

CONTENTS

INTRODUCTION TO TERNs AND SKIMMERS 1

What's Included 1

Taxonomy 1

Identification 2

Life History 13

Migration 14

Conservation 15

How to Use This Guide 15

SPECIES ACCOUNTS 19

LARGE TERNS: GENUS *HYDROPROGNE* 20

CRESTED TERNS: GENUS *THALASSEUS* 27

TRICKY *THALASSEUS* 55

UPLAND TERNS: GENUS *GELOCHELIDON* 62

MEDIUM-SIZED TERNS: GENUS *STERNA* 71

STERNA TERN IDENTIFICATION 116

LITTLE TERNS: GENUS *STERNULA* 126

MARSH TERNS: GENUS *CHLIDONIAS* 134

PELAGIC TERNS: GENUS *ONYCHOPRION* 151

NODDIES: GENUS *ANOUS* 175

SKIMMERS: GENUS *RYNCHOPS* 187

ANSWERS TO QUIZ PHOTOS 197

BIBLIOGRAPHY 198

INDEX 202



ELEGANT TERN 7 Nonbreeding (basic) adult with Royal Tern. Sept., CA. The tremendous variability crested terns show in the amount of black in the outer primaries obscures any differences in wing pattern between Royal and Elegant Terns. Elegant Tern does tend to show a larger, more obvious, translucent inner-primary window. Elegant Tern's typical flight call, much shorter than that of Royal and lacking the rolling quality, is one of the best ways to identify it in flight, along with its faster, snappier wingbeat. Also note the distribution of black on the head in relation to the eye.

ELEGANT TERN 8 Nonbreeding (basic) adult with Royal Tern. Sept., CA. In direct comparison, there is no comparison, though at times Elegant Terns can hide in tightly packed flocks of Royal Terns. While size and bill structure render most other distinctions moot, note how the bill color fades from orange to yellowish on the Elegant Tern, versus the more uniform bill on the Royal Tern, and how the entire top of the head is white on the Royal Tern compared to the mostly black-capped Elegant Tern. Elegant Tern shows particularly evident sexual dimorphism in bill length and shape, with males being longer-billed and showing the more "classic" Elegant Tern shape. This bird appears short-billed, with a bill shape more reminiscent of a small Royal Tern, and so it is likely a female.



ELEGANT TERN 9 Immature (likely second-cycle). Sept., CA. The decurved bill of Elegant Tern is often more noticeable in flight than when on the ground. While most North American crested terns have a dark wedge in the outer primaries in the late summer and fall, the situation with Elegant Tern is more complex. Due to their lengthy migration to South America, adult Elegant Terns in fall often show a narrow dark wedge three-quarters of the way along the primaries, while the surrounding inner and outermost primaries are contrastingly pale. The pattern shown by this individual, which would be typical of a fall adult Royal Tern, indicates an immature Elegant Tern, while an adult Elegant Tern would have pale outermost primaries and dark central primaries.



ELEGANT TERN 10 First-cycle (left) compared with first-cycle Royal Tern (right). Sept., CA/Oct., NJ. Notice the pale inner-primary window on the Elegant Tern that breaks up the dark trailing edge, as opposed to the entirely dark hand and continuously dark trailing edge of the Royal Tern. This trait is most useful in fall, as by midwinter, some worn immature Elegant Terns can show a pattern similar to a fall Royal, while as Royal Terns begin to replace inner primaries, the new pale feathers break up the dark trailing edge, creating a pattern similar to immature Elegant Terns. Adult Elegant Terns also show a translucent inner-primary window that adult Royal Terns lack, but the distinction is much more obvious on first-cycle individuals.



ELEGANT TERN 11 Breeding (alt.) adult.
March, CA. Tom Ford-Hutchinson.

The crest is irrepresible! Like Sandwich Tern, Elegant Tern individuals can have a faint pink blush on the underparts that varies year to year depending on the food resources available. Adult Elegant Terns are also more prone than other crested terns to show colorful blotches on their black legs, although all crested tern species show this trait occasionally.

ELEGANT TERN 12 First-cycle.
Sept., CA. Recently fledged individuals have pale gray primaries, but the outer primaries quickly wear until they are dark. Like those of any recently fledged tern, the primaries are not yet full length, altering the appearance to a more rounded wing profile. The bill is also not fully grown and is shorter and thicker than that of an older bird.



ELEGANT TERN 13 Nonbreeding (basic) adult with a Sandwich Tern. Nov., Peru. Elegant Tern is slightly, but noticeably, larger than Sandwich Tern, and the difference in the length of the bill in these two individuals is dramatic, though the length of the bill in the shortest-billed female Elegant Terns is more comparable to that of Sandwich Terns.

SPECIES INFO In addition to its lengthy multisegmented migratory movements, Elegant Tern is also notable in that roughly 90% of the global population breeds in a single location: Isla Rasa in the Gulf of California. This reliance on a single primary breeding site does represent a distinct risk, as any disaster or ecological changes on Isla Rasa could devastate the species. Interestingly, beginning in about the year 2000, a tiny but growing number of Elegant Terns has turned up in Sandwich Tern colonies in western Europe every year, pairing sometimes with other vagrant Elegant Terns and sometimes with Eurasian Sandwich Terns. They have been found rarely in the eastern U.S. as well, and there is one record of hybridization with Sandwich Tern (in Florida). There are also records of Elegant x Sandwich Tern hybrids in southern California, and some birds breeding at Isla Rasa show traits that indicate hybridization may have occurred there as well.

ELEGANT TERN 14 Juvenile. July, CA. Marquette Mutchler. Lacking a size comparison, this juvenile Elegant Tern has very few traits that separate it from a juvenile Royal Tern. Note particularly that this bird has an almost entirely white crown like a Royal Tern. The two inner primaries are pale gray, though—a useful trait to separate first-cycle Elegant and Royal Terns in the fall.





ELEGANT TERN 15 Adults with Heermann's Gulls. Aug., CA. Jerry Ting. The variability Elegant Terns show in bill coloration and shape is tremendous. Notice that several have bills that are mostly orange or yellow-orange, and the two-toned effect is quite subtle. Also, some have bills that are shorter and not as curved (females), which makes them appear slightly thicker. These traits serve to make such individuals less distinct from Royal Terns than might be expected. As both species are often seen together in southern California and are easily separated, if careful attention is paid, the variability can easily be downplayed. But what about a vagrant Elegant Tern or an individual seen on its own with no comparison? These beasts vary greatly and the next one you encounter may not be "classic."

ELEGANT TERN 16 Juvenile and adults. Sept., CA. With adults to compare it to, it is easy to identify this worn juvenile Elegant Tern. But note the white crown and the bill shape that is still developing and is quite like that of a Royal Tern in shape, if not size.



PLUMAGE INFO Like most crested terns, Elegant Tern sports a full black cap for only a short period, arriving on the breeding grounds in March with it already in place and beginning to lose it by May or early June. Many show a rosy blush to the chest, mostly in spring, but some throughout the year.

From midsummer onward, adults wear nonbreeding plumage. As juveniles often accompany adults in post-breeding dispersal, juvenile and other immature plumages can be observed far north of the breeding colonies, and not just in the southern California and Gulf of California strongholds.

ELEGANT TERN 17

Juvenile. July, CA. Jerry Ting. Again, without a size comparison, this juvenile Elegant Tern looks essentially identical to a juvenile Royal Tern, particularly as it is extremely pale-headed but has a heavily marked back. On average, juvenile Elegant Terns are less heavily marked than juvenile Royal Terns.



SANDWICH TERN (NORTH AMERICAN SANDWICH TERN)

Thalasseus sandvicensis

L 13.5–14.5 in.; WS 34–36 in.; WT 7.3–10 oz.

SIZE AND STRUCTURE Significantly larger than Common Tern and significantly smaller than Royal Tern, about the same size as Gull-billed Tern—a lean tern teetering between elegantly slim and appearing to need a cheeseburger or two. The bill is long and extremely slender, a straight peg stuck on the face. In flight, Sandwich Tern gives a lean but balanced or slightly front-heavy impression, with the slender wings centered on the body and held straighter than those of Royal or Gull-billed Terns.

BEHAVIOR Like Royal Tern, it sometimes forages well offshore, but does not venture quite as far into pelagic waters as Royal Tern. Sandwich Tern is most often seen patrolling back and forth, paralleling the beach within easy binocular view, or loafing on the shore in mixed groups with Royal Terns. These groups of crested terns often seem to have preferred loafing areas, with flocks returning again and again to the same area after being disturbed, despite the specific patch of

SANDWICH TERN 1 Breeding (alt.) adults. April, TX. A striking, slender crested tern with a slim bill tipped in yellow. Unlike Elegant Tern, the crest is inconspicuous unless flared, as on this pair. Notice the variation in the amount of yellow on the tips of the bills.

sand appearing no different from any other. Like Royal Tern, Sandwich Tern also disperses northward coastally after the breeding season. Sandwich Terns disperse in much smaller numbers than do Royal Terns, usually in singles and pairs by the time they reach the northern Mid-Atlantic—sometimes an adult accompanied by a begging juvenile.

FLIGHT Wingbeats are strong and quick, noticeably faster than those of Royal Tern, with a slightly jerky quality compared to the smooth and effortless wingbeats of Royal Tern. At a distance, the yellow tip of the bill is often invisible, making the bill appear shorter and heavier in flight or when pointed downward while foraging.

CALL Harsh, scratchy *keerikRIK*. The first part is slightly rolling, and the emphasis is on the second syllable, which is higher and clearer. Overall, it lacks the far-carrying quality of the vocalizations of Royal Terns. Both the first and second syllables of the call can be given individually, or strung together in a quick series. The harsh, argumentative quality of the vocalizations means that when large groups are chattering together, the resulting ruckus has the quality of bickering children in a busy schoolyard.





SANDWICH TERN 2 Breeding (alt.) adults with Royal Terns and American Avocets. April, TX. Most frequently in spring (far more rarely at other times of year), some individuals show a light to moderate pink blush on the underparts, adding extra flair to an already beautiful bird. Among crested terns, Elegant Tern also shows this trait but seems to lack the strong seasonality of Sandwich, whereas it is quite rare in Royal Tern and typically faint when present. Of course, Roseate Tern shows a pink flush most consistently, but pink plumage is otherwise extremely rare in other North American terns. The subtle shade of pale pink shown by terns is a color that photos rarely fully render, so expect terns in the field to appear pinker than in photos.

SANDWICH TERN 3 Breeding (alt.) adults with Royal Terns, Black Skimmer, and Sanderling. April, TX. Sandwich Terns often gather in mixed flocks with other coastal waterbirds, particularly Royal Tern. Such groups provide the perfect opportunity to fix comparative sizes between species in your mind, to note individual variations, to compare vocalizations, and to pick out subtle structural differences, such as how the very straight bill of Sandwich Tern accentuates the flat crown.



SANDWICH TERN 4 Breeding (alt.) adult. May, FL. The wings are typically held straighter than those of Royal Tern, and are quite narrow and centered on the slim body. Sandwich Tern often tilts its bill downward when foraging, straight down at times, whereas Royal Tern typically holds its bill pointed straight forward.



SANDWICH TERN 5 Breeding (alt.) adult with Royal, Common, and Forster's Terns; Black Skimmer; Laughing Gulls; American Oystercatcher; and Sanderling. April, TX. Sandwich Tern is intermediate in size between the *Sterna* terns and large species like Royal Tern. When compared to other species, the lean body and angular wings are particularly evident. *How many Common Terns and how many Forster's Terns can you find in this image?*

RANGE Sandwich Tern is a year-round resident in most of Florida and the western Gulf Coast, is a breeder on the central Gulf Coast and along the Atlantic coast north to the Chesapeake Bay, and, in post-breeding dispersal, occurs in very small numbers north to Long Island, rarely farther north to Atlantic Canada. Very rare in southern California, where there are multiple records, but these records may pertain only to a few individuals. Has interbred with Elegant Tern there on two known occasions. May be blown inland by tropical storms, though not as frequently as Royal Tern. **World:** Coastally widespread in Europe, Africa, and southwestern Asia (Eurasian Sandwich Tern); the Caribbean and eastern coast of South America (Cayenne Tern); and Mexico, Central America, and northern South America.

SPECIES INFO An entirely coastal species, and the only black-billed member of the crested terns. Current North American taxonomy considers Sandwich Tern a single species with three subspecies: *T. s. sandvicensis* of Europe, Africa, and the Middle East; *T. s. acuflavida* breeding in North America; and *T. s. eurygnathus* breeding in the Caribbean and South America. However, the taxonomic position that prevails over most of the world splits nominate *T. s. sandvicensis* from the New World forms and gives the New World forms the name

Cabot's Tern, while Eurasian birds retain the common name Sandwich Tern. To make things more complicated, the name Cayenne Tern is frequently given to *T. s. eurygnathus*, which has a completely yellow bill and intergrades with *T. s. acuflavida* where they come in contact in the Caribbean. Some genetic studies have suggested the difference between *T. s. acuflavida* and *T. s. eurygnathus* is not sufficient to warrant an additional split, while other authors have treated Cayenne Tern as its own species. The situation is not yet settled, but the most likely result is that North American Sandwich Tern (Cabot's) will be considered a separate species from Eurasian-distributed Sandwich Tern, while the ultimate treatment of Cayenne Tern is still very clouded.

PLUMAGE INFO All plumages are seen frequently. Like other crested terns, Sandwich Tern holds a full black cap only fairly briefly—March to May or June typically, February to July in some. A midsummer molt of the cap results in an individually highly variable “chick-feeding” plumage, a midpoint between the full black cap and the largely white crown. It is hypothesized that the variable black-and-white checkered pattern that results serves to make it easier for chicks, often gathered in crèches, to identify their parents when they return to feed their young.



SANDWICH TERN 6 Nonbreeding (basic) adult. Sept., GA. For most of the year, adults have largely white heads, nearly identical to the head pattern of Royal Tern in nonbreeding plumage. From winter through spring, or until midsummer on some individuals, the primaries are pale gray, matching the gray back, whereas in the fall, the folded primaries are almost entirely blackish.



SANDWICH TERN 7 Nonbreeding (basic) adult. Jan., FL. The only black-billed crested tern, although, particularly in nonbreeding plumage, Sandwich Tern barely lives up to its “crested” name, as the crest is more like an inconspicuous cowlick. Notice how the body compresses laterally in from the shoulder to the belly, so it is almost V-shaped. No other tern of similar size has such a slender body.



SANDWICH TERN 8 Nonbreeding (basic) adults. Sept., GA. All crested terns show species-specific tendencies in the pattern of black on the head in nonbreeding plumage. These tendencies are further subject to significant individual variation, as shown by these Sandwich Terns. Nonbreeding Sandwich Terns average less black on the head than either nonbreeding Elegant or Royal Terns—significantly less than Elegant but overlapping with some Royal Terns.

SANDWICH TERN 9 Immature (first-summer type) with Royal Tern. July, FL. While Sandwich Tern approaches Royal Tern in overall length, the differences in bill depth, head size, and body size are obvious at any distance. The primaries on this particular Sandwich Tern are fresh, not worn nor as blackish as adult Sandwich Terns in midsummer (or the Royal Tern behind), and on the opposite wing, you can see that the outermost primary is growing in. This molt timing suggests that this is an immature bird, probably a year old, even though the overall appearance is like that of an adult.





SANDWICH TERN 10 Juvenile. July, FL. Recently fledged juveniles often have yellow or orange bills and bare parts. Usually these have turned black by the end of August, but some have colored splotches on the legs until October or later, and occasionally adults will also show patches of color on the legs. Note the dark markings on the scapulars and bold dark centers to the tertials.

SANDWICH TERN 11 Juvenile and adult (chick-feeding plumage) with Royal Tern. July, FL. The speckled crown of the adult is a briefly held appearance called the “chick-feeding plumage” that coincides with the period when juveniles have recently fledged. The plumage and leg color of juvenile Sandwich Terns are identical to those of juvenile Royal Terns (compare the bird behind the adult Sandwich Tern). The bill and leg color on recently fledged birds is orange or yellow, gradually becoming black over the first few months of life.





SANDWICH TERN 12 Nonbreeding (alt.) adults and first-cycle with Black Tern. Aug., FL. The bill shape of the first-cycle bird (the rightmost in the first line of birds, with orange on the bill) is shorter and therefore appears thicker than those of the adults. While the bill of first-cycle birds is usually fully black by September, it takes months for it to develop the shape of an adult bill. Some can show a slight yellow tip as soon as October, though January is more normal, and many first-cycle birds do not develop it until the following spring. Like all first-cycle crested terns, it has extensive dark centers to the tertials, though these fade and are replaced within a few months by fresh tertials with more subtle dark centers.

SANDWICH TERN 13 First-cycle with Royal Tern, Black Skimmer, and Laughing Gull. Sept., GA. The lack of the yellow tip and the shorter, thicker shape give the bill of first-cycle birds an appearance that is somewhat like that of Gull-billed Tern for several months in the fall and early winter, until the bill begins to look more like that of the adult Sandwich Tern. The different pattern of black on the head and the dark-centered tertials are the primary points of separation from Gull-billed at this age.





SANDWICH TERN 14 Immature (first-cycle > second-cycle). May, FL. Typical of first-spring birds, the outer primaries are retained juvenile feathers, making precise aging of this bird possible. Very similar to a nonbreeding adult, but still lacking the yellow tip to the bill, and with a partial dark secondary bar and obviously worn outer primaries. The complexity of tern molt is apparent on this individual, with what appear to be primaries of three generations: juvenile (P8–10); fresh alternate (P1); and formative 1, with a molt suspension that gives the appearance of an additional generation (P3–4 old F1, P5–6 newer, post molt suspension F1). Many species of terns show similar complexity. Fortunately, in most cases this has little bearing on species identification, but it can be an interesting rabbit hole to fall into.

SANDWICH TERN 15 Nonbreeding (basic) adults with Royal Terns. Sept., GA. Sandwich Tern is the only crested tern with a black bill. Compare the slender body of the Sandwich Tern to that of the Royal Tern, whose body almost seems to dwarf its head.



TRICKY THALASSEUS

Crested terns of the genus *Thalasseus* tend to be showy, loud, and extremely gregarious birds, and most are easily identified. There are some exceptions, though. They do, for example, show a tendency to hybridize within the genus, or perhaps their hybrids are merely particularly noticeable. A very challenging *Thalasseus* identification is being thrust on North American birders in the wake of the first confirmed Eurasian Sandwich Tern record from Massachusetts in 2013. As these birds are likely to be split in the future from North American Sandwich Terns, the ability and awareness to detect these stealth vagrants will soon be highly useful. To minimize confusion as much as possible with a complicated subject, within this section the terms Eurasian Sandwich Tern (*Thalasseus sandvicensis sandvicensis*) will reference the Old World population. North American Sandwich Tern (*Thalasseus sandvicensis acuflavida*) will refer to North American birds excluding Cayenne Tern. Cayenne Tern (*Thalasseus sandvicensis eurygnathus*) will refer to the yellow-billed population of the southern Caribbean and South America. A further issue, beyond the scope of this guide, is that the Caribbean population of “Cayenne Tern” breeds at a different time of year from the South American “Cayenne Tern,” and the differences between these two breeding populations may be greater than currently recognized. Note that some taxonomic authorities are already splitting North American Sandwich Tern, giving it the name Cabot’s Tern. The split is not officially recognized in North America, nor is the name Cabot’s Tern likely to be adopted here given the prevailing sentiment against eponyms. The name North American Sandwich Tern was chosen for clarity within this guide instead of Cabot’s Tern.

EURASIAN SANDWICH TERN IDENTIFICATION

Separating Eurasian Sandwich Tern from North American Sandwich Tern is extremely challenging, requiring great

attention to plumage detail and vocalizations and very careful photo documentation. There is one known record of Eurasian Sandwich Tern from Massachusetts and another highly probable record from Chicago. Given the complexity of identification and the fact that it is not on the radar for most

TRICKY THALASSEUS 1 Nonbreeding (basic) adult and juvenile Eurasian Sandwich Terns with Common Terns and a Roseate Tern. Aug., Great Britain. Lukasz M. Pulawski. The barred tertials and strong V-shaped subterminal markings on the back feathers and coverts recall the juvenile plumage of Roseate Tern and are completely distinctive from the juvenile plumage of North American Sandwich Tern. Both the adult and the juvenile show white flecking and fringing on the black marking behind the eye, imparting a distinctive grizzled appearance. Additionally, the adult shows a very restricted yellow tip to the bill typical of Sandwich Tern and a white trailing edge to the folded primaries similar to that of Roseate Tern, that is broader and extends farther along the primaries than that of North American Sandwich Tern.





TRICKY THALASSEUS 2 Nonbreeding (basic) adult Eurasian Sandwich Tern. Sept., Poland. Zbigniew Kajzer. Note the small yellow tip to the bill and the grizzled appearance to the dark area behind the eye. The white trailing edge to the primaries has worn away on this bird, so the separation from North American Sandwich Tern is even more challenging with these late summer and fall adults. The bills of Eurasian Sandwich Terns tend to be slightly longer and thinner than those of North American Sandwich Terns. To my eye, those traits are difficult to detect, but I see the bills having slightly more curvature to the upper mandible and tapering more evenly along their length, so they do not have the straight, peg-like appearance of the bill of North American Sandwich Tern.

TRICKY THALASSEUS 3 First-cycle Eurasian Sandwich Tern. Sept., Poland. Zbigniew Kajzer. A first-cycle bird might be more likely to occur in North America than a full juvenile. Hopefully such a bird would still retain juvenile tertials, as this bird does. Also note the bold white tips are clearly visible in the inner and middle primaries. First-cycle birds tend to show this strongly bicolored tail, which first-cycle North American Sandwich Terns lack.

birders, there are likely additional occurrences that have been overlooked. The juvenile plumage is quite distinct, with juvenile Eurasian Sandwich Terns having an appearance that is quite similar to juvenile Roseate Terns, while juvenile North American Sandwich Terns are similar to juvenile Royal Terns. Adults are more challenging, and some are likely impossible to separate in the field visually, particularly breeding adults. However, North American Sandwich Terns do differ from Eurasian Sandwich Terns vocally, giving a call that is similar to North American Sandwich Terns but slower and more exaggerated. The traits of nonbreeding Sandwich Terns are visible in the images in this section.

CAYENNE TERNS AND CAYENNE x CABOT'S TERN INTERGRADES

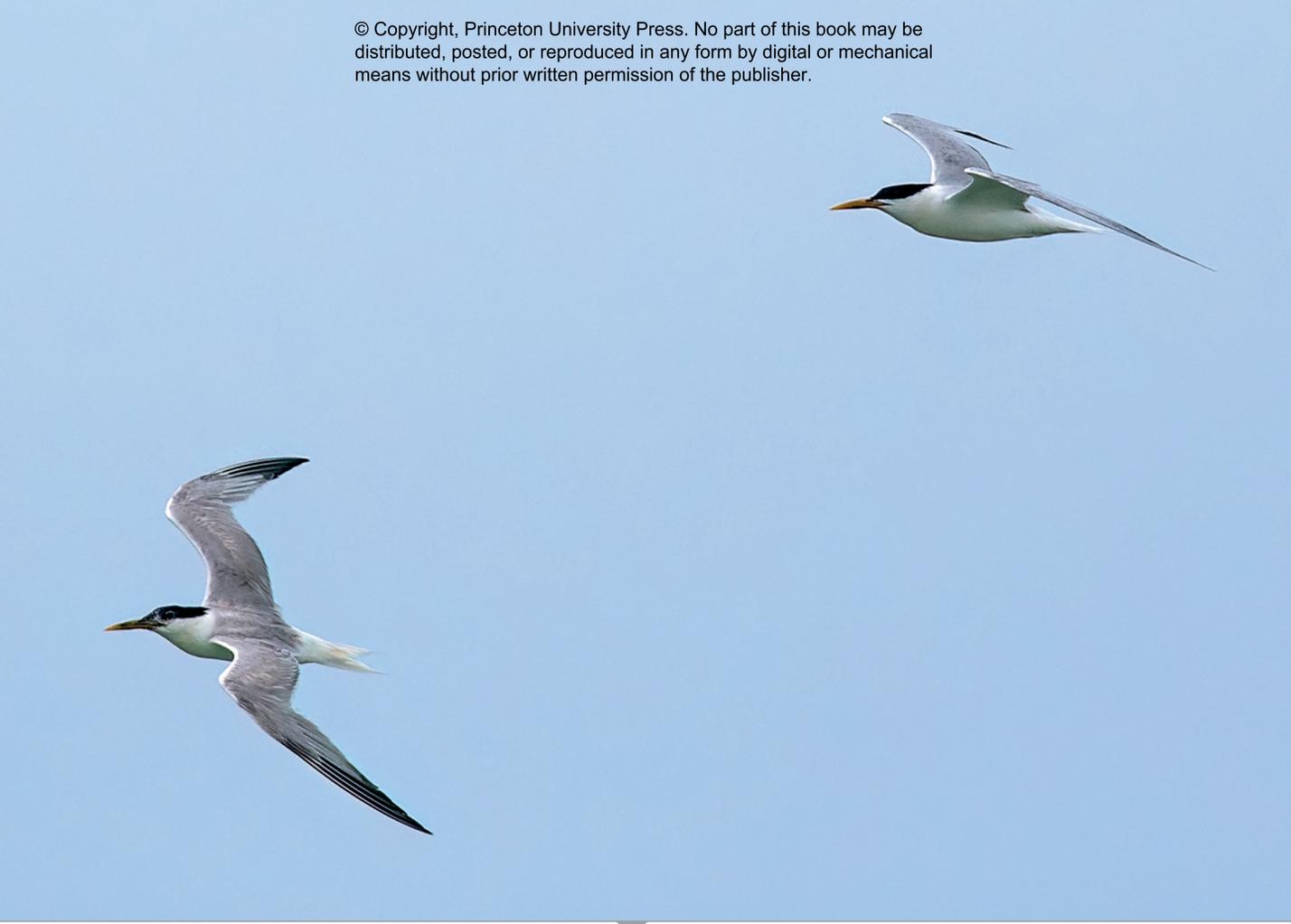
Cayenne Tern is currently considered a subspecies of Sandwich Tern, occurring in the southern Caribbean and South America. Should Eurasian Sandwich and North American Sandwich Terns be split, Cayenne Tern is likely to be

considered a subspecies of North American Sandwich Tern, not its own species, despite the fact that it is more easily separated visually than Eurasian and North American Sandwich Terns are from one another. Further examination of the complex, particularly comparisons of the Caribbean and South American populations of Cayenne Tern, may change this viewpoint. A yellow to pale orange bill is its most distinctive trait, but it is also slightly larger than North American Sandwich Tern, with a larger bill that is often slightly curved. There is an area in the southern Caribbean where North American Sandwich Terns and Cayenne Terns are found together and interbreed, an area known as an “intergrade zone” (not a “hybrid zone,” as it is interbreeding between subspecies). Within this area, many birds show intermediate characteristics. Cayenne Tern is of interest to North American birders since vagrant Cayenne Terns have been observed in North America, primarily in Florida but with a few farther-flung records, including a bird in New York.

Perhaps more relevant is the tendency for birds that look identical to North American Sandwich x Cayenne

TRICKY THALASSEUS 4 Nonbreeding (basic) adult Cayenne Tern. July, Aruba. The pale eye-ring is a trait seen frequently in Caribbean Cayenne Terns but very rarely in North American Sandwich Terns. The pale forehead with an otherwise complete black cap was observed on multiple Cayenne Terns at this location but is rarely—if ever—shown by North American Sandwich Terns. This suggests that there may be differences in how Cayenne and North American Sandwich Terns replace the head feathers that may be worth additional investigation.





TRICKY THALASSEUS 5 Breeding (alt.) adult Cayenne Tern and Cayenne x North American Sandwich Tern intergrade. July, Aruba. The lead bird is a likely Cayenne x North American Sandwich Tern intergrade while the rear bird is more like a Cayenne Tern, though it does appear to have a black streak on the bill.

TRICKY THALASSEUS 6 Nonbreeding (basic) adult Cayenne Terns, North American Sandwich Tern, Cayenne intergrades, and Common Tern. July, Aruba. A typical flock from the intergrade zone in Aruba. From left to right: North American Sandwich Tern, Cayenne Tern, Common Tern (background), presumed intergrade tern, presumed intergrade tern, and Cayenne Tern. Intergrades are common and highly variable in the southern Caribbean.



Tern intergrades to be observed along the Gulf Coast. The question about such birds is, are they actually Cayenne intergrades, or are they pure North American Sandwich Terns with aberrant bare part coloration? A strike against the idea of them being intergrades is that, according to our present knowledge, the distribution of North American Sandwich Tern-type birds with aberrant bills appears to be too even: they are spread over the entire Gulf region, as prevalent in Texas as they are in Florida. The assumption is that actual vagrants from the southern Caribbean might be expected to be most regular in Florida, and less frequent in areas farther from the intergrade zone. The data that this assumption is based on is far from complete, however, as such birds tend to fly under the radar of most observers. On the other hand, a mark potentially in the favor of these birds being Cayenne intergrades is that many of them are identical in appearance

to birds from the known intergrade zone. The reality is that we just don't know enough about these birds yet to be certain whether they are aberrant North American Sandwich Terns or Cayenne intergrades. Documenting the occurrence of such birds over a broad area, noting their traits and molt sequences, and comparing those traits and patterns of occurrence to patterns from the intergrade zone would be key to advancing our knowledge.

NORTH AMERICAN SANDWICH x ELEGANT TERN HYBRIDS

The *Thalasseus* challenge in southern California and the Baja peninsula involves very small numbers of clear North American Sandwich x Elegant Tern hybrids but also a larger number of birds that appear to be very similar to Elegant

TRICKY THALASSEUS 7 Nonbreeding (basic) adult North American Sandwich Tern or North American Sandwich x Cayenne intergrade. Oct., FL. Are birds such as this just aberrant North American Sandwich Terns, or could they be vagrant Cayenne intergrades? *Thalasseus* terns frequently show aberrant leg color—is it such a stretch to believe they could also show odd bill coloration?





TRICKY THALASSEUS 8 Immature North American Sandwich Tern or Cayenne intergrade. July, FL. This bird seems to show an eye-ring like many Cayenne Terns show, but is overall very similar to North American Sandwich Tern.

TRICKY THALASSEUS 9 Breeding (alt.) adult Elegant x North American Sandwich Tern hybrid. March, CA. Tom Ford-Hutchinson. This bird is likely the offspring of a known mixed Elegant Tern and North American Sandwich Tern pair in southern California. Even without that knowledge, it is a clear hybrid, showing its North American Sandwich Tern parentage clearly in the bill, while its shaggy crest screams Elegant Tern.



Terns save for some dark markings on the bills and occasionally other traits that suggest North American Sandwich Tern. In a study of North American Sandwich x Elegant Tern hybrids from the main nesting location for Elegant Terns, Isla Rasa in the Sea of Cortez, these Elegant-like terns were presumed to be backcrosses with Elegant Terns. The researchers used a scoring system to indicate where each bird fell on a scale between pure Elegant and pure North American Sandwich Tern. In their sample of over 1000 birds, those with presumed hybrid traits made up just over 0.5% (Velarde and Rojo 2012). The researchers on this project have obtained blood samples of two such birds, and are working to discover if North American Sandwich Tern genes can be confirmed. Interestingly, birds with dark markings on an orange bill

seemed to choose to mate with other birds with the same traits, a tendency also observed in Common x Roseate Tern hybrids (Hays 1975). Others have contended that there are too many of these birds with dark markings on the bill for them to be hybrids, and that they are instead Elegant Terns with aberrant bare part coloration. This is quite similar to the North American Sandwich x Cayenne intergrade versus aberrant North American Sandwich Tern debate in the southeastern U.S. Similarly, there isn't enough data at present to make a determination. There are some banding efforts underway that might shed some light on the problem, but birders in the region are encouraged to carefully document any Elegant Terns with aberrant traits in the hopes that we can use such findings to further our knowledge on the issue.

TRICKY THALASSEUS 10 Breeding (alt.) adult presumed Elegant x North American Sandwich Tern backcross (foreground) and Elegant Tern. May, Mexico. Patricia Rojo. This individual from Isla Rasa was one of the individuals considered in a study of presumed Elegant x North American Sandwich Tern hybrids from the Sea of Cortez. In addition to the bill coloration, note the shorter, thinner bill, smaller size, and reduced crest compared to the Elegant Tern in the background. In the study, birds with largely orange bills, but with some traits consistent with Sandwich Terns, were presumed to be backcrosses between an Elegant x North American Sandwich Tern hybrid and an Elegant Tern.



UPLAND TERNS: GENUS *Gelocheidon*

The word *Gelocheidon* is a combination of two ancient Greek words meaning “to laugh” and “swallow,” or “laughing swallow.” The genus *Gelocheidon* is monotypic, with Gull-billed Tern being the only species, though some taxonomic authorities split the Australian subspecies of Gull-billed Tern into its own species. Behaviorally quite distinct from other terns, it is the tern least tied to water. Gull-billed Tern often forages by flying over dry land in search of grasshoppers and other large insects, frogs, or crabs, which it plucks from the surface, or by catching flying insects midair. It infrequently also forages over water, but its foraging behavior remains the same while doing so: swooping and plucking from the surface, not plunge-diving like most other terns. In most areas this species is somewhat scarce and local, often just a few pairs situated along the edge of a larger colony of terns, except along the Gulf Coast, where it can be locally common.

GULL-BILLED TERN *Gelocheidon nilotica*

L 13–14 in.; WS 35–38 in.; WT 7–10 oz.

SIZE AND STRUCTURE About the same size as Sandwich Tern and slightly larger than Forster’s Tern, but distinctly more heavily built than either. The combination of the namesake short, heavy bill with the overall stocky build is structurally

GULL-BILLED TERN 1 Breeding (alt.) adult. July, FL. The heavy black bill is unique among North American terns. The body is also heavily built, and the legs are long and sturdy. Overall, Gull-billed Tern is fairly plain; while standing, it lacks the elegant appearance that is inherent to most terns. During most of the year, the folded primaries are pale, but in late summer, Gull-billed Terns do show blackish primaries, as this individual does.

unlike any other similarly sized tern. In flight, the wings are unusually broad, while the hand is long and tapered, appearing gently curved at times like the profile of Black Tern, but can also appear very sharp and angular, more like *Thalasseus* terns. The tail is short and only slightly forked. The heavy bill is generally pointed downward, although Gull-billed Terns show more head movement while foraging than any other tern, the bill constantly changing angles as these birds look around.

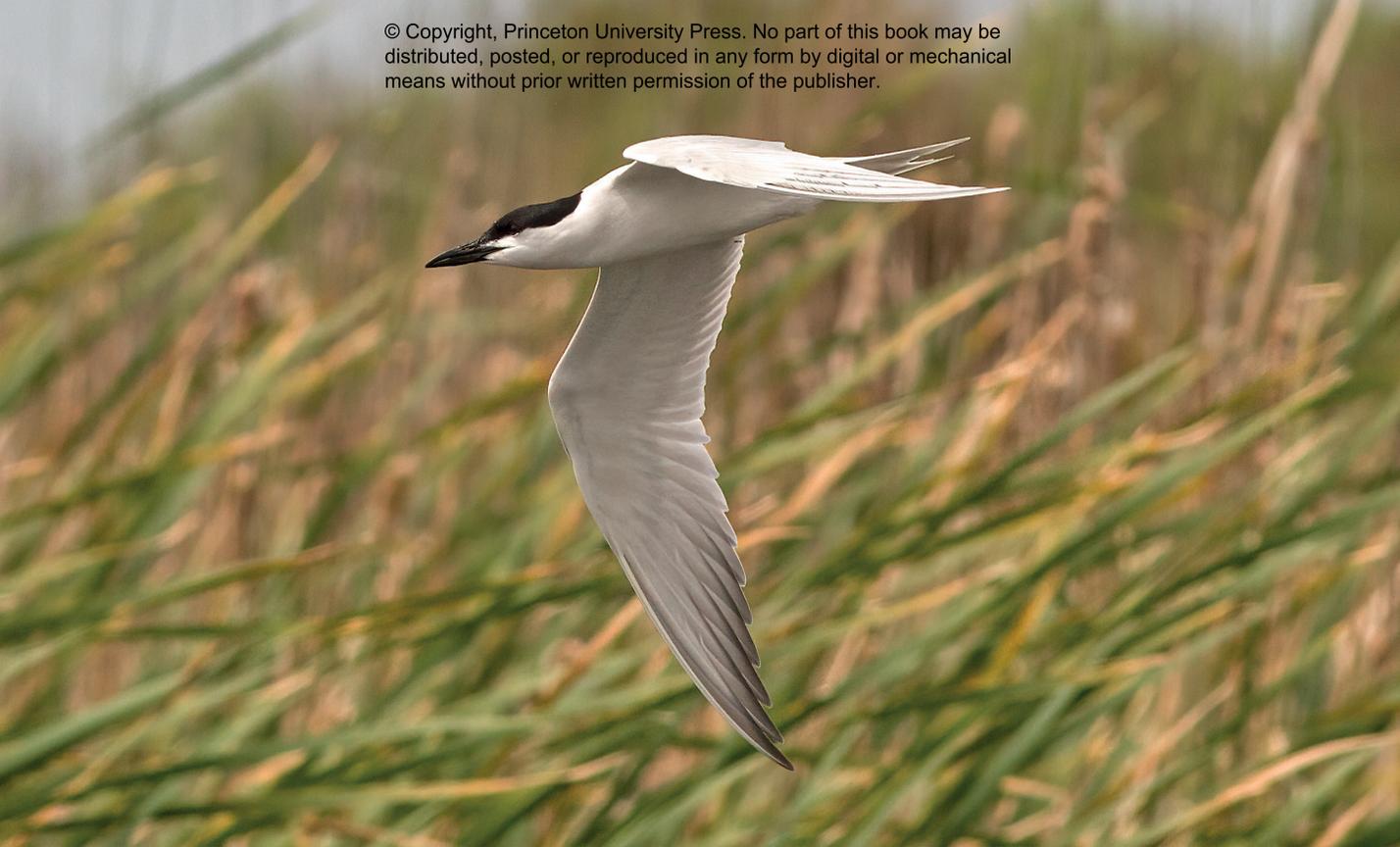




GULL-BILLED TERN 2 Breeding (alt.) adults. April, TX. Kevin T. Karlson. Like all terns, Gull-billed Terns engage in an elaborate breeding display to cement the pair bond, and these displays often end with a quick formal bow. Some courtship behavior continues throughout the breeding season, and adults will sometimes bow to each other after feeding chicks.

GULL-BILLED TERN 3 Subadult with Royal Tern, Laughing Gull, American Avocet, and Sanderling. April, TX. The heavy body of Gull-billed Tern makes it appear closer in size to Royal Tern than to Sandwich Tern. While Gull-billed and Sandwich Terns are similar in most measurements, the slim bodies of Sandwich Tern, comparing both species to Royal Tern, highlights how measurements do not capture the full picture of size as it is perceived in the field. The white area at the front of the cap may indicate that this is a second-cycle bird.





GULL-BILLED TERN 4 Breeding (alt.) adult. April, FL. The broad wings are a noticeable trait in flight, and the head, neck, and body are of nearly equal thickness, so that the entire body looks like a seamless tube. In spring and early summer, the upper sides of the wings of Gull-billed Tern are uniformly silvery-gray, but many develop a dark wedge in the outer primaries as the summer progresses.





GULL-BILLED TERN 5 First-cycle with Forster's Tern, Common Tern, and Black Skimmer. Sept., LA. Cameron Rutt. This image illustrates how easily photos can mislead. This Gull-billed Tern does not look markedly larger than the *Sterna* terns that surround it, but its body is subtly turned more toward the camera, causing the full breadth of the wings and the bulk of the body to appear diminished. Our eye is drawn, however, to the large, pale head and oddly thick bill, clearly marking this tern as the odd bird out.



GULL-BILLED TERN 6 Breeding (alt.) adults. July, NJ. George L. Armistead/Hillstar Nature. In contrast to the gregarious nature of most other tern species, Gull-billed Tern does not typically form single-species-dominated flocks. Even in places where they are common, a flock as large as the one pictured here is unusual. More often, singles and pairs tuck themselves into flocks of other terns. Note the heavy bills and dome-shaped heads. *One of these birds differs from the others— which one is in question, and how does it differ?*



GULL-BILLED TERN 7 Nonbreeding (basic) adult with Forster's Tern. March, FL. Reinhard Geisler. Perched and at a distance, the greater bulk of the Gull-billed is far more noticeable. This individual has only a hint of a dark line behind the eye, and the uniformly pale folded primaries are typical of a fresh-plumaged Gull-billed. *What age is the Forster's?*



GULL-BILLED TERN 8 Nonbreeding (basic) adult. Feb., FL. Reinhard Geisler. The short, heavy bill and dome-shaped head are distinctive, but in a very subtle way. The head pattern is quite pale, but note the ghost of a dark spot behind and below the eye. Some nonbreeding Gull-billed Terns show a dark eye patch much more clearly, appearing like a dark streak through the eye, extending in front of the eye and tapering off behind it.

GULL-BILLED TERN 9 Juvenile with juvenile Sandwich Tern and juvenile Laughing Gull. Aug., FL. Fresh juvenile Gull-billed and Sandwich Terns that do not have fully grown bills can be surprisingly similar; the bill structure in particular is much more similar at this age than later in life. The Gull-billed is the front-right bird; note its plain face, dome-shaped head, and plain gray tertial centers compared to the extensive black behind the eye, flat crown, and dark-centered tertials of the juvenile Sandwich Tern.





GULL-BILLED TERN 10 Breeding (alt.) adult. Aug., GA. While generally silent away from breeding grounds, Gull-billed Tern is extremely vocal anywhere near a nesting area, giving a series of short, bark-like laughs, and an extended chattering cackle. It opens its mouth extremely widely to give these calls; you can identify them at a distance by seeing the mouth open and close before you hear the call.



GULL-BILLED TERN 11 Breeding (alt.) adult with Sandwich Terns. April, TX. The short, heavy bill and dome-shaped head contrast with the long, slender bills and shaggy crests of the Sandwich Terns in the background.

GULL-BILLED TERN 12 Juvenile. July, NJ. Kevin T. Karlson. The edges of the back feathers on fresh juveniles are pale brown to bronze, but from a distance, they appear peach-colored or sandy. The lower mandible may show some dull orange or pink until mid-fall, though in most, the bill rapidly becomes entirely black. This individual has a more Forster's Tern-like facial pattern. In Gull-billed Terns with extensive dark around the eye, the pattern consists more of a dark streak through the eye, connecting to a round spot behind it, rather than the more rectangular eye patch of Forster's. Of course, from a distance, the appearance is quite similar.



BEHAVIOR Breeds near the coast but often hunts in marshes and upland areas on the coastal plains. When hunting upland areas with high prey concentrations, groups of dozens may gather, coursing and swooping in every direction, unlike groups of terns feeding over water, which usually organize themselves in some discernable way. Along the Atlantic coast, Gull-billeds are usually less numerous than along the Gulf, often nesting on the edges of Common Tern colonies and opportunistically swooping down and snagging Common Tern chicks at unattended nests.

FLIGHT Slow, deep, deliberate wingbeats give Gull-billed Tern a beautiful and almost majestic appearance in flight. Individuals generally fly at a medium height above water, mudflats, or open fields, making shallow dives to deftly pluck prey items from the surface, barely arresting their momentum to do so.

CALL Usually not particularly vocal except near the breeding colonies, where they are extremely vocal. Typical call is a *Ka-wek* given singly or in a series. The alarm call is an *Aah* given rapidly and repeatedly, becoming a highly unusual

cackling laughter. Like juvenile *Thalasseus* terns, the juveniles follow the adults, giving a shrill “peep,” though not as frequently or as insistently.

RANGE Breeds along the entire Gulf Coast, along the Atlantic coast north to Long Island, and in two colonies in extreme southern California. Generally found in low numbers except for a few locations in Texas and Louisiana. Some individuals winter along the western Gulf Coast and in the Florida peninsula, but generally even scarcer and more local during winter. **World:** Widespread but spottily distributed in Central and South America, southern Europe, Africa, southern Asia, and Australia. Australian birds are split off as “Australian Tern” by some authors.

SPECIES INFO The genus name *Gelochelidon* roughly translates to “laughing swallow,” in reference to its unusual call and elegant flight. Six subspecies worldwide, with two in North America: *G. n. aranea* in eastern North America and *G. n. vanrossemi* in extreme southern California and the Gulf of California. They are nearly identical, but *vanrossemi* has, on average, a larger bill and longer legs.

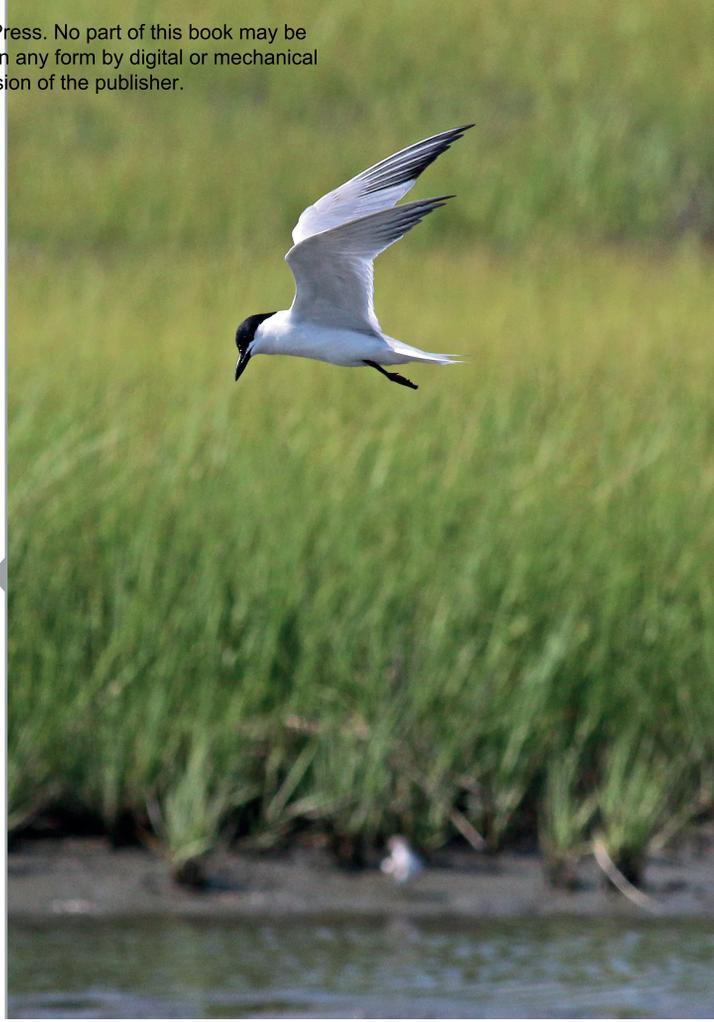
GULL-BILLED TERN 13 Juvenile with Black Skimmer and Laughing Gull. Aug., GA. The peach-colored back of a recently fledged Gull-billed Tern fades quickly; by fall, first-cycle birds look quite similar to nonbreeding adults. Note the bulky body, relatively long legs, and upright posture.



PLUMAGE INFO Most seen in the United States will be adults in breeding plumage. Immature birds are less apparent than in most other terns. Is that because immature birds stay on the wintering grounds until they are old enough to breed, or are they similar enough to adults that they are not being detected? Wintering Gull-billed Terns are scarce away from a few locations on the coasts of Florida, Texas, and Louisiana. Juveniles can be seen on the breeding grounds, but by fall, first-cycle birds are very similar to nonbreeding adults.

GULL-BILLED TERN 14 Breeding (alt.) adult. July, NJ. Gull-billed Tern forages over dry sandflats, mudflats, openings in coastal marshes, and even grassy fields—habitats rarely used by other terns. Wingbeats are slow and extremely deep, both above and below the body, giving the flight an exaggerated grace that is distinctive and punctuated by shallow, swooping dives as the birds deftly pluck prey, often fiddler crabs, frogs, or large insects, from the surface. Gull-billed Tern's behavior and habitat are such outliers from other terns that these traits can serve as a highly useful "field mark," especially when combined with its size and uniformly pale color.

GULL-BILLED TERN 15 Juvenile. July, CA. James Pawlicki. This faded juvenile already looks much like a nonbreeding adult, but the faint gray marking on the back, and the dark marking on the greater coverts and tertials, make it a clear juvenile. Gull-billed Terns in the West are of the subspecies *G. n. vanrossemi*, and while adults are essentially identical, it is possible that the juvenile plumage differs from that of the eastern subspecies, a pattern seen in several species of terns. Are the strong dark subterminal markings on the tertials and greater coverts due to it being just a particularly well-marked juvenile, or are juvenile western Gull-billed Terns noticeably more heavily marked than those of the eastern subspecies?



INDEX

- Anous minutus* **183–186**
 A. stolidus **175–182**, 184
- Gelochelidon nilotica* **62–70**
- Chidonias hybrida* 146, **147–150**
 C. leucopterus **143–146**
 C. niger 3, 53, 3, 53, 76, 130, **134–142**, 148
- Hydroprogne caspia* 4, **21–26**, 34
- Hybrids: North American Sandwich x Cayenne 59
 North American Sandwich x Elegant **59–61**
 Arctic x Common 124
 Common x Roseate 13, 123
- Noddy, Black **183–186**
 Brown **175–182**, 184
- Onychoprion aleuticus* **151–157**
 O. anaethetus **158–166**
 O. fuscatus 160, 164, **167–174**
- Rynchops niger* 4, 47, 69, **187–196**
- Skimmer, Black 4, 47, 69, **187–196**
- Sterna dougallii* 9, 55, **105–115**, 117, 124
 S. forsteri 7, 33, 65, **71–79**, 83, 89, 90, 117, 120, 122
 S. hirundo 2, 4, 6, 9, 10, 16, 55, 74, 76, **80–91**, 96, 99,
 100, 107, 108, 111, 113, 114, 115, 117, 118, 119
 S.h. longipennis **92–93**
 S. paradisaea 11, 14, **94–104**, 117, 120, 121, 125
- Sternula antillarum* 3, 8, **126–133**, 136
- Tern, Aleutian **151–157**
 Arctic 11, 14, **94–104**, 117, 120, 121, 125
 Black 3, 53, 3, 53, 76, 130, **134–142**, 148
 Bridled **158–166**
 Caspian 4, **21–26**, 34
 Common 2, 4, 6, 9, 10, 16, 55, 74, 76, **80–91**, 96, 99,
 100, 107, 108, 111, 113, 114, 115, 117, 118, 119
 Elegant 33, **36–45**
 Forster's 7, 33, 65, **71–79**, 83, 89, 90, 117, 120, 122
 Gull-billed 62–70
 Least 3, 8, **126–133**, 136
 Roseate 9, 55, **105–115**, 117, 124
 Royal 3, 5, 22, 23, **27–35**, 38, 40, 41, 47, 51, 52, 63,
 81, 90, 130, 193
 Sandwich 4, 33, 35, 43, **45–54**, 56, 66, 68, 109, 191
 Cayenne **57–59**
 Eurasian Sandwich **55–56**
 Sooty 160, 164, **167–174**
 Whiskered 146, **147–150**
 White-winged **143–146**
- Thalasseus elegans* 33, **36–45**
 T. maximus 3, 5, 22, 23, **27–35**, 38, 40, 41, 47, 51, 52,
 63, 81, 90, 130, 193
 T. sandvicensis 4, 33, 35, 43, **45–54**, 56, 66, 68, 190,
 191