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The tern colony of Curlew Island, Louisiana

Robert D. Purrington

Royal and Sandwich terns (Sterna maxima and S. sandvicensis). Photo/Robert Purrington.



A RECENT COMMENT BY PETERSON (1986) points out a fact perhaps not generally known, that the largest tern colony in the United States is now the Sandwich Tern-Royal Tern colony on Curlew Island, in the barrier chain known as the Chandeleur Islands, off the Louisiana coast. During the past three decades, as numbers in the predominantly Sooty Tern colony on the Dry Tortugas have declined to some 40,000 pairs (Clapp *et al.* 1983), the colony on Curlew Island has grown to as high as 65,000 breeding pairs (Stewart 1975; Peterson 1986). While the great majority of the birds breeding on this island are Sandwich and Royal terns, colonies of 100 or so Caspian Terns are found on the island, a few Sooty and Gull-billed terns nest there as well, and at least one Common Tern nest has been found*, the only one for Louisiana. Least Terns also use the island.

Curlew Island (28°38.5'N, 88°58'W) is a barrier island about two miles long, and varies in width from as much as a third of a mile to as little as 50 yards or less. It is located 16 to 20 nautical miles from the mainland edge of the coastal marsh. While a shell berm four to six feet high on the Gulf side provides protection from erosion by surf action and the effect of storm tides, during a hurricane or tropical storm waves will breach or swamp the shell ridge and dunes and wash across the island. The island is not infrequently cut in half at its lowest point by storm tides, and in 1969 it was entirely swept away by Hurricane *Camille*. Rebuilding, however, was rapid, and present vegetation ranges from a variety of saltmarsh grasses (*Spartina alterniflora*, *Distichlis spicata*, etc.) to *Baccharis halimifolia* and *Myrica cerifera* up to ten feet high. Several species of herons nest in the woody vegetation and a significant fraction of the nearly 10,000 Laughing Gull nests are on mats of *Spartina patens*. It is ironic that neither Curlew Island nor nearby Grand Gosier, which harbor most of the colonial nesting birds on the Chandeleurs, are part of the federal refuge system.

Prior to 1969 there were large colonies on both Curlew Island and Stake Island, just to the northeast of Curlew. Hurricane *Camille* reduced both to shoals in August of that year and the tern colonies moved to the lower end of Chandeleur Island itself, on what is known locally as "Monkey Island", and to nearby North Island. The data for



Sooty Tern (*Sterna fuscata*). Photo/Robert Purrington.

1970 include 100,000 breeding adults on North Island (White, *in* Stewart 1970) and 40,000 nests in Breton National Wildlife Refuge (Portnoy 1977), presumably representing the same birds. By 1973, terns were again nesting on rapidly emerging Curlew Island, but Stake Island has never recovered. During the first two years after *Camille*, numbers nesting on Monkey Island were comparable to those of the previous two years, but then seemed to drop through about 1974. One factor may have been Hurricane *Agnes*, which struck in June of 1972, completely destroying the tern colonies on Monkey Island. The Monkey Island site may have been more susceptible to the effects of summer storms than Stake or Curlew islands. Since 1975 the Curlew Island colony has been at record numbers: 40,000–65,000 young in June of that year, implying approximately that many nests (Valentine and Newman, *in* Stewart 1975), 60,000 breeding adults in 1976 (Portnoy 1977), 42,000 nests in 1979*, 40,000+ nests in 1985*, and Peterson's estimate of 65,000 nests in 1986. Historically, numbers had been reported in the vicinity of 3000–5000 nests of each species (Bent 1921; Oberholser 1938; Portnoy 1977). When Bent visited the Chandeleur complex in 1910 he recorded 9000 adults of the two species on what he called "Grand Chochere Island." He described it as being 114 miles south of Pass Christian, Mississippi, which is impossible in any case, but the usual assumption that the island was Grand Gosier, just southwest of Curlew Island is inconsistent with his descrip-

tion of its shape. On that score it seems possible that it may have been North Island, New Harbor, or Freemason islands (a mere 25 miles from the Mississippi coast), or perhaps Breton Island. Several photographs of the colonies appear in Bent's "Life Histories of North American Gulls and Terns" (Bent 1921). Data accumulated during the next fifty years are very spotty and mostly qualitative (Portnoy 1977), although Oberholser reported over 10,000 nests on Errol Island, very nearly the site of Stake Island, in 1933 (Oberholser 1938). In 1961–1962 approximately 8000 pairs were breeding on Curlew Island and during the next four years numbers ranging from 1000 to 6000 pairs were reported from Curlew or from the refuge. These figures may or may not accurately reflect the breeding population in that period. The uncertainty results from incomplete coverage, the effects of storms in disrupting nesting, the transient nature of some colonies, which may move from one island to another, and inadequate and incomplete censusing. Curlew Island was sometimes missed by Fish and Wildlife Service censuses as a result of its being outside the refuge. With the exception of the systematic and continuous censuses by Valentine, the quality of estimates has been variable. Table 1 shows the recorded breeding populations from 1962 to 1986, assuming the approximate equalities—one nest = one breeding pair = one young—in order to combine the disparate data. Evidently numbers rose dramatically between 1966 and 1969, for reasons that are unknown.

Table 1. Sandwich Tern and Royal Tern colonies on the Chandeleur Islands, Louisiana

Year	Sandwich	Royal	Total*
1962	8700i ⁴	7000i ⁴	7850
1967	6000p ²	1000p ²	7000
1968	27,900n ¹	4000n ¹	31,900
1969	46,613n ²	3363n ²	49,976
1970	40,000n ⁴	4000n ⁴	44,000
1971	23,400n ³	2600n ³	26,000
1972	12,700n ³	1500n ³	15,200
1973	2500n ⁵	600n ⁵	3100
1974	5821n ³	2495n ³	8316
1975	30–50,000y ¹	10–15,000y ¹	50,000
1976	44,422i ¹	15,768i ¹	35,000
1979	35,000n ¹	7500n ¹	42,500
1983			40,000 ^{1 and 6}
1985	49,000i ¹	29,000i ¹	39,000
1986			65,000 ^{1 and 6}

* Nests, breeding pairs, or equivalent, i = individuals, n = nests, p = breeding pairs, y = young.

1 Curlew Island

2 Stake Island

3 "Monkey Island"

4 "Chandeleurs", or "refuge"

5 North Island

6 In 1983 and 1986 no separate totals were obtained. The figure presented is for both species combined.

While Hurricane *Betsy* struck the area in September of 1965, there is nothing to indicate that birds may have moved from another breeding site that was destroyed by *Betsy*. The steep decline after 1969 was almost certainly due to Hurricane *Camille*, yet notice that numbers the following year (1970) were only slightly below the historic high of 1969. The fact is that without an aerial survey, colonies, even the very largest ones, can be missed.

What is clear is that the colony of Sandwich Terns and Royal Terns on Curlew Island regularly contains some 40,000–80,000 nesting pairs, with the ratio of Sandwich Tern to Royal Tern numbers being on the order of 3:1 to 5:1 or higher, occasionally dropping below 2:1 (Valentine, *in* Kennedy 1974). My measurements indicate a maximum density of approximately 17–20 Sandwich Tern nests per square meter and about 10 Royal Tern nests per square meter. Bent counted 100 nests in a four-yard square area, thus only six to seven nests per square meter and Clapp *et al.* (1983) quote figures of up to ten nests per square meter for Sandwich Terns and an average of five to seven nests per square meter for Royal Terns. Photographs indicate that the mixed colonies are stratified, giving the appearance of alternating rows of Royal and Sandwich terns. The "colony" on Curlew Island typically consists of four or five colonies spread along about one and a half miles of outer beach, with the largest contain-

ing up to as many as 40,000 nesting pairs.

While Curlew Island is under state protection, it is neither often actually visited by Louisiana Department of Wildlife and Fisheries refuge personnel, nor are the islands of the Gulf Islands National Wildlife Refuge (formerly Breton National Wildlife Refuge) often checked by federal agents. They are popular with fishermen, who often camp on them and only their relative remoteness from the mainland provides protection for the colonies. As far as is known, the only significant predators are Laughing Gulls, which nest on Curlew Island in numbers approaching 10,000 pairs.

One of the more interesting aspects of the Chandeleur tern colonies is the presence of a small but persistent colony of Sooty Terns, mostly or entirely on Curlew Island, which has existed since the 1930s at least—whether continuously or not is unknown—and whose size has typically been about 30 breeding pairs during the past decade. Peterson (1986) speculated about whether the Sooty Terns he saw on Curlew Island in May of 1986 were "stray wanderers" or "pioneers." In fact the earliest evidence of nesting goes back to June 1933 when a single nest was found on Curlew Island (Oberholser 1938); the attendant birds, however, were found both to be females. A nest with one egg was found on Stake Island, just north of Curlew, in June 1964 (Stewart 1964) and on June 27, 1967 (not May 31, as given by Clapp *et*

al 1983), the writer and others found 20 adults and eight nests containing six eggs and three nestlings on the same island (Stewart 1967; Purrington 1970). In 1969, 11 nests with eggs were found (Eyster, *in* Hoese and Valentine 1972). Highest numbers have been 45 adults and 30 nests in 1979 on Curlew Island*. Many of the nests have been on the periphery of the main tern colonies, often immediately adjacent to colonies of Black Skimmers. These nests are always scrapes in the sand but usually take advantage of cover offered by a tuft of vegetation. Other individuals are bush-nesters, breeding in groups of up to 20 nests.

Banded Sooty Terns were first sighted in 1969* and 1976 (Stewart 1976) and the trapping and banding efforts of Jeter and O'Mealie (*pers. comm.*) have shown that many of the adults had fledged from the Dry Tortugas colony.

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* Observations marked with an asterisk were made by the author on eight visits to the islands between 1967 and 1985, with Robert J. Newman, Sidney A. Gauthreaux, Jr., Mac Myers, Norton Melkin, Al Smalley, and Larry O'Mealie, among others.