	3	2	2
603027	9	2942	8933	24	3	2	2
603028	8	2915	8915	3,500	1	2	3
603029	8	2913	8922	900	1	2	2
603039	9	2952	8855	204	3	2	2
603040	9	2953	8852	20	3	2	2
SNOWY EGRET							
588002	1	3002	9329	550	1	2	3
588004	11	3040	9220	50	1	1	2
589002	12	3026	9138	100	1	1	2
589006	13	3013	9139	500	1	1	2
589020	16	3002	9039	1,234	1	1	2
590017	22	3019	8812	600	3	2	2
590021	22	3017	8808	140	3	4	2
601001	19	2958	9350	11,228	2	4	3
601002	1	2951	9323	3,464	2	2	3
601004	1	2946	9256	800	1	4	2
601005	1	2947	9254	75	1	4	2
601007	1	2959	9252	4,500	1	2	2
601008	2	2953	9235	4,000	1	2	2
601010	2	2936	9202	1,240	2	4	2
602001	3	2954	9155	200	1	1	2
602002	3	2953	9154	100	1	1	2
602003	3	2949	9142	100	1	1	2
602005	4	2942	9129	5,000	1	1	2
602009	4	2932	9117	704	1	4	2
602012	4	2936	9114	764	1	4	2
602018	6	2954	9051	500	1	1	2
602020	16	2958	9037	200	1	2	2
602021	6	2948	9038	11,000	1	2	2
602022	24	2957	9031	2,000	1	2	2
602025	24	2953	9021	250	1	1	2
602028	6	2935	9033	2,000	1	2	2
602029	5	2931	9048	500	1	2	2
602030	5	2925	9055	40	1	1	2
602031	5	2903	9056	7,544	3	2	2
602032	5	2904	9043	16	3	2	2
602036	5	2912	9028	2,654	3	2	2
602038	6	2913	9021	3,302	3	2	2
602040	6	2909	9016	6,606	3	2	2
602047	6	2918	9004	20	3	2	2
602048	6	2916	9005	30	3	2	2
602050	6	2915	9005	1,984	3	2	2
602051	6	2915	9003	684	3	2	2
603002	7	2918	8957	4,546	3	2	2
603004	8	2922	8953	3,762	3	2	2
603008	8	2925	8951	2,220	3	2	2
603012	9	2955	8915	318	3	2	2
603014	9	2954	8914	2	3	2	2

Appendix E (continued)

COLONY	PARISH	LAT	LONG.	NUMBERS	SALINITY	HABITAT	SITE
SNOWY EGRET (Cont.)							
603023	9	2938	8928	1,900	3	2	2
603024	8	2937	8933	6,752	3	2	2
603025	8	2936	8934	8,506	3	2	2
603027	9	2942	8933	1,412	3	2	2
603028	8	2915	8915	12,000	1	2	3
603029	8	2913	8922	300	1	2	2
603030	8	2914	8921	70	1	2	2
603040	9	2953	8852	20	3	2	2
REDDISH EGRET							
602031	5	2903	9056	10	3	2	2
602040	6	2909	9016	2	3	2	2
603004	8	2922	8953	10	3	2	2
603012	9	2955	8915	6	3	2	2
603014	9	2954	8914	2	3	2	2
603024	8	2937	8933	210	3	2	2
603027	9	2942	8933	1	3	2	2
603039	9	2952	8855	20	3	2	2
603040	9	2953	8852	38	3	2	2
CATTLE EGRET							
588004	11	3040	9220	40,250	1	1	2
589002	12	3026	9138	500	1	1	2
589004	12	3021	9137	2,000	1	1	2
589006	13	3013	9139	500	1	1	2
589007	13	3009	9131	1,000	1	1	2
589008	12	3008	9118	3,000	1	1	2
589010	17	3017	9036	4,000	1	1	2
589013	18	3022	9027	400	1	1	2
589020	16	3002	9039	50	1	1	2
590017	22	3019	8812	2,000	3	2	2
601007	1	2959	9252	2,000	1	2	2
601008	2	2953	9235	5,000	1	2	2
602001	3	2954	9155	1,200	1	1	2
602002	3	2953	9154	1,400	1	1	2
602009	4	2932	9117	50	1	4	2
602012	4	2936	9114	114	1	4	2
602018	6	2954	9051	2,000	1	1	2
602021	6	2948	9038	2,000	1	2	2
602022	24	2957	9031	7,000	1	2	2
602023	24	2953	9027	12,000	1	2	2
602027	6	2939	9023	300	1	2	2
602028	6	2935	9033	2,000	1	2	2
602029	5	2931	9048	10	1	2	2
602045	6	2923	9013	2,400	2	4	2
603025	8	2936	8934	212	3	2	2
LOUISIANA HERON							
588004	11	3040	9220	600	1	1	2
589001	13	3028	9144	500	1	1	1
589006	13	3013	9139	500	1	1	2
589007	13	3009	9131	500	1	1	2
589008	12	3008	9118	1,000	1	1	2
589020	16	3002	9039	996	1	1	2
590017	22	3019	8812	1,600	3	2	2
590021	22	3017	8808	40	3	4	2
601001	19	2958	9350	5,096	2	4	3
601002	1	2951	9323	8,198	2	2	3

Appendix E (continued)

COLONY	PARISH	LAT	LONG.	NUMBERS	SALINITY	HABITAT	SITE
LOUISIANA HERON (Cont.)							
601005	1	2947	9254	30	1	4	2
601007	1	2959	9252	500	1	2	2
601008	2	2953	9235	500	1	2	2
602001	3	2954	9155	100	1	1	2
602005	4	2942	9129	100	1	1	2
602009	4	2932	9117	258	1	4	2
602010	4	2934	9115	408	1	4	2
602011	4	2935	9115	8	1	4	2
602012	4	2936	9114	3,136	1	4	2
602018	6	2954	9051	1,000	1	1	2
602021	6	2948	9038	3,500	1	2	2
602022	24	2957	9031	600	1	2	2
602028	6	2935	9033	100	1	2	2
602029	5	2931	9048	250	1	2	2
602031	5	2903	9056	18,002	3	2	2
602032	5	2904	9043	1,016	3	2	2
602036	5	2912	9028	2,236	3	2	2
602038	6	2913	9021	15,414	3	2	2
602040	6	2909	9016	8,246	3	2	2
602050	6	2915	9005	966	3	2	2
602051	6	2915	9003	2,474	3	2	2
602052	6	2916	9002	50	3	2	2
603002	7	2918	8957	19,332	3	2	2
603004	8	2922	8953	14,040	3	2	2
603005	8	2923	8953	1,128	3	2	2
603006	8	2923	8952	548	3	2	2
603008	8	2925	8951	580	3	2	2
603010	9	2958	8912	10	3	2	2
603012	9	2955	8915	978	3	2	2
603014	9	2954	8914	38	3	2	2
603017	9	2948	8921	10	3	2	2
603023	9	2938	8928	4,640	3	2	2
603024	8	2937	8933	9,164	3	2	2
603025	8	2936	8934	9,290	3	2	2
603026	8	2934	8935	2	3	2	2
603027	9	2942	8933	2,176	3	2	2
603028	8	2915	8915	25	1	2	3
603040	9	2953	8852	20	3	2	2
LITTLE BLUE HERON							
588002	1	3002	9320	50	1	2	3
588004	11	3040	9220	2,000	1	1	2
589001	13	3028	9144	1,000	1	1	1
589002	12	3026	9138	1,000	1	1	2
589003	13	3023	9139	2,000	1	1	2
589004	12	3021	9137	800	1	1	2
589005	12	3014	9131	300	1	1	2
589006	13	3013	9139	1,000	1	1	2
589007	13	3009	9131	12,000	1	1	2
589008	12	3008	9118	10,000	1	1	2
589010	17	3017	9036	400	1	1	2
589020	16	3002	9039	5,438	1	1	2
590017	22	3019	8812	400	3	2	2
601007	1	2959	9252	200	1	2	2
601008	2	2953	9235	500	1	2	2
602003	3	2949	9142	900	1	1	2
602005	4	2942	9129	5,000	1	1	2
602009	4	2932	9117	2,226	1	4	2
602010	4	2934	9115	1,574	1	4	2
602012	4	2936	9114	194	1	4	2

Appendix E (continued)

COLONY	PARISH	LAT	LONG.	NUMBERS	SALINITY	HABITAT	SITE
LITTLE BLUE HERON (Cont.)							
602018	6	2954	9051	3,000	1	1	2
602019	16	2959	9036	1,500	1	2	2
602020	16	2958	9037	2,500	1	2	2
602021	6	2948	9038	8,000	1	2	2
602022	24	2957	9031	8,000	1	2	2
602023	24	2953	9027	3,000	1	2	2
602025	24	2953	9021	400	1	1	2
602026	24	2953	9018	500	1	2	2
602027	6	2939	9023	400	1	2	2
602028	6	2935	9033	2,400	1	2	2
602029	5	2931	9048	600	1	2	2
602030	5	2925	9055	50	1	1	2
602038	6	2913	9021	68	3	2	2
602040	6	2909	9016	24	3	2	2
602045	6	2923	9013	250	2	4	2
603002	7	2918	8957	528	3	2	2
603004	8	2922	8953	94	3	2	2
603012	9	2955	8915	114	3	2	2
603023	9	2938	8928	274	3	2	2
603024	8	2937	8933	382	3	2	2
603025	8	2936	8934	276	3	2	2
603027	9	2942	8933	46	3	2	2
603028	8	2915	8915	1,500	1	2	3
603029	8	2913	8922	350	1	2	2
603030	8	2914	8921	100	1	2	2
BLACK-CROWNED NIGHT HERON							
588004	11	3040	9220	30	1	1	2
601001	19	2958	9350	3,604	2	4	3
601002	1	2951	9323	1,000	2	2	3
601003	1	2953	9305	8	1	4	2
601006	1	2956	9253	5	1	2	2
601007	1	2959	9252	600	1	2	2
601008	2	2953	9235	100	1	2	2
602005	4	2942	9129	1	1	1	2
602009	4	2932	9117	200	1	4	2
602012	4	2936	9114	82	1	4	2
602028	6	2935	9033	25	1	2	2
602029	5	2931	9048	10	1	2	2
602030	5	2925	9055	20	1	1	2
602031	5	2903	9056	4,172	3	2	2
602032	5	2904	9043	16	3	2	2
602036	5	2912	9028	72	3	2	2
602038	6	2913	9021	160	3	2	2
602039	6	2912	9019	44	3	2	2
602040	6	2909	9016	1,538	3	2	2
602048	6	2916	9005	2	3	2	2
602050	6	2915	9005	364	3	2	2
602051	6	2915	9003	48	3	2	2
603002	7	2918	8957	396	3	2	2
603004	8	2922	8953	3,926	3	2	2
603008	8	2925	8951	302	3	2	2
603012	9	2955	8915	728	3	2	2
603017	9	2948	8921	3	3	2	2
603023	9	2938	8928	58	3	2	2
603024	8	2937	8933	1,280	3	2	2
603025	8	2936	8934	1,442	3	2	2
603027	9	2942	8933	138	3	2	2
603039	9	2952	8855	40	3	2	2

Appendix E (continued)

COLONY	PARISH	LAT	LONG.	NUMBERS	SALINITY	HABITAT	SITE
YELLOW-CROWNED NIGHT HERON							
588004	11	3040	9220	150	1	1	2
602009	4	2932	9117	90	1	4	2
602023	24	2953	9027	10	1	2	2
602030	5	2925	9005	3	1	1	2
WHITE-FACED IBIS							
588002	1	3002	9329	10	1	2	3
590017	22	3019	8812	100	3	2	2
601007	1	2959	9252	25	1	2	2
601003	1	2953	9305	2	1	4	2
601008	2	2953	9235	10	1	2	2
601009	4	2932	9117	1,224	1	4	2
602021	6	2948	9038	100	1	2	2
601023	24	2953	9027	15	1	2	2
602029	5	2931	9048	200	1	2	2
602038	6	2913	9021	366	3	2	3
603002	7	2918	8957	2,174	3	2	3
603004	8	2922	8953	1,416	3	2	3
603012	9	2955	8915	182	3	2	3
603014	9	2954	8914	2	3	2	3
603017	9	2948	8921	3	3	2	3
603023	9	2938	8928	1,624	3	2	2
603025	8	2936	8934	1,040	3	2	2
603027	9	2942	8933	2	3	2	2
603028	8	2915	8915	4,000	1	2	3
WHITE IBIS							
588002	1	3002	9329	20	1	2	3
588004	11	3040	9220	500	1	1	2
589001	13	3028	9144	20	1	1	1
589008	12	3008	9118	3,000	1	1	2
589014	18	3022	9026	60,000	1	1	1
590017	22	3019	8812	1	3	2	2
601001	19	2958	9350	104	2	4	3
601007	1	2959	9252	15	1	2	2
601008	2	2953	9235	100	1	2	2
602005	4	2942	9129	200	1	1	2
602010	4	2934	9115	7,618	1	4	2
602011	4	2935	9115	1,866	1	4	2
602012	4	2936	9114	324	1	4	2
602018	6	2954	9051	150	1	1	2
602021	6	2948	9038	1,700	1	2	2
602029	5	2931	9048	10	1	2	2
602038	6	2913	9021	252	3	2	3
602045	6	2923	9013	30	2	4	2
603002	7	2918	8957	2,134	3	2	3
603004	8	2922	8953	4,072	3	2	2
603012	9	2955	8915	158	3	2	3
603023	9	2938	8928	136	3	2	2
603024	8	2937	8933	4,278	3	2	2
603025	8	2936	8934	64	3	2	2
603028	8	2915	8915	1,000	1	2	3
ROSEATE SPOONBILL							
601001	19	2958	9350	1,346	2	4	2
601004	1	2946	9256	375	1	4	2
601007	1	2959	2952	400	1	2	2
601008	2	2953	9235	500	1	2	2

Appendix E (continued)

COLONY	PARISH	LAT	LONG.	NUMBERS	SALINITY	HABITAT	SITE
LAUGHING GULL							
590008	9	3009	8912	1,916	3	2	3
590009	9	3002	8910	30	3	2	3
602006	3	2926	9151	90	3	3	4
602031	5	2903	9056	34,652	3	3	3
603003	7	2917	8954	2	3	3	4
603010	9	2958	8912	836	3	2	3
603011	9	2956	8912	398	3	2	3
603012	9	2955	8915	1,998	3	2	3
603013	9	2954	8915	440	3	2	3
603014	9	2954	8914	2,486	3	2	3
603020	9	2946	8916	600	3	2	3
603021	9	2944	8916	1,138	3	2	3
603026	8	2934	8935	66	3	2	3
603027	9	2942	8933	200	3	2	3
603035	8	2934	8903	5,384	3	3	3
603036	8	2939	8857	1,600	3	3	3
603037	8	2938	8858	40	3	3	3
603038	9	2951	8853	548	3	2	3
603040	9	2953	8852	3,662	3	2	3
GULL-BILLED TERN							
590008	9	3009	8912	20	3	6	4
590011	21	3013	8831	2	3	3	4
590015	22	3014	8819	23	3	3	4
602007	4	2924	9122	16	1	4	4
602008	4	2923	9122	112	1	4	4
603037	8	2938	8858	6	3	3	4
FORSTER'S TERN							
590001	9	3009	8928	5,500	3	2	5
590008	9	3009	8912	202	3	2	5
590009	9	3002	8910	30	3	2	5
601002	1	2951	9323	4,526	2	2	5
601007	1	2959	9252	100	1	2	5
602008	4	2923	9122	102	1	4	5
602032	5	2904	9043	20	3	2	5
602035	5	2917	9030	400	3	2	5
602036	5	2912	9028	946	3	2	5
602037	5	2915	9025	60	2	2	5
602046	7	2928	9004	1,800	2	2	5
602050	6	2915	9005	78	3	2	5
602051	6	2915	9003	494	3	2	5
603001	8	2927	8957	332	2	2	5
603004	8	2922	8953	40	3	2	5
603006	8	2923	8952	344	3	2	5
603007	8	2925	8852	38	3	2	5
603008	8	2925	8951	344	3	2	5
603009	9	2955	8921	80	3	2	5
603010	9	2958	8912	84	3	2	5
603011	9	2956	8912	586	3	2	5
603012	9	2955	8915	172	3	2	5
603016	8	2926	8954	200	3	2	5
603018	9	2948	8916	200	3	2	5
603019	9	2944	8922	20	3	2	5
603021	9	2944	8816	122	3	2	5
603022	9	2941	8926	1,400	3	2	5
603023	9	2938	8928	332	3	2	5
603024	8	2937	8933	2	3	2	5
603025	8	2936	8934	50	3	2	5

Appendix E (continued)

COLONY	PARISH	LAT	LONG.	NUMBERS	SALINITY	HABITAT	SITE
FORSTER'S TERN (Cont.)							
603026	8	2934	8935	506	3	2	5
603027	9	2942	8933	6	3	2	5
603033	8	2859	8909	50	2	4	4
603043	8	2858	8909	50	2	3	4
COMMON TERN 19214							
590015	22	3014	8819	12	3	3	4
SOOTY TERN							
603037	8	2938	8858	20	3	3	3
LEAST TERN							
589021	10	3003	9002	30	2	5	6
590003	20	3020	8912	80	3	3	4
590004	20	3020	8911	1,500	3	3	4
590005	20	3020	8910	2,000	3	3	4
590006	20	3022	8902	20	3	3	4
590007	20	3023	8900	4,210	3	3	4
590010	21	3014	8839	30	3	3	4
590011	21	3013	8831	50	3	3	4
590012	21	3012	8824	20	3	3	4
590013	22	3015	8809	1,000	3	3	4
590014	22	3015	8812	1,000	3	3	4
590015	22	3014	8819	350	3	3	4
590016	22	3014	8820	350	3	3	4
590017	22	3019	8812	14	3	6	4
590018	20	3014	8909	50	3	3	4
601009	2	2941	9212	500	1	4	4
601011	1	2944	9345	500	3	3	4
601012	1	2946	9321	20	3	3	4
601013	1	2946	9314	100	3	3	4
601014	1	2944	9301	30	3	3	4
602007	4	2924	9122	75	1	4	4
602013	5	2913	9110	50	3	3	4
602033	5	2903	9044	100	3	3	4
602034	5	2904	9040	50	3	3	4
602041	5	2904	9030	35	3	3	4
602042	6	2904	9021	60	3	3	4
602043	6	2906	9010	50	3	3	4
602044	6	2909	9007	20	3	3	4
602053	6	2904	9024	60	3	3	4
602054	5	2916	9118	50	3	3	4
602055	5	2902	9049	180	3	3	4
603031	8	2906	8917	100	1	4	4
603032	8	2858	8923	50	2	4	4
603033	8	2859	8909	500	2	4	4
603042	8	2903	8918	800	2	4	4
603045	8	2917	8940	50	3	3	4
603046	8	2918	8944	20	3	3	4
603047	7	2918	8954	100	3	3	4
603049	8	2928	8911	100	3	3	4
SANDWICH TERN							
590011	21	3013	8831	822	3	3	4
602006	3	2926	9151	2,674	3	3	4
602031	5	2903	9056	192	3	3	4
602042	6	2904	9021	5,464	3	3	4

Appendix E (concluded)

COLONY	PARISH	LAT	LONG.	NUMBERS	SALINITY	HABITAT	SITE
SANDWICH TERN (Cont.)							
603036	8	2939	8857	40,734	3	3	4
603037	8	2938	8858	3,688	3	3	4
603050	9	2952	8855	2,108	3	3	4
CASPIAN TERN							
590008	9	3009	8912	44	3	6	4
590011	21	3013	8831	4	3	3	4
590020	22	3018	8808	132	3	4	4
602042	6	2904	9021	40	3	3	4
603014	9	2954	8914	150	3	6	4
603037	8	2938	8858	48	3	3	4
ROYAL TERN							
590011	21	3013	8831	150	3	3	4
602006	3	2926	9151	2,320	3	3	4
602031	5	2903	9056	436	3	3	4
602042	6	2904	9021	1,274	3	3	4
603014	9	2954	8914	584	3	6	4
603035	8	2934	8903	110	3	3	4
603036	8	2939	8857	14,420	3	3	4
603037	8	2938	8858	1,258	3	3	4
603050	9	2952	8855	774	3	3	4
BLACK SKIMMER							
590001	9	3009	8928	800	3	6	4
590002	9	3003	8922	40	3	6	4
590008	9	3009	8912	1,283	3	6	4
590009	9	3002	8910	166	3	6	4
590011	21	3013	8831	500	3	3	4
590015	22	3014	8819	500	3	3	4
590019	20	3014	8904	90	3	3	4
590022	21	3022	8834	50	3	4	4
590023	21	3014	8845	80	3	3	4
601002	1	2951	9323	50	2	3	4
601009	2	2941	9212	60	1	4	4
601011	1	2944	9345	713	3	3	4
602006	3	2926	9151	1,000	3	3	4
602007	4	2924	9122	405	1	4	4
602008	4	2923	9122	1,686	1	4	4
602031	5	2903	9056	3,084	3	3	4
602042	6	2904	9021	4,863	3	3	4
602044	6	2909	9007	2,914	3	3	4
603003	7	2917	8954	1,765	3	3	4
603010	9	2958	8912	119	3	6	4
603011	9	2956	8912	226	3	6	4
603013	9	2954	8915	164	3	6	4
603015	9	2954	8912	457	3	6	4
603019	9	2944	8922	688	3	6	4
603021	9	2944	8916	75	3	6	4
603034	8	2929	8910	820	3	3	4
603035	8	2934	8903	1,788	3	3	4
603036	8	2939	8857	512	3	3	4
603037	8	2938	8858	112	3	3	4
603040	9	2953	8852	285	3	6	4
603041	8	2901	8920	1,380	2	4	4
603042	8	2903	8918	1,023	2	4	4
603044	8	2908	8915	428	2	4	4
603048	8	2936	8934	390	3	3	4
603049	8	2928	8911	1,114	3	3	4
603050	9	2952	8855	50	3	3	4
603051	8	2932	8905	300	3	3	4