



Terns of Florida¹

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Terns are enjoyed by millions of people who flock to Florida's beaches. Although only adorned with various shades of black and white feathers, terns are beautiful birds. They are in the same taxonomic family, Laridae, as gulls. This means they share some common physical and behavioral characteristics. For example, gulls and terns have webbed feet and usually nest on the ground and near water. Terns differ from gulls in that they have narrower pointed wings, forked tails, pointed bills, and slimmer bodies. Their bill is often aimed downward as they fly and hover in search for food. Of the 16 species of terns in North America, 12 can be seen in Florida.

Movement Patterns and Regions within Florida

Although there are exceptions, each tern species follows a general pattern of migration and occurrence in Florida. Some terns, such as the Caspian (*Sterna caspia*), Royal (*Sterna maxima*), Sandwich (*Sterna sandvicensis*), and Roseate (*Sterna dougallii*), are in Florida year-round. Sooty (*Sterna fuscata*), Gull-billed (*Sterna nilotica*), and Least (*Sterna antillarum*) terns spend only the nesting season (March - August) in Florida and migrate south for the winter. Others, including the Bridled (*Sterna*

anaethetus), Forster's (*Sterna forsteri*), Common (*Sterna hirundo*), and Black (*Chlidonias niger*) terns, nest north of Florida and winter here. The Arctic Tern (*Sterna paradisaea*) nests in the arctic tundra and winters in South America. We only get a chance to see these migration record-holders as they pass through heading north in May and south in September.

Within Florida, some species are restricted to certain regions of the state (Table 1). The only known nesting colony of Sandwich Terns is located in the Nassau Sound near Jacksonville. Florida is the southeastern breeding limit for the Caspian Tern which nests in the Panhandle and central Florida coastal areas. Royal Terns nest in several places along the coast except extreme south Florida. Roseate and Sooty terns nest only in the Keys and Dry Tortugas. Other terns nest statewide.

Food and Feeding Habitat

Although fish is the main food item for most terns, their diet can still be very diverse. For example, Sooty Terns have been found to prey upon about 75 different species of fish and squids. Insects are also important for several terns. Some specialize on other edibles such as fiddler crabs, squid, shrimp, bird eggs, and crustaceans when they are available.

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The characteristic feeding behavior of most terns is to fly over water in search of food items at or near the surface. Sometimes they stop and hover to get a better look and then tuck their wings back and dive into the water to catch the prey with their bill. However, Gull-billed, Sooty, and Bridled Terns do not dive. Some species restrict their feeding to shore or offshore areas in the ocean or gulf and others will

forage almost anywhere including agricultural fields for insects.

Nesting

Terns typically nest in open areas with sparse, short vegetation. Their nests consist of shallow depressions in the sand or eggs are merely laid on the surface of more solid substrates such as rocks, crushed shells, or gravel. Sometimes plant material may be added to the nest.

Because of the limited availability of suitable, undisturbed, natural nesting habitat, some terns have resorted to nesting on human-made structures such as rooftops and spoil islands. Least Terns were first reported nesting on gravel-covered roofs in Florida in 1957. Now in some areas of Florida, Least Terns nesting on roofs outnumber those on the ground. Since 1973, almost all Least Tern nests in the mainline Florida Keys have been on these artificial substrates.

The unevenly dark brown blotches on whitish to buff colored tern eggs makes them well camouflaged on sandy areas. Sooty and Royal Terns typically lay only 1 egg; other terns lay 2 to 3 eggs. If a storm or other event destroys the first nest of a season, some terns may re-nest with fewer eggs. Incubation usually takes 3 to 4 weeks and terns hatch with a coat of soft downy feathers. Although they can walk shortly after hatching, young terns usually stay in or close to the nest for the first few days. They are fed regurgitated food by the parents and can fly after about a month. Sooty Terns develop slower than most other terns and do not fly until about 2 months of age. Typically only one brood is raised each year.

Threats

Many natural and human-caused events have adverse impacts on terns. Any species that nests along Florida's coasts is subjected to severe summer storms. Strong winds and flooding can easily destroy one year's worth of reproductive effort for a tern colony. This can cause most serious consequences for species such as the Sooty Tern that nest only in one location in Florida.

Vegetational succession on nesting sites is another natural problem for terns. Terns prefer to nest on beaches that are in early stages of vegetational development. As natural succession takes place, vegetation may become established on bare areas and grow thicker and taller making a site unsuitable for terns. Natural predators such as Fish Crows (*Corvus ossifragus*) and Raccoons (*Procyon lotor*) can sometimes be a major cause of mortality.

Human-caused problems started with egg collectors and plume hunters. By 1900, they had significantly reduced several tern populations. Human-associated animals or non-native predators such as cats, dogs and Roof Rats (*Rattus rattus*) have prevented entire colonies from producing any young.

Conversion of natural beaches into residential and commercial development is displacing terns and other beach-dependent animals. Florida's coastal areas support the highest human density and greatest development of any habitat in the state. Because relatively few good-quality habitats remain, the number of terns nesting in the state has decreased.

The Least Tern, the smallest North American tern, is listed by the Florida Fish and Wildlife Conservation Commission (FWC) as threatened. The Roseate Tern is listed by the FWC and the U.S. Fish and Wildlife Service as a threatened species.

Conservation Measures

The first and one of the most essential steps toward conserving tern populations is to locate all potential and existing nesting colonies. Although many traditional sites are used year after year, some colonies change nest sites from one year to the next. Once these areas are located, conservation measures can be employed to protect and enhance them.

The few remaining natural beaches need to be preserved. These are the habitats that have historically provided food and nesting requirements for terns. Natural beaches can be protected through purchase, easements, and regulation. Some tern nesting sites that are threatened by human disturbance have been designated as Critical Wildlife Areas where trespass is prohibited.

Storms help to maintain beaches for terns and other beach species by naturally preventing vegetation from becoming too dense and tall. However, storm occurrence is not regular and dependable. Vegetation on sites that are otherwise suitable (that is, sites with relatively low disturbance and predation problems) can be maintained by mechanically scraping the surface every few years. This should be done when terns or other species are not present.

Another management activity that enhances nesting opportunities for terns is the creation of spoil islands. Terns seem to be using these islands more and more as natural beaches become less suitable. One advantage of these islands is that predation from non-native species is often not a threat. Because spoil islands are accessible by boats, human disturbance can still present a problem. Human activity on spoil islands where terns are nesting should be prohibited during the nesting season. Vegetation also needs to be scraped off every few years when the birds are not present.

The percentage of Least Tern eggs in rooftop nests that hatch has been found to be at least as high as the hatching success of eggs from ground nests. However, there are many hazards on roofs for young chicks. Some have fallen into gutters and over roof edges, gotten stuck in melted roof tar, killed by gulls and other predators, and suffered heat exposure. Methods to prevent or reduce some of these perils include fencing gutters and roof edges and placing hollowed-out cement blocks at various locations on the roof for escape cover.

Because biologists do not know everything about tern biology and behavior, population studies and monitoring must continue to find the best conservation measures to employ in our changing environment.

What You Can Do

If terns are to persist as part of the natural integrity of Florida's coastal areas, Florida residents need to take an active role in the conservation of these species. Concerned people can: encourage local community officials to address habitat needs of terns and other beach-dwelling wildlife as well as the needs of passive recreationists who enjoy bird watching, nature photography, or just hiking and observing nature; join and financially support one or more private conservation organizations that actively promote the preservation and conservation of beach habitats; support efforts and programs of agencies such as the "Critical Wildlife Areas" program of the Florida Game and Fresh Water Fish Commission and other programs of the Florida Department of Environmental Protection that focus on beach habitat conservation; visit state parks on beaches to demonstrate the need for preservation; and buy hunting and fishing licenses (even if you don't participate in these activities) to help fund conservation efforts.

Predators, especially dogs and cats, of tern eggs and young can destroy entire colonies. Keep your pets off existing and potential nesting areas and encourage others to do the same.

Assist biologists in monitoring nesting populations by reporting colonies to your local Florida Fish and Wildlife Conservation Commission office (see state government agency section in your phone book).

Nuisance Problems

Roof-nesting terns occasionally become nuisances when they dive-bomb people who get too close to their nests. This defensive behavior can be very threatening to some people who do not understand the reason for these assaults. A large colony of terns can also deposit many droppings on cars in nearby parking lots.

Prevention is the major key to solving this problem. Once a colony has become established, nothing can be done legally to remove the terns. If attempts are made to destroy or remove the eggs, the terns will persistently re-nest which will result in

actually extending the period of undesirable behaviors for much longer than the normal 1 to 2 months.

Several steps can be taken to make a rooftop less desirable to terns. Because they prefer to nest on light-colored substrates, painting gravel roofs black or dark green should make them less suitable. Some success also has been achieved by placing several helium-filled balloons with large eyes painted on them at different locations on the roof. Or, plastic flags like the ones used by automobile dealers can be draped over clotheslines stretched across the roof.

Concerned building owners who try to discourage tern-nesting should be encouraged to mitigate this loss of potential nesting habitat by taking some positive actions to encourage nesting elsewhere (see previous sections on **Conservation Measures** and **What You Can Do**).

Legal Aspects

Several federal and state laws protect terns from various human activities. The federal Migratory Bird Treaty Act states that it is unlawful to pursue, hunt, capture, kill, possess for sale, purchase, deliver for shipment, cause to be exported, any migratory birds including their eggs, nests, and body parts.

The Roseate Tern is listed by the U.S. Fish and Wildlife Service under the Federal Endangered Species Act as a threatened species thereby prohibiting taking, possession, sale, and transport.

Terns that use designated Critical Wildlife Areas are protected by Florida Administrative Code 39-19.005 that states it is illegal to take or disturb any wildlife, enter or operate a vehicle, or knowingly allow a dog under your care within any Critical Wildlife Area.

Roseate and Least Terns are listed by the Florida Fish and Wildlife Conservation Commission (FWC) as threatened species.

Suggested Readings

Bent, A.C. 1986. *Life histories of North American gulls and terns*. Dover Publications, Inc. 337 pp.

Gore, J.A. 1991. "Distribution and abundance of nesting least terns and black skimmers in northwest Florida." *Fl. Field Nat.* 19:65-72.

Gore, J.A. and M.J. Kinnison. 1991. "Hatching success in roof and ground colonies of least terns." *The Condor* 93:759-762.

Hovis, J.A. and M.S. Robson. 1989. "Breeding status and distribution of the least tern in the Florida Keys." *Fl. Field Nat.* 17:61-66.

Kale, H.W. II and D.S. Maehr. 1990. *Florida's birds*. Pineapple Press, Sarasota. 288 pp.

Table 1.

Table 1. Florida's terns.					
Species	Region ¹	Feeding Habitat ²	Food ³	Nest in Fl. ⁴	Nesting Habitat ⁵
Gull-billed	P,N,C,S	S,Sm,Fm,Ag	*,I,F,Fc	yes	B,Sm,E,L
Caspian	P,C	S,O,L	F,Sr,E	yes	B,Si
Royal	P,N,C	S,O	F	yes	B,Rt,Si
Sandwich	P,N	S,O,Sm	F	yes	B,Si
Roseate	K,Dt	S,O	F	yes	B,Rt
Sooty	Dt	S,O	*,F,I,Sq	yes	B
Least	P,N,C,S	S,Sm,O,L,Fm,Ag	F,I	yes	B,Si,Rt,L
Common	P,S	S,O,Sm	F	no	--
Arctic	P,N,C,S	S,O	F	no	--
Bridled	N,C,S	S,O	*,F,I	no	--
Forster's	P,N,C,S	S,O,Sm,Fm,L,Ag	I,F	no	--
Black	P,N,C,S	S,O,Sm,Fm,L,Ag	I,F,C	no	--
¹ Region: P=Panhandle, N=North Florida, C=Central Florida, S=South Florida, K=Keys, Dt=Dry Tortugas					
² Feeding Habitat: S=Shore (saltwater), Sm=Saltwater marsh, Fm=Freshwater marsh, O=Offshore (saltwater), L=Lakes, Ag=Agricultural lands					
³ Food: *=Rarely dives (feeds on water surface or on land); I=Insects; F=Fish; Fc=Fiddler crabs; Sr=Shrimp; E=(bird) Eggs; Sq=Squid; C=Crustaceans					
⁴ Nest in Fl.: yes=nest regularly, no=few or no nesting records					
⁵ Nesting Habitat: B=Beaches, bays, and estuaries; Sm=Salt marshes; E=Everglades; L= Lakes, ponds, rockpits, mines, impoundments, rivers, and canals; Si=Spoil islands; Rt=(flat-gravel) Rooftops					