

Florida Field Naturalist

PUBLISHED BY THE FLORIDA ORNITHOLOGICAL SOCIETY

VOL. 12, No. 3

AUGUST 1984

PAGES 49-80

THE HISTORY OF THE LAUGHING GULL POPULATION IN TAMPA BAY, FLORIDA

STEPHEN R. PATTON AND LISE A. HANNERS

Department of Biology
University of South Florida
Tampa, Florida 33620

The Laughing Gull (*Larus atricilla*) breeds locally on the Atlantic coast from southern New Brunswick, Canada, through Florida and the Caribbean, and on the Gulf Coast from Florida to Texas (AOU 1983). We censused all Tampa Bay, Florida, Laughing Gull colonies in 1981 and were impressed by the large population size. Consequently, we have reviewed the literature and notes of local biologists to assess the status of the population in this area from the earliest available published accounts to the present.

Numerous records of nesting Laughing Gulls exist from the Tampa and St. Petersburg area, perhaps because of the large number of observers there. The earliest historical accounts we found of Laughing Gulls nesting in Tampa Bay were from the late 19th century. These records, provided primarily by collectors and naturalists on their trips to Florida, described the devastation of Gulf Coast waterbird populations by hunters in the millinery trade (e.g. Scott 1887, 1888). In 1933, the National Association of Audubon Societies initiated its Tampa Bay Bird Project and hired its first full time warden, Fred Schultz (Mills 1934). Schultz's primary duty was to protect several bird colonies in Tampa Bay, but he, as well as some of his successors, occasionally reported on the status of bird colonies in the Tampa Bay region that were not under the Association's jurisdiction. In the 1960's and 1970's, published and unpublished records in the Bay Area provided an estimate of the size of the Laughing Gull population. In 1981 and 1982 we censused all Tampa Bay Laughing Gull colonies.

In this paper, we review the history of the Tampa Bay Laughing Gull population from the late 1800's to the present. We also discuss factors that may have affected the recent growth of this population.

METHODS

We reviewed the following journals and years: American Birds (1947-1983); Auk (1884-1982); Bird-Lore (1899-1940); Bulletin of Nuttall Ornithological Club (1876-1883); Florida Field Naturalist (1973-1983); Florida Naturalist (1927-1983); Journal of Field Ornithology (1930-1983); and the Wilson Bulletin (1891-1983). We also examined unpublished accounts from the field notes of Brian A. Harrington, Richard T. Paul, Sievert A. Rohwer, and Glen E. Woolfenden.

For our own censuses we used a quadrat sampling technique with circular plots (Cox 1976) to estimate population size at all Bay Area colonies in 1981 and 1982. A stratified random sampling procedure was used to census nests in representative vegetation types. Nest counts from ten 100 m² plots were extrapolated to the total area occupied by nesting gulls. Partial nest counts were used rather than total nest counts to avoid prolonged disturbances in the colonies. Counts were made during late incubation; only nests with eggs were used to estimate the total nesting population. All population estimates provided in this paper are numbers of nesting pairs, one pair per nest counted.

RESULTS

Figure 1 and Table 1 summarize all sites known to us in Tampa Bay where Laughing Gulls have been recorded. Passage Key and keys near Pass-A-Grille, including Shell Key, are natural keys or beaches that have remained undeveloped. The remaining eight sites are spoil islands created since 1930 (Lewis and Lewis 1978).

We know of only two sites in Tampa Bay used by nesting Laughing Gulls prior to 1900. These sites are Passage Key at the mouth of Tampa Bay and "low sand islands and bars off Pass-A-Grille" (Scott 1888). In his visits to these sites in the early 1880's, Scott (1888) reported that "countless hosts of Terns, Gulls, and Black Skimmers" (*Rynchops niger*) nested at these sites. In 1888, Scott (1888) sent Dickinson and Parkes to these sites to inspect the bird colonies. Only Black Skimmers were reported nesting, and few Laughing Gulls were observed. Scott concluded that persecution by plume hunters and degradation by egg hunters had nearly extirpated the gull and tern populations.

From 1901 to 1920 the Tampa Bay Laughing Gull population increased following cessation of market hunting. During this period, Passage Key was the only active Laughing Gull colony site recorded in the Tampa Bay region (Table 1).

We found no records of nesting near Pass-A-Grille during this 20-year period although nesting habitat may have been available. The natural sand bars near Pass-A-Grille support herbaceous vegetation amongst areas of bare sand and shell and are maintained by periodic flooding. Historically, such sites probably were suitable for gulls provided that human disturbance was minimal.

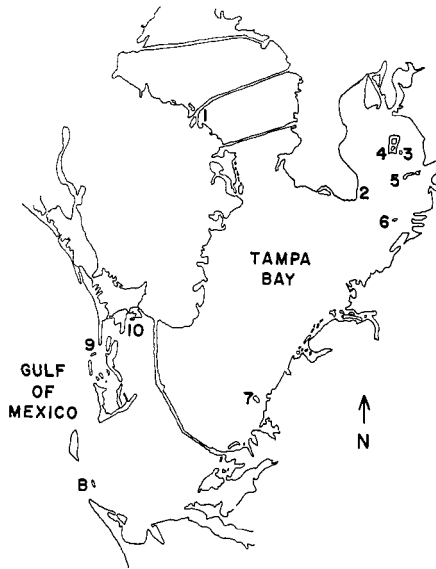


Fig. 1. Laughing Gull colony sites in Tampa Bay, 1880-1982. 1. Howard Frankland Bridge; 2. Gadsden Point Spoil Bank; 3. Fantasy Island; 4. North Spoil; 5. Alafia Banks (I-59); 6. Island I-61 (I-61); 7. Port Manatee Spoil (I-66); 8. Passage Key; 9. Pass-A-Grille; 10. Bayway (I-49B). Numbering system of Schreiber and Schreiber (1978) is in parentheses.

Passage Key was an important colony site for Laughing Gulls during the 1920's and 1930's. In 1921, a hurricane obliterated the island. Shortly after, deposition of sand rebuilt the island and gulls in smaller numbers used it for nesting (Howell 1932). By 1935 Laughing Gulls nested on Passage Key in large numbers (Schultz 1936).

The islands south of Pass-A-Grille as well as Pass-A-Grille Beach supported small colonies of Laughing Gulls during the 1920's (Table 1). In 1935, a search by Schultz (1936) of islands in this region failed to locate any active Laughing Gull colonies. His observations of campers at these sites suggests to us that human disturbance had caused the birds to abandon these colonies.

The first dredged-fill islands were created in Tampa Bay in 1931 when the Alafia Banks spoil islands (Bird and Sunken islands) were built by the United States Phosphoric Products Corporation in a harbor deepening project (Mills 1934). These sites along with several other spoil banks created during the 1960's and 1970's became important gull nesting sites during this century. Laughing Gulls first colonized the Alafia Banks site, Bird Island,

TABLE 1. Summary of records of Laughing Gull nesting in Tampa Bay, Florida from the 1880's to 1980.

Year	Site name: estimate of population size	Source
Early 1880's	Passage Key and Pass-A-Grille: "countless hosts of Terns, Gulls, and Black Skimmers nested."	Scott (1888)
1888	Passage Key and Pass-A-Grille: on 2 July "The only Gulls that were noted on this expedition were a few Laughing Gulls."	Scott (1888)
1906	Passage Key: "many" nesting Laughing Gulls	Pearson (1907)
1908	Passage Key: "a good many young gulls are flying and we think by next month they all will be through nesting."	Dutcher (1908)
1912	Passage Key: Pillsbury estimated "that 1,200 birds nested and 1,000 young were raised."	Howell (1932)
1921	Passage Key: Hurricane in October 1921 totally washed over the island; the site was rebuilt shortly after. "now . . . gulls in smaller numbers still use it"	Howell (1932)
1922	Pass-A-Grille: Laughing Gulls reported nesting	Howell (1932)
1926	Pass-A-Grille: "400 present on breeding ground south of Long Key"	Fargo (1926)
1927	Pass-A-Grille: Nesting Laughing Gulls reported	Howell (1932)
1934	Alafia Banks: 1,000 pairs nesting on Bird Island	Mills (1934) Lehman (1938)
1935	Passage Key: 22,000 nesting birds; "Laughing Gulls predominating; about 20% were Black Skimmers; 2,000 Royal Terns" From these data extrapolate that roughly 7,800 pairs of Laughing Gulls nested.	Schultz (1936)
	Alafia Banks: 1,500 pairs of gulls nested on Bird Island	Lehman (1938)
1936	Alafia Banks: 2,000 pairs of gulls nested on Bird Island	Lehman (1938)
	Gadsden Point: 250 pairs of gulls nested	Lehman (1938)
1937	Alafia Banks: 2,300 pairs of gulls nested on Bird Island	Lehman (1938)
	Gadsden Point: no Laughing Gulls observed	Lehman (1938)
1938	Alafia Banks: 1,800 pairs of gulls nested on Bird Island	Lehman (1938)
1939	Alafia Banks: 2,000 pairs of gulls nested on Bird Island	Mills (1939)
1949	Passage Key: 1,000 pairs of gulls nested	Mills (1949)
1963	Pass-A-Grille: Laughing Gulls nested on Shell Key Howard Frankland Bridge Causeway: 700-800 pairs nested on the west end	G. E. Woolfenden ¹ S. A. Rohwer
1964	Pass-A-Grille: 2,500 pairs nested on Shell Key	G. E. Woolfenden
1966	Passage Key: 25 Laughing Gull nests with fresh eggs	G. E. Woolfenden

TABLE 1. (Continued)

Year	Site name: estimate of population size	Source
1969	Bayway: 1,000-1,500 pairs nested	B. A. Harrington
1970	Bayway: Laughing Gulls nested, no estimate	Dinsmore and Schreiber (1974)
1971	Bayway: "Approximately 2,000 Laughing Gulls" present on 5 July	Ogden (1971)
1972	Bayway: 15,000 pairs nested	Dinsmore and Schreiber (1974)
1973	Bayway: 15,000 pairs nested	Dinsmore and Schreiber (1974)
1974	Bayway: 15,000-20,000 pairs of gulls nested	Schreiber and Schreiber (1978)
	Island I-61 colonized by Laughing Gulls	Lewis and Dunstan (1975)
1975- 1976	Bayway: 15,000-20,000 pairs of gulls nested	Schreiber and Schreiber (1978)
1977	Bayway: 50,000 adults nesting	Schreiber and
	Port Manatee Spoil: 7,800 adults nesting	Schreiber (1978)
	Island I-61: 800 pairs nesting	
	Alafia Banks: 34 adults nested on Sunken Island	

¹References without dates are personal communications.

in 1934 (Lehman 1938). Nesting at this site continued throughout the 1930's until 1939 (Mills 1939). A storm that year washed out the colony.

Another dredged-fill site was colonized by Laughing Gulls during 1921-1940. A spoil bank off Gadsden Point supported a small colony of 250 pairs of Laughing Gulls in 1936 (Mills 1937). That was the first year that the site was vegetated (Mills 1937). Nesting was not reported off Gadsden Point in subsequent years by Lehman (1938, 1939).

During the 1940's and 1950's, Passage Key was to our knowledge the only Laughing Gull colony reported. Mills (1949) observed 1,000 nesting pairs there in 1949. Aerial photographs (Lewis and Dunstan 1975) of Bird and Sunken islands taken in 1948 show that Sunken Island had completely eroded and that nesting space on Bird Island had been substantially reduced by vegetative growth. This suggests that the natural sites at Passage Key and the Pass-A-Grille islands were the only potential nesting locations in Tampa Bay.

Records of Laughing Gull nesting are relatively abundant from the period 1961-1980. We have records of Laughing Gulls nesting at Pass-A-Grille in 1963 (G. E. Woolfenden pers. comm.) and in

1964 (Woolfenden and S. A. Rohwer pers. comm.), and at Passage Key in 1966 (Woolfenden pers. comm.). The west end of the Howard Frankland Bridge was used by gulls once in 1963 (Rohwer pers. comm.). Bayway fill was under construction by 1960 (Lewis and Lewis 1978) and consisted of several islands and a causeway. Laughing Gulls nested at several locations on the fill. We report a single estimate of population size for the Bayway sites. Our first record of Laughing Gulls nesting at this site was in 1969 (B. A. Harrington pers. comm.). During the 1970's, the number of gulls nesting on Bayway fill more than doubled although the exact colony sites changed when some of the islands were developed.

Additional spoil islands in the Bay Area were colonized by Laughing Gulls in the 1970's. Island I-61 was created in 1965 and colonized by gulls in 1974 (Lewis and Dunstan 1975). Nesting at this site was reported again in 1977 (Schreiber and Schreiber 1978). By 1981, this island had completely eroded away. In 1977, the rebuilt Alafia Banks site (Sunken Island) was colonized by 17 pairs of Laughing Gulls (Schreiber and Schreiber 1978), and the size of this colony grew each year for the duration of the decade. Port Manatee Spoil was created in 1969, supported a colony of gulls in 1977 (Schreiber and Schreiber 1978), and continued to be active through 1982.

Two new sites were found in 1981 and 1982 (Table 2). Fantasy Island was created in 1977 and was colonized by gulls shortly thereafter. North Spoil is a large dredged-fill island that supported colonies of Gull-billed Terns (*Gelocheilidon nilotica*), Least Terns (*Sterna antillarum*), and Black Skimmers in 1981 (pers. obs.). In 1982 the island was colonized by Laughing Gulls.

Our current estimate of the Laughing Gull breeding population in Tampa Bay is 50,000 pairs. The Bayway colony site, once the largest in the state (Patton in prep.), apparently reached its maximum size in 1981, and by 1983 vegetative cover was reducing the habitat available for nesting. The 50% reduction in colony size observed at Bayway from 1981 to 1982 (see Table 2) is attributable to an abandonment of a substantial proportion of this site prior to egg-laying. The cause of abandonment is unknown. We do not know if these gulls abandoned the Bayway to breed elsewhere in 1982, but they departed sufficiently early that this is possible. Increases in colony sizes at Passage Key, Fantasy Island, and the new North Spoil site nearly equalled the reduction in colony size observed at Bayway in 1982 (Table 2).

TABLE 2. Estimated number of pairs of Laughing Gulls nesting at all active Tampa Bay colony sites in 1981 and 1982.

Colony Site Name	1981	1982
Passage Key	1,000	6,300
Port Manatee Spoil	5,000	4,200
Alafia Banks	7,300	4,550
Fantasy Island	6,000	15,300
North Spoil	unoccupied	3,800
Bayway	31,000	14,550
Total	50,300	48,700

DISCUSSION

The population of Laughing Gulls nesting in Tampa Bay has varied markedly over the past century. Prior to the 1880's, natural islands such as Passage Key and sites near Pass-A-Grille supported "countless hosts of Gulls, Terns, and Black Skimmers" (Scott 1888). Scott (1888) observed that by 1888, Laughing Gulls had been essentially extirpated as a nesting species from the Bay Area by plume and egg hunters. During the next 20 years, thanks to protective measures enacted by the Federal Government and the activities of the National Audubon Society, the Laughing Gull population experienced a period of limited growth. Creation of spoil islands, particularly the Alafia Banks sites, provided additional nesting habitat for Bay Area gulls. Extrapolating from the data in Table 1, we estimate that the maximum number of nesting pairs in any year (1935) approached 10,000 during 1921-1970. Three major colony sites were used: Passage Key, Pass-A-Grille, and Alafia Banks spoil. The sporadic accounts in the literature may result in an underestimation of the Bay Area gull population during this period. We believe however that until the late 1960's, the Bay Area gull population was limited primarily by the availability of suitable nesting habitat.

In the 1960's and early 1970's nesting habitat for Laughing Gulls increased substantially as a result of the creation of four new islands (Bayway, Port Manatee, Fantasy Island, and North Spoil) and the reconstruction of a fifth site (Alafia Banks). In 1982, six of the seven sites occupied by Laughing Gulls in Tampa Bay were artifacts. These sites supported 87% of the Laughing Gull population. Clearly, such sites are important to the expanded population. Bayway was bulldozed for preparation of housing lots following the 1983 nesting season.

Concomittant with this increase in nesting sites was an increase in food availability resulting from man's handling of refuse. Up to three major landfills in the Tampa Bay area were used regularly by large numbers of gulls throughout the summer. Our observations and those of Dinsmore and Schreiber (1974) of regurgitations to chicks at the Bayway colony indicate that a substantial proportion of food was obtained at landfills. Closure of the two Pinellas County landfills to raw waste in 1983 probably will adversely affect the Bay Area Laughing Gull population.

SUMMARY

We summarize the history of nesting Laughing Gulls in Tampa Bay, Florida from the 1880's to the present. Laughing Gulls were abundant summer residents in the Bay Area prior to the millinery trade on at least two natural islands near the mouth of Tampa Bay. By 1888, Laughing Gulls were nearly extirpated as a nesting species from Tampa Bay. After protective measures, the Laughing Gull population recovered slowly and by 1935 more than 9,000 pairs nested at three sites. Creation of dredged-fill islands during the 1960's and 1970's greatly increased the available nesting area for gulls. This in combination with landfills as a supplemental food resource resulted in the rapid growth of the Bay Area Laughing Gull population. In 1982, approximately 50,000 pairs of gulls nested at six Bay Area colony sites.

ACKNOWLEDGEMENTS

We thank Richard T. Paul and the National Audubon Society for their assistance in some of the colony censuses. The field notes of Brian A. Herrington, Sievert A. Rohwer, and Glen E. Woolfenden provided important observations. Our studies of Laughing Gulls in the Bay Area have benefitted from discussions with Elizabeth and Ralph Schreiber. G. Thomas Bancroft, J. Steven Godley, Wayne Hoffman, Richard T. Paul, Glen E. Woolfenden, and two anonymous reviewers commented on earlier drafts of this manuscript.

LITERATURE CITED

- AMERICAN ORNITHOLOGISTS' UNION. 1983. Check-list of North American birds. Washington, D.C. American Ornithologists' Union.
- COX, G. W. 1976. Laboratory manual of general ecology. Dubuque, Iowa, Wm. C. Brown Co.
- DINSMORE, J. J., AND R. W. SCHREIBER. 1974. Breeding and annual cycle of Laughing Gulls in Tampa Bay, Florida. *Wilson Bull.* 86: 419-427.
- DUTCHER, W. 1908. The Audubon Societies Executive Department, reservation news. *Bird-Lore* 10: 183-194.
- FARGO, W. G. 1926. Notes on birds of Pinellas and Pasco Counties, Florida. *Wilson Bull.* 38: 140-155.
- HOWELL, A. H. 1932. Florida bird life. New York, Coward-McCann, Inc.
- LEHMAN, W. C. 1938. Report on Tampa Bay rookeries. *Fla. Nat.* 11: 46-47.
- LEHMAN, W. C. 1939. Report on Tampa Bay rookeries. *Fla. Nat.* 12: 40.
- LEWIS, R. R., AND F. M. DUNSTAN. 1975. Use of spoil islands in reestablishing mangrove communities in Tampa Bay, Florida. Pp. 766-775 *in* Proceedings of the international symposium on biology and management of mangroves. Vol. II. (G. Walsh, S. Snedaker, and H. Teas Eds.), Gainesville, Florida. Institute of Food and Agricultural Sciences.
- LEWIS, R. R., III, AND C. S. LEWIS. 1978. Colonial bird use and plant succession on dredged material islands in Florida. Vol. II: Patterns of plant succession. Dredged Material Res. Prog. Tech. Rep. D-78-14, Vicksburg, Mississippi, U.S. Army Corps of Engineers.
- MILLS, H. R. 1934. Report on the Tampa Bay rookeries. *Fla. Nat.* 8: 1-4.
- MILLS, H. R. 1937. Tampa Bay rookery system. Third annual report. *Fla. Nat.* 10: 33-34.
- MILLS, H. R. 1939. The log of Whiskey Stump. Sixth annual report of the Tampa Bay Rookery System. *Fla. Nat.* 13: 1-6.
- MILLS, H. R. 1949. Report on the heron and ibis situation in the Tampa Bay and Orange Lake Sections. *Fla. Nat.* 23: 4-9.
- OGDEN, J. C. 1971. Florida region. *Am. Birds* 25: 849.
- PEARSON, T. G. 1907. Florida bird notes. *Bird-Lore* 9: 6-10.
- SCHREIBER, R. W., AND E. A. SCHREIBER. 1978. Colonial bird use and plant succession on dredged material islands in Florida. Vol. I: Sea and wading bird colonies. Dredged Material Res. Prog. Tech. Rep. D-78-14, Vicksburg, Mississippi, U.S. Army Corps of Engineers.
- SCHULTZ, F. W. 1936. Tampa Bay warden's report. *Fla. Nat.* 9: 79-81.
- SCOTT, W. E. D. 1887. On the present condition of some of the bird rookeries of the Gulf Coast of Florida. *Auk* 4: 135-144; 213-222; 273-284.
- SCOTT, W. E. D. 1888. A summary of observations on the birds of the Gulf Coast of Florida. *Auk* 5: 373-379.