

DOES *FREGETTA LINEATA* STILL EXIST IN SAMOA?

Final report

Prepared by Chris Gaskin

On behalf of project partners:

Ministry of Natural Resources and Environment, Samoa Conservation Society, Secretariat for Pacific Regional Environment Programme & the Northern NZ Seabird Trust



Project proposal

Cassin (1858) notes of a bird specimen collected in Samoa during the US Exploring Expedition of 1839: 'Of this bird, unfortunately, we find little recorded by either of the naturalists of the Expedition. Mr Peale only observes: "*This bird was frequently seen within the torrid zone, in the Pacific Ocean. A single specimen was obtained at the Island of Upolu, from a native, who represented to us that during the breeding season this species lives in holes, very high up in the mountains.*"

From the Narrative of the US Exploring Expedition (Wilkes 1845), the three expedition vessels were at the Samoa Islands from 8 October to 10 November 1839. Some of that time was spent in American Samoa (Tutuila), with the remainder in Samoa (formerly Western Samoa) visiting both the main islands, Upolu and Savaii, and two of the smaller offshore islands, Manono and Apolima.

Our proposal was to charter a commercial fishing charter vessel and conduct surveys at sea in early November 2022. We would use chum to attract birds close to the vessel for identification purposes, take high quality photographs. The two areas to survey would be 1) out from the Aleipata Islands, between Upolu and American Samoa and 2) in the general Apolima Strait area and out to a seamount area about 20kms SSW of Manono. As this is likely the first dedicated at-sea seabird survey for Samoa, we planned to record all species seen during the survey, including en route between Apia where the charter vessel is based and each of the search areas. Another important purpose of the survey was to upskill MNRE and SCS staff in seabird survey methodology and species identification.

The grant spend

The grant awarded by the Birds New Zealand Pacific Islands Bird Conservation and Research Fund in 2022 (NZ\$5000) was sufficient for two days live aboard boat charter and for the purchase and shipping to Samoa of tuna fish oil for chumming purposes.

Survey methods

On 2 and 3 November 2022 we conducted an overnight circumnavigation of Upolu, with chumming stations at the two key locations, as noted above. Upolu is the second largest, most populous island in Samoa. We were looking for Procellariiformes (tubenose seabirds) but maintained a continuous count of all seabirds throughout the two days.

All birds seen within 300m either side of the bow of the vessel were identified. Conditions were such throughout the trip meant this 180° perspective from the flybridge could be maintained. Waypoints were taken every 10mins and counts for each species seen were accumulated (as shown in Fig. 5).

Expedition members were Chris Gaskin (NNZST), Karen Baird (SPREP), Vatapuia Maiava (MNRE), Aloma Black (SCS) and skipper Greg Hopping and crew Taatua (Troppo Fishing Adventures).

Itinerary

2 November 2022

We left Apia Harbour in stunningly calm conditions at 0510hrs. Then along the north coast of Upolu and through the Apolima Strait, passing Apolima Island close enough to check out the red-footed boobies nesting in the trees.



Figure 1. Apolima Island. Photo: Karen Baird

Around the north coast of Upolu and south west towards the seamount we saw plenty of work ups over tuna or barracouta, mostly with white terns above and dipping, with black or brown noddies close the sea surface, sometimes diving shallowly underwater. Tropicbirds, and both brown and red-footed boobies were commonly seen during this passage.



Figure 2. Brown booby and black noddy, Apolima Strait. Photo: Karen Baird

At our first chumming station, a sea mount about 25kms SW of Apolima Strait, we attracted few birds over 3 hours, except for two wedge-tailed shearwaters late in the session. Certainly, no petrels or storm petrels - our target birds.

During the session the wind increased above 15kns and rising and the sea state worsening. From the seamount we headed east, along the south coast of Upolu and towards our anchorage at Aganoa/Black Sand Beach. During this stage we saw several tropical shearwaters, plus good numbers of wedge-tailed shearwaters and bridled terns. Some feeding groups hard inshore.

3 November 2022

Early start, the wind was down to about 5-7kns and with an easy sea. Quiet bird wise initially with the highlight being two pods of cetaceans, which thanks to Jochen Zaeschmar in New Zealand were identified as a mix of short-finned pilot whales including juveniles and pygmy killer whales (with one breaching spectacularly at a distance).

At a FAD at the 1000m depth line there was quite a bit of bird action, but all noddies, terns and boobies. Then another quiet stretch to the Aleipata Islands (off the eastern end of Upolu), one of which, Nu'utele, we had surveyed the week before. Close to the islands we picked up the general movement of the birds breeding there, boobies, noddies and terns.

Our chumming spot was another seamount frequented by game fishers and local fishers in their twin-hulled alia craft, this was about 8kms east of the islands. With chum deployed our first Procellariiform were 4 sooty shearwaters flying rapidly through, heading south likely en route to their breeding grounds in Aotearoa NZ. What followed over the next couple of hours of chumming, and as we cruised further around Upolu's coast, was several other NZ-bound species. More sooty shearwaters, then mottled petrels (most abundant), Buller's shearwaters, two flesh-footed shearwaters, and a black-winged petrel. While general southward movement of species that breed in NZ and migrate to the North Pacific through the tropics is well known, we hadn't expected to see such a variety within such a small area, and pretty much together.



Figure 3. Mottled petrel, east of Upolu. Photo: Karen Baird

Also, there were good numbers of wedge-tailed shearwaters, most moving with the same flow, so could be from Tonga or Kermadecs to the south of Samoa. But also, possibly from Samoa itself. However, while chumming, our target species remained elusive. All the time, until some mighty rain squalls hit, we could see the jagged peaks of Tutuila, American Samoa in the distance, and know that Tahiti Petrel and Tropical and Wedge-tailed Shearwaters are confirmed breeding there.

However, while cruising, we did have a small all-dark petrel slip through low to the water quite close, but no pics unfortunately. One of those frustrating sightings of enigmatic all dark petrels that keep occurring around the Pacific.

Viewing the impressive, rugged mountains behind Uafato and Fagaloa Bays from the sea, and the high slopes of Upolu beyond, begged the question, what seabirds could be breeding on those steep slopes and high peaks.



Figure 4. View towards Uafato and Fagaloa Bays, uplands of Upolu visible in the cloud beyond. Photo: Chris Gaskin

We were back in Apia that night, determined to get out again at different times of the year, incorporating both Samoa and American Samoa once future funding is secured.

Follow up

CG made a visit to Uafato village to meet with Vaia, the Uafato Pulenuu (chief) to talk seabirds and find out whether they knew of their nesting in the forests above their village. We also met with Tuaoi at his home, and briefly spoke to his son Pogai who was heading out to a plantation. A visit arranged by Faleafaga Tipamaa of the Samoa Conservation Society. While the Vaia and Tuaoi did not have any knowledge of petrels or shearwaters, a future visit to talk to other villagers, especially those who work in the cultivated areas above the village and who hunt, could prove more profitable.

Results - species seen

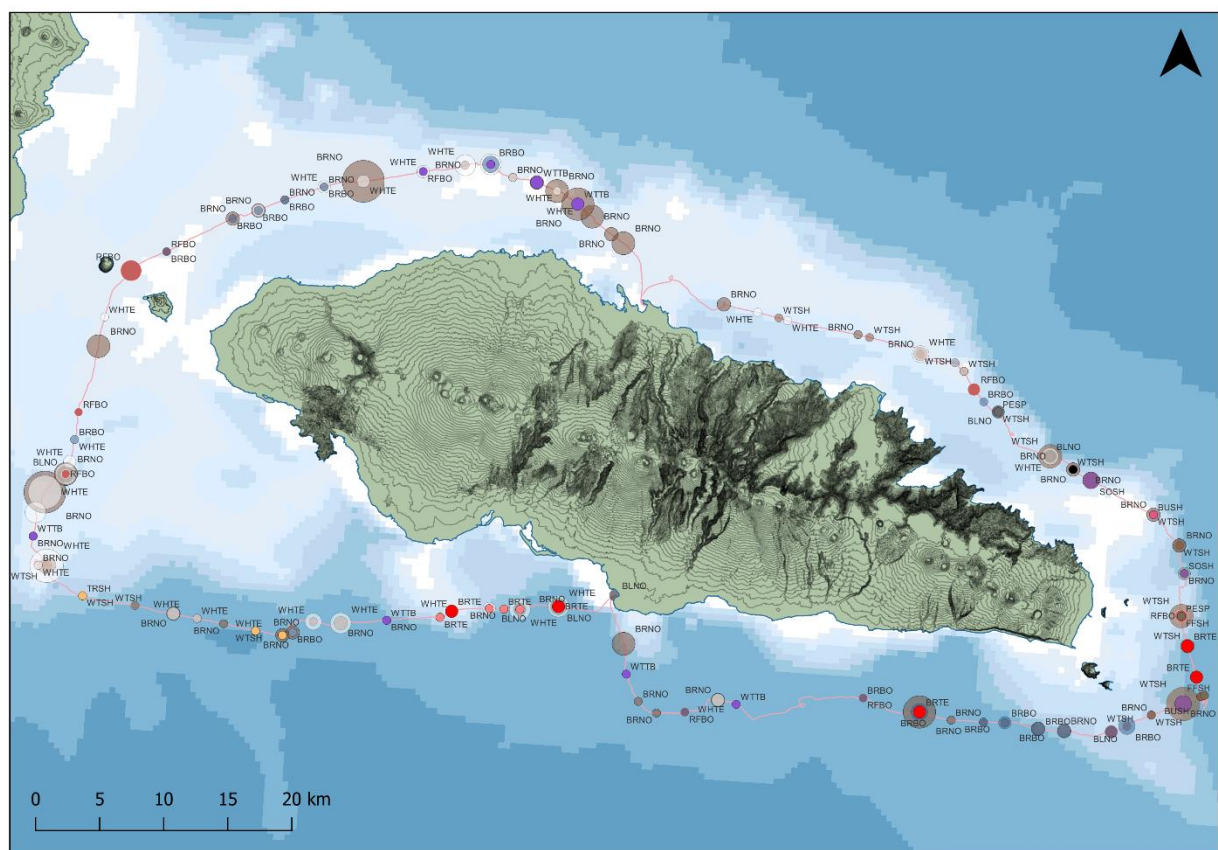


Figure 5. Upolu showing route taken and species seen en route.

Resident (confirmed breeding Samoa)

Great frigatebird (GRFB) – 6 (5 over Apolima Island)

Red-footed booby (RFBO) – 27 (seen at sea), also on nests on Apolima (not counted)

Brown booby (BRBO) – 35
Masked booby (MABO) – 1
White-tailed tropicbird (WTTB) – 10
Black noddy (BLNO) – 48
Brown noddy (BRNO) – 232
White tern (WTTE) – 215
Bridled tern (BRTE) – 17

Possibly breeding Samoa

Tropical shearwater (TRSH) – 3 (Subsequent to survey, likely breeding see below).
Wedge-tailed shearwater (WTSH) – 58

Visitors

Sooty shearwater (SOSH) (NZ) – 6
Buller's shearwater (BUSH) (NZ) - 3
Flesh-footed shearwater (FFSH) (NZ) - 2
Mottled petrel (MOPE) (NZ) – 10+
Black-winged petrel (BWPE) (NZ) – 1
Unidentified petrels (PESP) - 3

*Does *Fregetta lineata* still exist in Samoa?*

Our two-day survey did not turn up any storm petrels. We did however sight several tropical shearwaters along the southwest coast of Upolu, a species that has subsequently been discovered high up on Upolu (February 2023). First, a grounded bird at 600m asl in an urban area above Apia, and then subsequently, with calls detected in the same area suggesting this species at least is breeding on Upolu. With Tahiti petrels confirmed breeding on American Samoa, which lie 70kms southeast of Upolu, it was a little surprising that we did not encounter any.

It is worth noting that Archipelago Research and Conservation (ARC) conducted an opportunistic boat-based survey around two-thirds the coast of Tutuila, American Samoa on 17 November 2022 (Raine & Raine 2022). All seabirds seen along the transect were counted: (i) any seabirds in flight or resting within the full shoreline view (ii) birds occurring inland (iii) birds flying or perching along the shoreline (iv) birds occurring between the boat and shoreline (v) birds within 100 m seaward of the boat. They recorded 10 seabird species, 1 heron species and 2 wader species. The most numerous species was Brown Noddy, followed by Red-footed Booby and White Tern. They did not see any Procellariiformes.

Recommendations

- Further multi-day surveys are required, ideally including both Samoa and American Samoa. For Samoa, this would include both the main islands – Upolu and Savai'i. Surveys at different times of the year are also recommended.

- There needs to be at least one top-class seabird photographer on board for future surveys.
- The sightings made during this survey will be analysed and written into a short note and submitted to Notornis. This article will highlight the passage of migrating Procellariids through Samoan waters, specifically between Upolu and Tutuila (American Samoa) lying just north of the Tonga Kermadec Trench (below).

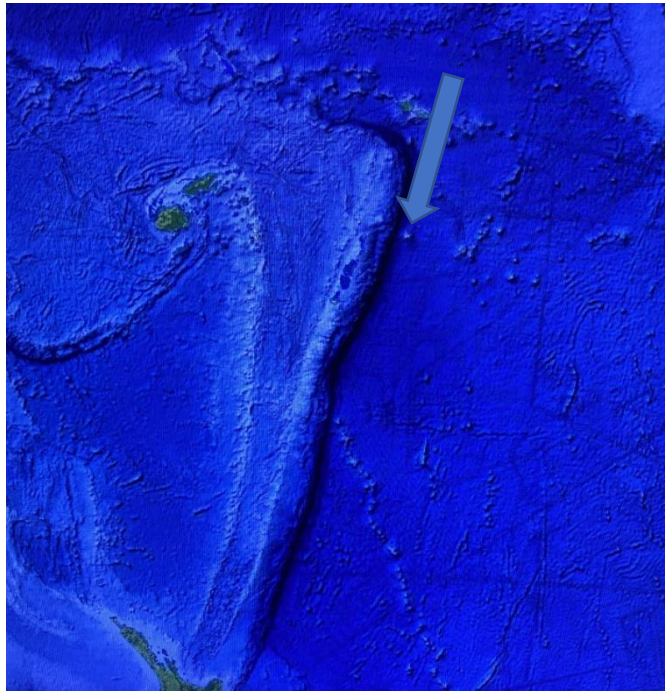


Figure 6. Samoa and Aotearoa New Zealand with the Tonga Kermadec Trench between. Arrow denotes passage of migratory species between Samoa and American Samoa. Map source: Google Earth

References

- Cassin, J. 1858. *United States Exploring Expedition. During the years 1838, 1839, 1840, 1841, 1842*, vol. 8. J. B. Lippincott & Co., Philadelphia.
- Peale, T. R. 1848. *United States Exploring Expedition. During the years 1838, 1839, 1840, 1841, 1842*, vol. 8. C. Sherman, Philadelphia.
- Raine, A, Raine, H. 2022. Seabird Surveys – American Samoa 2022. Archipelago Research & Conservation, Hawaii.
- Wilkes, C. 1845. *Narrative of the United States Exploring Expedition, During the Years 1838, 1839, 1840, 1841, 1842*. Lea and Blanchard, Philadelphia.