

## Saunders's Tern – South Island, Cocos (Keeling) Islands

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### Summary

This submission relates to *Sternula* terns observed at a high tide roost on South Island, Cocos (Keeling) Islands. Photographs indicate two species of *Sternula* were present at the site – Saunders's Tern (*Sternula saundersi*) and Little Tern (*Sternula albifrons*). Although South Island is reportedly a regular site for Saunders's Tern, there is only a single record previously accepted by BARC for Australia and its External Territories and the species is still listed on the BARC review list. As such, we deemed it necessary to document our record.



Saunders's Terns at South Island, Cocos (Keeling) Islands

## **SUBMISSION**

**Species:** Saunders's Tern (*Sternula saundersi*)

**Location:** South Island, Cocos (Keeling) Islands (-12.19542°S, 96.88894°E)

**Dates:** Our group observation date was 10<sup>th</sup> February 2019, but the terns had been present since mid-November 2018, when the first visit to South Island by Geof Christie took place. The terns were present until at least the second week of April 2019.

**Circumstances of sighting:** Our group (consisting of all authors listed in this submission), led by local Geof Christie, visited South Island with the intention of twitching the well-known Saunders's Terns. We arrived on an incoming tide, and soon located terns gathering to roost on a sandbar, together with migratory shorebirds. The terns allowed a relatively close approach, permitting good views.

**Number of Individuals:** A total of 16 *Sternula* individuals were observed roosting at South Island. The majority were identified in the field as Saunders's Tern based on features noted in the following sections, with at least two individuals identified as Little Tern (*S. albifrons*), and another two unidentified to species. We therefore concluded at least 12 were attributable to Saunders's Tern (*S. saundersi*).

### **Physical description:**

**General:** Tiny, white tern with short, forked tail, black outer primaries, and adults with black cap and yellow bill with black tip.

**Size:** Very small, being similar to the overall size of the small species of shorebirds (e.g. Greater Sand Plover, Red-necked Stint, Ruddy Turnstone) present on the same sandbar (Fig. 1).

**Head:** *Adult alternate plumage:* head moult near-complete - mostly black cap, with white patch on frons starting at front of eye (e.g. Fig. 2); *?Second-year:* less advanced moult than adult alternate, with more extensive white patches on crown (e.g. Fig. 5); *first-year:* extensive white on crown, with black restricted to a band starting from behind eye, and wrapping around rear of crown (e.g. Fig. 3).

**Bill:** Relatively deep-based, short and angular (all age classes). *Adult alternate plumage:* yellow-orange bill with obvious black tip (e.g. Fig. 2); *?Second-year:* bill mostly black, with some orange development at base (Fig. 5); *first-year:* bill all black (e.g. Fig. 3).

**Underparts:** White in all plumages, and always paler than saddle.

**Wing:** In all plumages of birds suspected of being Saunders's Tern, bold, black primaries contrasted strongly with the pale body plumage, inner primaries and wings coverts (Fig. 2, 3, 4, 5). On the folded wing, the outer primaries appeared to be entirely black along their length (e.g. Fig. 2, 3). The folded inner primaries were light grey, concolourous (e.g. Fig. 2), or perhaps slightly darker than the saddle and upperwing coverts (e.g. Fig. 3). A dark carpal patch was visible on suspected first-year individuals when the wing was folded (Fig. 3), being very prominent with the wing out-stretched (Fig. 9 – note this individual was a *suspected* Saunders's Tern).

**Legs:** Appeared dark brown in all age classes (e.g. Fig. 2, 3), with a dull orange hue present when image was brightened (Fig. 4). Tarsi relatively long, with short exposed tibiae.

**Tail:** Short and forked (e.g. Fig. 10, 11), but not obvious in images of adult birds in alternate plumage.

**Age:** At least two age classes present. Individuals showing strong markings on the upperwing coverts (e.g. Fig. 3, 10), were aged as 1 (i.e. in their first year of life; likely hatched mid-2018). Those moulting into at least second-alternate plumage (e.g. showing near-complete black cap, yellow bill, white upperwing coverts) were aged as 2+, and therefore hatched in mid-2017 or earlier.

**Sex:** Not determined.

**Voice:**

Not recorded with a device. Several foraging individuals (identified as Saunders's Tern based on wing pattern) were heard on our approach to South Island. Calls sounded very similar to those of the (more familiar) Little Tern.

**Behaviour:**

Very little observed. Coming to roost on sandbar on incoming tide, where migratory shorebirds had also gathered. The tern flock was slightly separate to the shorebirds (i.e. not mixed within flock), but still utilising the same roost habitat. Several individuals were also seen in flight over the lagoon on approach to South Island.

**Habitat:**

The flock were roosting on an intertidal sandbar connected to South Island. Also observed flying over the shallow waters of the lagoon, several hundred metres from the roost site.

**Photographs of *Sternula* identified as Saunders's Terns:**



**Figure 1. Mixed roosting flock of [small] migratory shorebirds (foreground) and *Sternula* terns (background). Note small size of terns relative to the shorebirds in foreground. For a sense of scale, the shorebird between the two right-hand terns is a Red-necked Stint. Photo: Bill Twiss.**



**Figure 2. Adult Saunders's Terns in near-alternate plumage. Easily identified by brown legs, bold black folded primaries, and white frons lacking white supercilium extending over eye. Photo: Karen Weil.**



**Figure 3. Suspected first-year Saunders's Tern. Note bold black folded primaries. Photo: Karen Weil.**



**Figure 4. Adult Saunders's Terns in near-alternate plumage. The two left-hand individuals are the same as those in Fig. 2. Photo: Greg McKay.**



**Figure 5. Second-year (?) Saunders's Tern. Note development of orange on bill, and black on crown. Photo: Bill Twiss.**

**Photographs of unidentified *Sternula* terns:**



**Figure 6. *Sternula* sp. showing relatively grey primaries, saddle and coverts. Photo: Bill Twiss.**



**Figure 7. *Sternula* sp. (front) with Little Tern (rear). Saddle and covert colouration is similar to adjacent Little Tern, with primaries also appearing grey (not black), but head and bill shape closer to Saunders's Tern. Photo: Bill Twiss.**



Figure 8. *Sternula* sp. in basic plumage. Note all visible primaries are grey. Saddle and coverts appear similar in colouration to Little Tern, but head and bill shape closer to Saunders's Tern. Photo: Peter Manins.



Figure 9. First-year *Sternula* sp. in active primary moult. Suspected Saunders's Tern based on majority of visible primaries showing dark outer-webbing, and relatively deep-based bill (also likely the individual in Fig. 3). Note the dark upperwing coverts. Photo: Bill Twiss.



Figure 10. First-year *Sternula* sp. taking flight. Suspected Saunders's Tern. Photo: Peter Manins.



Figure 11. First-year *Sternula* sp. wing stretching. Suspected Saunders's Tern. Photo: Greg McKay.



### **Elimination of confusion species:**

Based on the very small size (relative to the sizes of the migratory shorebirds close by), and adult birds showing relatively fine, yellow bills with black tips, it was quickly established that the terns present were of the *Sternula* genus.

*Sternula* comprises a number of small, similar-looking coastal terns, which show only minor differences in plumage and structure. Although we were able to confidently identify the majority of *Sternula* present as Saunders's Terns, we also noted the presence of at least one adult alternate-plumaged Little Tern, one basic-plumaged Little Tern, and several individuals that could not be confidently identified to species based on the characters visible. Below we discuss similar species to Saunders's Tern (that occur from East Asia to East Africa) and how they were ruled out.

Little Tern (*Sternula albifrons*): Extremely similar to Saunders's Tern and formerly conspecific. An adult Little Tern in alternate plumage (Fig. 12-13), and one in basic plumage (Fig. 14-15), were directly comparable to the Saunders's Terns during our observation. The Saunders's Tern were identified from Little Tern by:

- Less extensive white patch on the frons that did not extend over the eye;
- Brown legs;
- More extensive black in the outer primaries than the Little Tern, producing a very obvious black bar with the wing folded; and,
- A more compact feel and proportionately large head (e.g. Fig. 15).



**Figure 12. Adult Little Tern in alternate plumage present during our observation. Note the white supercilium extending above the eye, fine and tapered bill, orange legs, and mostly grey primaries. Photo: Peter Manins.**



**Figure 13. Adult Little Tern (same individual as Fig. 13). Note white supercilium extending over eye and orange legs. Photo: Karen Weil.**



Figure 14. (Suspected) Little Tern in basic plumage. Relatively dark grey saddle and coverts, relatively small head with fine tapered bill, and white indent over eye. Photo: Bill Twiss.



Figure 15. Saunders's Tern (left) with basic-plumaged Little Tern (right; likely same individual as Fig. 9). Note the smaller size of Saunders's Tern, as well as the paler saddle and more compact build. Photo: Geof Christie (24 February 2019).

Fairy Tern (*Sternula nereis*): The Fairy Tern is a pale, compact *Sternula* similar structurally similar to Saunders’s Tern. However, the combination of the following features, characteristic of the adult terns present, we believe eliminated Fairy Tern:

- Brown legs in adult (near-)alternate plumage;
- Presence of dark loreal stripe in adult (near-)alternate plumage;
- Extensive black on outer primaries.

Least Tern (*Sternula antillarum*): Very rare in East-Asian Australasian Flyway. In most respects, similar to Little Tern, but has a grey rump (Pyle *et al.* 2001; i.e. similar to Saunders’s Tern). However, Saunders’s Tern can be separated from Least Tern by:

- Brown legs (not bright yellow; Renaudier & Claessens 2014) in adult alternate plumage; and,
- A less extensive white supercilium that stops before the eye.

**Previous occurrences:** Saunders’s Tern were first recorded in the Cocos (Keeling) Islands in 2006 (see BARC case 539), and have been reported regularly since (e.g. eBird.org shows records annually from 2010-2019). However, they appear yet to be recorded away from this location within Australian boundaries.

**Submitter contact details:**

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**References**

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