

Working on Roofs (Least terns and Black skimmers)

Least Tern



The Least Tern (*Sterna antillarum*) is listed as a threatened species by both the USFWS and the FGFWFC. The interior Least Tern is the smallest member of the gull and tern family, measuring 8-9 inches (20-23 cm) long and having a 20-inch (51-cm) wingspread. Males and females appear identical with a black crown, white forehead, gray back, gray wings above with white below, orange legs and a black-tipped yellow bill. Immature birds have darker feathers, a dark bill and dark eye stripes on white heads.

The interior Least Tern arrives in Florida from their South American wintering grounds each year from mid-March through April. It nests in small, loosely defined groups on barren beaches of sand, gravel or shells, on dry mudflats and salt-encrusted soils (salt flats) and at sand and gravel pits along rivers. Nesting success depends on the presence of bare or nearly barren sandbars, favorable water levels during nesting, and abundant food.

The nest is an inconspicuous, unlined scrape usually containing 2 to 3 brown, spotted eggs. Egg laying and incubation occur from late May through early August. Eggs hatch in about 20 days and chicks are fledged in about another 20 days. The interior Least Tern feeds on small fish and crustaceans taken by diving from the air into shallow water. During the breeding season, these birds usually feed within a few hundred meters of the nesting colony.

Least Terns utilize their colony sites year after year; however, colony sites are occasionally abandoned by terns due to a variety of factors. Although some vegetation is beneficial as cover for mobile chicks, colonies will abandon sites that become too vegetated. Other factors that are correlated with abandonment are human disturbance, presence of mammalian predators, and flooding. Of these, human disturbance is probably the factor most responsible for recent declines. Human-caused disturbances can exacerbate many of these problems, which increases the rate of turnover and decreases the reproductive success of colonies. The same areas that these birds value for nesting habitat are unfortunately the same areas humans value for recreational activities. Human intrusion along beaches, lakes, and streams reduces the available nesting area for these birds. For this reason, the Least Tern has adapted their nesting habits to colonizing flat, graveled rooftops, which are generally free from humans and other predators.

Black Skimmers



The Black Skimmer (*Rynchops niger*) is listed as a species of special concern in Florida by the FGFWFC. The Black Skimmer measures up to 18 inches long and has a 40-inch wingspread. Males and females appear identical with black upper parts, white cheeks and neck, red feet, and a red, black-tipped bill. The bill is unique in that the lower half of the bill is longer than the upper. Immature birds are browner and more mottled above.

The Black Skimmer resides year round along Florida's coastlines, however these numbers may increase in winter due to an influx from northern portions of the bird's breeding range. The Black Skimmer generally breeds from May through September nesting in large colonies, often with other tern species. Like the Least Tern, it nests on barren beaches of sand, gravel or shells, on dry mudflats and salt-encrusted soils (salt flats) and at sand and gravel pits along rivers.

The nest is an inconspicuous, unlined scrape usually containing four to five eggs. Egg laying and incubation occur from late May through early August. Incubation lasts about three weeks with both sexes participating. The chicks can fly about one month after hatching. The Black Skimmer feeds on small fish and shrimp taken by skimming along the surface of the water and snatching their prey with a quick downward snap of their bill. During the breeding season, these birds will travel up to 5 km from the colony site in search food.

Roof-nesting

With the loss and degradation of natural colony sites, the Least Tern has adapted to nesting on gravel rooftops. Nesting on rooftops was first reported in Pensacola, Florida, and has since become widespread throughout the state. By 1975, 21% of the colonies along Florida's Atlantic coast occurred on roofs. Several studies have shown that roof colonies have higher reproductive success than do nearby beach colonies; this may reflect superiority of the roof environment or the degradation of existing ground colonies. Roof colonies have been reported typically to be larger than ground colonies, and colony size is correlated with reproductive success. There is some evidence that populations have stabilized recently, perhaps due to increased roof nesting offsetting losses at ground colonies.

Likewise, the Black Skimmer has also adapted to nesting on rooftops. Although they are primarily beach nesters, small numbers of Black Skimmers attempt to nest on roofs in a few locations in Florida each year. Roof nesting Black Skimmer colonies are usually small and have low nesting success when compared with beach colonies.

There are many hazards to eggs and young of roof nesting birds. High winds can blow eggs out of scrapes where they may be abandoned by parents, or blow eggs completely off roofs. Parents attempting to return them to their nests may also damage eggs blown out of nests. Heavy rains can flood nests and wash eggs and chicks off roofs. Chicks can become trapped in gutters or washed down drain spouts. Chicks may also stick to exposed tar and die of exposure. Chicks that fall off roofs and survive face the threat of ground predators or being crushed by vehicles if adequate shelter is lacking.

Humans entering rooftop colonies can cause chicks to run off the edges and parents to fly off scrapes leaving nests exposed; repeated intrusion may cause the colony to be abandoned. Roof repairs during or just prior to nesting season disrupt colonies and may cause them to be abandoned. Human disturbance at colonies increases stress on parents, increases intraspecific aggression rates, and exposes chicks to aggression from adults when they wander into adjacent territories. Recently, many tar and gravel roofs are being resurfaced with smooth plastic material that is unsuitable for tern nesting. This results in a further decrease in available nesting habitat.

Several factors make roof nesting more difficult for Black Skimmers than for Least Terns. These include:

1. Black Skimmers are more sensitive to human disturbance than are Least Terns. When disturbed, they typically take longer to return to nests. This exposes their nests to predators for long periods of time and may contribute to the low reproductive success on roofs. They may also be more likely to abandon colony sites than are Least Terns.
2. Black Skimmers make deeper scrapes than Least Terns. This may expose the eggs of roof nesting Black Skimmers to tar. It may also be that the adults cannot dig an adequate scrape on roofs and that they crush their eggs beneath their bodies while incubating. The shallower scrape combined with a larger egg size make the Black Skimmer's eggs more susceptible to being blown out of the nest.

Requirements

Least Terns and Black Skimmers nest on roofs surfaced with tar and gravel (pea-rock or shell) with roof slope varying from none to slightly pitched. The buildings utilized by these birds range in height from one to six stories high and range in roof area from tens of square meters to a few hectares. Any nesting activity at a building should result in the rooftop becoming immediately off-limits, except for safety or maintenance emergencies. Disturbance to the colony is the factor most likely to cause colony failure and abandonment; it is also the easiest to eliminate.

Humans entering rooftop colonies can cause chicks to run off the edges and parents to fly off scrapes leaving nests exposed; repeated intrusion may cause the colony to be abandoned. Roof repairs during or just prior to nesting season (March-July) disrupt colonies and may cause them to be abandoned. Human disturbance at colonies increases stress on parents, increases interspecific aggression rates, and exposes chicks to aggression from adults when they wander into adjacent territories. It is recommended that no persons access the rooftop during colony-site selection and nesting season (between mid March and late July).

If it is necessary to access a roof with an active nesting colony, it is important that disturbance to the birds is minimized. If an emergency warrants entry onto the rooftop, a staff biologist should be consulted and should accompany the workers onto the roof to insure that colony disturbance is kept to a minimum. The number of persons accessing the roof should be minimized, as should the duration of time spent on the roof. One long visit may cause less overall disturbance than several shorter duration visits. Early morning (before 10:00 AM) or evening (after 4:00 PM) access will minimize the stress on nesting adults and young that might result from heat during mid-day. Visits should be limited to the edges of the roof away from the colony as much as possible.

There are several improvements that could be made to buildings on which these birds are nesting that would enhance the birds nesting success rate:

1. Roof edges. A lip or parapet on the edge of a roof prevents eggs and chicks from washing or blowing off the edge, and it deters mobile chicks from running off the edge. A 15-30 cm lip is sufficient protection for eggs and chicks. If there is no lip or parapet on a building, a suitable lip can be made from hardware cloth bent into an "L" shape. The screen can be secured to the roof with 2 x 4s or cinder blocks, or could be permanently attached to the roof or the side of the building. A 1.3 cm mesh size is optimal (any larger and chicks might fit through; smaller mesh has more wind resistance).
2. Shade and shelter. Although roofs are generally cooler than beach nesting habitat, the lack of shade and cover can be a serious problem. Cover protects chicks from predators and provides shade during the heat of the day. Some roofs have many structures that provide for these needs while others have almost no cover. A simple solution is to place a few cinder blocks on top of the roof.
3. Drainage system. Many chicks are killed when they are washed off of roofs through drainage pipes or openings. It is not difficult to provide screens for drains that prevent this from occurring. Screens should be of 1.3 cm or less mesh size. It is important that screens be cleaned prior to nesting season to prevent flooding that could drown eggs and chicks.

Another consideration is the location and condition of feeding areas for the colony. Least Terns and Black Skimmers catch small fish in fresh or saltwater near the colony location. Often the birds will fish in retention ponds located near the colony building. The quality and quantity of water in these ponds may be crucial to the health of the adults and their offspring. If pollution from runoff contaminates these ponds, toxins may accumulate in the bird's tissues, possibly resulting in lowered nesting success, abnormal development of young, or even death of the adults. If the retention ponds were drained during nesting season, this would eliminate a crucial resource for the nesting birds. Therefore, it is important to consider potential impacts to waters in which these birds forage.

References:

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