

Identification of Least Tern *Sterna antillarum* and Yellow-billed Tern *S. superciliaris*, with a sight record of Yellow-billed Tern from Tobago, West Indies

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El Gaviotín Chico Boreal *Sterna antillarum* nidifica en Norteamérica y en el Caribe, y pasa el invierno en las costas de Sudamérica. El Gaviotín Chico Común *Sterna superciliaris*, de Sudamérica, se encuentra principalmente en hábitats de agua dulce, pero a veces en las costas, y hay registros de la isla de Bonaire, a 87 km del continente. El tamaño de *S. superciliaris* es un poco mayor y su pico es proporcionalmente más grande que el de *S. antillarum*, pero estas características son útiles solamente cuando ambas especies están juntas. El color del pico es el criterio más seguro para distinguir las dos especies. En plumaje nupcial, ambas especies tienen un pico amarillo, pero *S. antillarum* casi siempre tiene el ápice oscuro. En los plumajes de juvenil, inmaduro y reposo sexual, *S. antillarum* siempre tiene un pico oscuro y *S. superciliaris* tiene un pico mayormente amarillo, con el ápice y base de la maxila negros; sin embargo, el color del pico de *S. antillarum* durante la transición de plumaje nupcial al plumaje de reposo sexual es semejante al de *S. superciliaris*. Se registra una observación de *S. superciliaris* en la isla de Tobago, a 118 km del continente. Los registros extraliminales de *S. superciliaris* son más probables durante la época de inundaciones de los grandes ríos. Se anticipa encontrar *S. antillarum* en el interior de Sudamérica.

Introduction

The morphologically similar Least *Sterna antillarum* and Yellow-billed Terns *S. superciliaris* of the New World, together with Peruvian Tern *S. lorata* of western South America and several Old World taxa, constitute a superspecies¹⁶. Least Tern breeds along coasts and large rivers of North America and on most Caribbean islands, including those off northern South America, and winters on coasts of South America^{1,6}. Yellow-billed Tern breeds along large rivers east of the Andes in South America and wanders to coastal areas during the non-breeding season^{1,6}. Although primarily a freshwater species, it reportedly nests on coastal beaches in south Brazil^{2,17} and forages with mixed tern flocks at sea off Suriname^{7,8}. It is a common seasonal visitor to Trinidad⁵, 19 km from Venezuela, but is not known to be pelagic; two sight records from Bonaire, 87 km from Venezuela¹⁹, apparently constitute the only other records outside of the continent.

Here I discuss the identification of Least and Yellow-billed Terns, based on field observations and examination of specimens, and clarify conflicting statements concerning field marks in the literature. I also report an extralimital sight record of Yellow-billed Tern from Tobago, 118 km from Venezuela.

Identification

I studied Least and Yellow-billed Terns in Trinidad, West Indies, and examined a large series of both species in the American Museum of Natural History (AMNH), New York, measuring (to nearest mm) bill length (exposed culmen), wing chord and tail length for breeding-plumaged specimens. Measured Least Terns were taken on the Atlantic coast, from

Massachusetts to Texas, USA, and from Aruba, West Indies; Yellow-billed Terns were from Ecuador, Peru, Bolivia and Brazil. My discussion below is limited primarily to characters useful for field identification.

Plumage coloration Identification commences by determining age and plumage. Juveniles of both species are characterised by mottled pale brown feathering on the back and upperwings, and a dark carpal bar on the leading inner edge of the wing. In immatures, brown feathering is replaced by pale grey and the carpal bar is less distinct. Adults in non-breeding plumage resemble immatures, but lack the dark carpal bar. In juveniles, immatures and non-breeding adults, the forecrown is mostly white, often flecked black, and a relatively distinct black stripe extends from the eye across the nape and hindcrown. In breeding plumage, the crown and nape are black, with a V-shaped, white forehead patch extending just behind the eye in the form of a narrow supercilium.

In breeding plumage, the supercilium is slightly narrower in Yellow-billed Tern, though this field mark is useful only when both species are present. Several authors state that the mantle and tail of adult Yellow-billed Tern are darker grey than that of Least Tern^{3,6,7,13,19}. However, mantle and tail coloration overlap among specimens and are therefore useless for identification. In breeding plumage, the outermost two (rarely three) primaries are dark in Least Tern, compared to three (rarely 2–4) in Yellow-billed Tern (curiously, many references state that the outermost *four* primaries are dark in Yellow-billed Tern^{3,5-7,11-13,19}, but this is rare in

specimens). This may be a useful field mark in breeding plumage, but is not infallible. In juvenile, immature and non-breeding adult plumages, additional primaries are dark in both species. In immatures, the carpal bar is distinctly darker in Least Tern than in Yellow-billed Tern⁸.

Body size and shape Yellow-billed Tern is slightly larger than Least Tern, with a 9% difference in mean wing length and only slight overlap between the two (Table 1). Body size may be useful in identification if both species are present, but not for solitary individuals. Several authors state that the tail is shorter and more deeply forked in Least Tern^{3,5,11-13}. This is likely true for freshly moulted individuals, but my samples included some with worn tail feathers. Tail length overlaps greatly and does not differ significantly between the two (Table 1). Although tail length is proportionately longer (relative to wing length) in Least Tern (Table 1), significant differences occurred (in my limited samples) only when measurements from both sexes were combined (student's *t* test, $P < 0.05$). The relatively longer and more deeply forked tail of Least Tern may be useful for identification only in freshly moulted individuals.

Bill size Yellow-billed Tern has a proportionately heavier and longer bill (c.8%) than Least Tern (Fig. 1, Table 1). However, bill length is sexually dimorphic in both species, with slight overlap between longer billed male Least Terns and shorter billed female Yellow-billed Terns in both size and proportions (Table 1). Although bill size is useful for identification, particularly when both species are present, it is often exaggerated in field guides. Caution is warranted.

Bill coloration In Least Tern, the bill of breeding-plumaged individuals is typically yellow with a dark tip of variable extent (Fig. 1), but in some it is entirely yellow. In juveniles, immatures and non-breeding adults, the bill is entirely dark (Fig. 1), but may be paler at the base. The extent of dark bill coloration appears correlated with the stage of moult, generally increasing from the tip towards the base of the bill as the individual moults into non-breeding plumage.

For Yellow-billed Tern, most authors state that the adult's bill is always entirely yellow^{3-7,12-14,18,19}. However, this is true only in breeding plumage (Fig. 1). Although a few authors describe a dark bill tip in juveniles, immatures^{2,5,8,17} and some non-breeding adults¹¹ (Fig. 1), this field mark is apparently always present, even in non-breeding adults (based on specimens and field observations of individuals lacking traces of immature plumage). Furthermore, the base of the upper bill is always dark on the upper ridge and around the nostrils in juveniles, immatures^{8,17} and non-breeding adults (pers. obs.; Fig. 1). The entire upper ridge is never entirely dark, as the mid-section is always yellow. The extent of dark coloration is variable, but is greatest in juveniles and immatures^{5,8,17} and is correlated with moult stage, from breeding to non-breeding plumage, in adults. The combination of a mostly yellow bill with a dark tip and upper base is a useful field mark for juvenile, immature and non-breeding Yellow-billed Terns, but some Least Terns in transition from breeding to non-breeding plumage possess a similar pattern.

Vocalisations Both give high-pitched calls, but the differences have not been described or analysed.

Table 1. Morphometric comparisons of Least and Yellow-billed Terns ($n=10$ for both sexes of each species).

Variable	Least Tern			Yellow-billed Tern		
	x	SD	Range	x	SD	Range
Bill length (mm)						
males	28.3	1.49	26-30	34.0 ^a	1.16	32-36
females	25.9 ^b	1.10	24-28	32.8 ^{b,c}	1.55	30-35
Wing length (mm)						
males	163.8	4.10	158-172	179.1 ^a	3.67	172-184
females	163.2	5.53	153-171	178.7 ^a	3.68	172-184
Tail length (mm)						
males	71.4	9.59	57-88	72.2	4.32	66-77
females	68.2	7.36	58-79	68.0	7.20	55-78
Bill length / wing length						
males	0.17	0.01	0.16-0.18	0.19 ^a	0.01	0.18-0.21
females	0.16 ^c	0.01	0.15-0.16	0.18 ^a	0.01	0.17-0.20
Wing length / tail length						
males	2.33	0.31	1.84-2.79	2.49	0.18	2.29-2.79
females	2.41	0.23	2.08-2.76	2.66	0.29	2.33-3.24

^adiffers significantly from Least Tern of same sex; student's *t* test, $P < 0.001$

^bdiffers nearly significantly from males; student's *t* test, $P = 0.065$

^cdiffers significantly from males; student's *t* test, $P < 0.001$

Furthermore, such differences would be useful only for observers intimately familiar with both.

Sight record from Tobago

At 10h15, on 23 August 1997, I noted a tiny tern over the beach at Buccoo Bay, Tobago. It repeatedly flew past my companions and myself, sometimes directly overhead, permitting excellent views down to 15 m. Light conditions were excellent. Approximately 5 minutes later it flew inland toward Buccoo Swamp and disappeared. Attempts to relocate it on 24 August were unsuccessful.

I immediately recognised it as either a Least or Yellow-billed Tern, but was only vaguely aware of their differences. Its small size and yellow bill eliminated all other New World terns including the much larger 'Cayenne' (Sandwich) Tern *S. sandvicensis eurygnatha* and Large-billed Tern *Phaetusa simplex*, with both of which I was very familiar (after seven years field work in Trinidad and Paraguay). Based on the extent of white on the crown, I realised it was in non-breeding plumage. I searched for, but could not discern a dark carpal bar, which would be present in an immature and concluded it was a non-breeding adult. My field notes relate: 'small tern, bill mostly yellowish, blackish on upper ridge and tip; whitish tail, slightly forked; whitish forehead [crown intended; no black specks noted, but may have been present]; black stripe from bill across each eye, joining behind eyes across nape; slight crest; primaries mostly blackish; ...primaries looked whitish from underneath, quite dark above; ...seemed larger than Least Tern; ...feet yellowish.'

After scrutinising available references, I concluded it was most likely a Yellow-billed Tern, but I was mystified by the bill coloration, which did not match field guide descriptions. This stimulated me to study morphological variation in Least and Yellow-billed Terns, both in the field and specimens.

Conclusions

Yellow-billed Tern is slightly larger than Least Tern, with a proportionately longer bill; however, these field marks are most useful when both species are present. The relatively longer and more deeply forked tail of Least Tern is useful for identification only in freshly moulted individuals. Bill coloration and size appear to be the most reliable criteria for distinguishing the two. In breeding plumage, both have a yellow bill, but Least Tern almost always has a dark tip. In juvenile, immature and non-breeding plumages, Least Tern always has a dark bill and Yellow-billed Tern a mostly yellow bill with a dark tip and dark base to the upper mandible. However, bill coloration of Least Tern in transition from breeding to non-breeding plumage may resemble Yellow-billed Tern.

Yellow-billed Tern has been reported as occurring on Tobago^{1,3}, apparently in error⁵. My sight

record has been rejected by the Trinidad and Tobago Rare Bird Committee, because its bill coloration apparently resembled Least Tern. However, my description, in particular the bill coloration, is more consistent with the field marks described above and in some references^{6,17} for Yellow-billed Tern than Least Tern. Although the record will be reconsidered, caution is always warranted for extralimital sight records.

Birders should be alert for extralimital records of Least Tern in the interior of South America and Yellow-billed Tern on offshore islands of South America. Arctic Tern *Sterna paradisaea*, which is more oceanic than Least Tern, has been recorded twice previously in the interior of South America^{10,15}; thus, Least Tern can be expected as well, particularly along larger rivers. Yellow-billed Tern is most likely to stray to offshore islands during the late wet season and early dry season (August–January), when South American rivers dispel large volumes of fresh water into the sea. In Trinidad, it occurs most commonly during summer, but stragglers appear as early as 29 January (I. Samad pers. comm.) and linger as late as 21 December⁹. The two sightings from Aruba¹⁹ were in October and January, and my sight record on Tobago in August.

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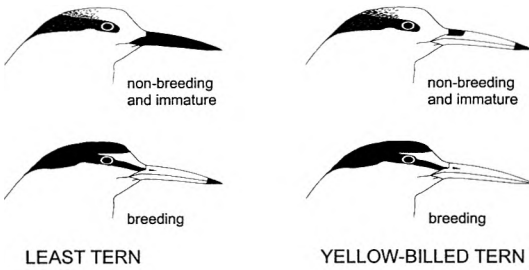


Figure 1. Bill coloration and head patterns in Least Tern *Sterna antillarum* and Yellow-billed Tern *S. supercilialis*.

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