

# Tropical seabirds off the Hunter coastline as a result of ex-Tropical Cyclone Oswald Jan-Feb 2013

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For the most part, the latitudinal distribution of each seabird species follows more or less set patterns associated with the seasonal distribution of breeding and feeding regimes. However, stochastic weather events can push birds out of their normal range into unfamiliar latitudes. In January 2013 weather patterns across the Gulf of Carpentaria and the Coral Sea combined to build Tropical Cyclone Oswald and then push it down the Queensland coast, degrading its Tropical Cyclone status and feeding it with moisture-laden air to dump torrential rain on the south-east Queensland coastline. The effect of this system's southward push was to drive high numbers of tropical seabird species well beyond their normal low latitudes and well into NSW waters. Exceptional numbers of seabirds were observed off the Hunter Region coast and further south, including a large number of inshore and inland observations of locally rare tropical seabird species that normally frequent oceanic habitats.

## INTRODUCTION

In late January 2013, a range of bird species that are normally considered “tropical” were recorded along the coastline of New South Wales (NSW), including the Hunter Region. The appearance of these birds was directly related to the movement of ex-Tropical Cyclone Oswald down the eastern seaboard. Oswald pushed before it an exceedingly large number of tropical seabirds, including many species not normally found in high numbers off the NSW coast. It also resulted in several seabirds that would normally be found at or beyond the continental shelf, being observed close to shore by land-based observers.

This paper documents the “event” with regards to unusual seabirds recorded along the coastline of the Hunter Region, from Crowdy Head (31° 50' 36"S 152° 45' 4"E) south to Swansea (33° 05' 49"S 152° 39' 29"E), but predominantly from the Newcastle area where the bulk of observations were made. The main vantage points in the Newcastle area were along Fort Drive and at the seaward end of Nobbys Breakwall. Although the focus of this paper is tropical seabirds the scope is extended to other unusual pelagic birds recorded.

## Tropical Cyclone Oswald

Tropical cyclones originate north of approximately 23° S because they require sea surface temperatures exceeding 26-27° C to sustain

cumulonimbus development (Sturman & Tapper 1996). Tropical Cyclone (TC) Oswald began as a tropical low pressure system on 17 January 2013 that formed in the south-western Gulf of Carpentaria off the Northern Territory coast. The system was closely monitored over the next couple of days, but soon made landfall south-west of Borroloola before it looped back into the Gulf of Carpentaria to reform as TC Oswald by 21 January.

The storm grew in intensity and travelled unhindered east over the Cape York Peninsula, then out from the North Queensland coast where it was fed by moisture-laden monsoonal air flows establishing to the north. At the same time a high pressure system over New Zealand prevented the storm from progressing eastwards, forcing it south down the Queensland coastline (**Figure 1**). The storm stalled along the south-east Queensland coastline and was fed moist air from the Coral Sea, which brought about the intense rainfall experienced by that region. It continued south along the coastline and into NSW, becoming an ex-tropical cyclone in the process. By 30 January the storm had travelled some 3,000 km south along the coast, with considerable flow-on effects along the NSW coast to southwards of Sydney before eventually petering out in the Tasman Sea (Wikipedia 2013).

The southward progress of the storm and its considerable intensity pushed many tropical seabirds well south of their normal distribution.



**Figure 1.** Satellite image of TC Oswald when situated on the North Queensland coast (source: Wikipedia 2013)

## KEY SOURCES OF INFORMATION

The main forum for reporting the various Oswald-related sightings was the Hunter Bird Observers Club (HBOC) email chat-group “Hunterbirding”. Numerous emails were sent to the forum during the time that Oswald “blow-ins” were present in the area. Some sightings were also posted to the national email chat-group (“Birding-aus”) and to NSW Birdline (Eremaea 2013). Where appropriate, records published here have been subject to scrutiny by records appraisal committees (refer to Species Accounts).

## Chronology of Hunter Records

Significant sightings along the Hunter coastline commenced on 28 January, when a single Sooty Tern *Onychoprion fuscata* and an estimated 4500 Wedge-tailed Shearwaters *Ardenna pacifica* were observed from Fort Drive, Newcastle (DW). Later that day 4 Sooty Terns and 2 Streaked Shearwaters *Calonectris leucomelas* were seen amongst other more locally common species at the same location (SR).

Later that day a dishevelled Red-footed Booby *Sula sula* was found sheltering on an aerial mast at Swansea Heads Marine Rescue Station, near the entrance to Lake Macquarie (AR). The bird was so exhausted that during two hours' observation, by three observers, the bird not once lifted its head from a roosting position on its back (see **Figure 2**). The bird had a light intermediate plumage with light underparts, but its dark underwing coverts suggested the bird was of North Queensland origin (Marchant & Higgins 1990).



**Figure 2.** Red-footed Booby on Swansea Heads' Marine Rescue mast 28 January 2013 (Photo Allan Richardson)

On the morning of 29 January, the first report was of a Sooty Tern seen flying over land at Salt Ash (TC), clearly a bird that had been blown inland from the storm. The first records from Fort Drive were 4 Sooty Terns and 2 Streaked Shearwaters (CA), followed by a White-necked Petrel *Pterodroma cervicalis*, 2 Buller's Shearwaters *Ardenna bulleri* and 50+ Sooty Terns (MR).

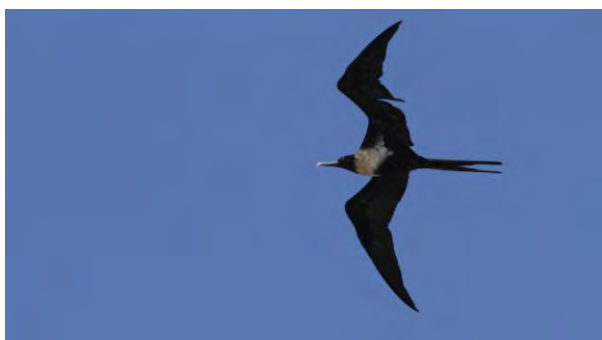
Sooty Terns dominated reports from other locations that afternoon, including exhausted birds that had made landfall. Three birds (1 on the ground) were reported from Birubi Point (DE), 8 birds (2 juveniles on the ground) at Stockton Beach (GA) (**Figure 3**), a single bird at Merewether Beach (EM), and 3 birds flying over Mosbri Crescent in suburban Newcastle (PH).



**Figure 3.** Sooty Tern adult (background) and juvenile (foreground) on Stockton Beach 30 January 2013 (Photo Gavin Ayre)

More seabirds were sighted off Nobbys Breakwall that afternoon, with 1 Streaked Shearwater, 1 Buller's Shearwater, 2 Pomarine Jaegers *Stercorarius pomarinus* and 50+ Sooty Terns seen by one observer (MK). Around the same time two other observers reported numerous Sooty Terns and a Tahiti Petrel *Pseudobulweria rostrata* off Newcastle Baths (AL/MN). The record of Tahiti Petrel is particularly unusual and is a bird very rarely sighted from land, especially at this latitude. At a similar time, observers at Fort Drive reported 1 Streaked Shearwater, 2 probable White-necked Petrels, 1 Buller's Shearwater and a small *Pterodroma* petrel that was most likely a Gould's Petrel *P. leucoptera* (MR *et al.*). Over 100 Sooty Terns were also seen.

The morning of 30 January saw 2 Lesser Frigatebirds *Fregata ariel* reported from Fort Drive (RM) (**Figure 4**), with the same observer reporting a Buller's Shearwater, 2 White-necked Petrels and 8 Sooty Terns about an hour later. An unidentified frigatebird was seen soon after from Fort Drive along with 10 Sooty Terns (MK). Elsewhere another Lesser Frigatebird was seen at Boat Harbour, Port Stephens, along with approximately 20 Sooty Terns (DE).



**Figure 4.** Lesser Frigatebird off Nobbys Breakwall 30 January 2013 (Photo Lorna Mee)

Arguably the 'peak' seawatching associated with Oswald occurred on the afternoon of 30 January. A group of around a dozen observers had gathered in the late afternoon at Fort Drive and noted a drop in the numbers of Sooty Terns compared to the past 48 hours. However, a tern that looked like a 'pale Sooty Tern' was observed and identified as a Bridled Tern *Onychoprion anaethetus* – the first record for the Hunter Region (LC/MR).

Soon after, a fishing trawler was seen coming towards the heads. An observer who had brought a bicycle quickly made his way to the end of Nobbys Breakwall. Within minutes of arrival there he reported "Buller's and Streaked Shearwaters" behind the boat, amongst the larger numbers of

mostly Wedge-tailed Shearwaters (SR). The same observer then reported seeing a "large, dark petrel with a whitish bill". Although it was not seen clearly enough to be confirmed, it is possible that this was a species in the Genus *Procellaria*. Moments later a Black Noddy *Anous minutus* was reported by the same observer and a decision was made by the Fort Drive observers to go and join him.

This decision was immediately complicated however by 2 Lesser Frigatebirds (both immature birds) that were first seen flying over the eastern end of Scott Street, above Fort Scratchley, then towards Nobbys Breakwall. These birds were also seen by the people that had since made it to the end of Nobbys Breakwall, but at a distance as the birds had travelled north over the harbour and were last seen wheeling over Stockton Breakwall.

Soon after a group of around 15 people had gathered at the end of Nobbys Breakwall where the Black Noddy, a possible Common Noddy *Anous stolidus*, a Bridled Tern (assumed to be the same bird as seen from Fort Drive), a Streaked Shearwater, 2 Arctic Jaegers *Stercorarius parasiticus* and 2 juvenile Sooty Terns were seen. Amongst the groups of Wedge-tailed Shearwaters, a few Flesh-footed Shearwaters *Ardenna carneipes* were also present.

The morning of 31 January began with early reports of the Black Noddy, Bridled Tern (**Figure 5**), a juvenile Lesser Frigatebird from the end of Nobbys Breakwall and an adult female crossing the harbour behind Nobbys Beach (AR). More reports of these species were to follow from several other observers over the course of the day and images were taken of all 3 species listed above.



**Figure 5.** Bridled Tern off Nobbys Breakwall 31 January 2013 (Photo Michael Kearns)

In the early afternoon an observer based at Merewether Heights (off Hickson Street) described seeing a White-tailed Tropicbird *Phaethon lepturus* flying northwards, followed moments later by a frigatebird species (probably a Lesser; JG).

This was to be the final addition to the “tropical” species seen during the “Oswald event” and from 1 February far fewer reports of these birds were received. Lesser Frigatebirds were however recorded until 3 February, whilst a Black Noddy was photographed (in poor condition) on Nobbys Breakwall on 4 February (RN).

## Records outside the Hunter Region

Prior to the effects of Oswald being felt off the Hunter coastline, some significant sightings were made to the north, including records of seabirds well inland. Perhaps the most extraordinary of these was a Bulwer’s Petrel *Bulweria bulwerii* found at Oakey, 140km from the south-eastern Queensland coastline and 400m above sea level (per M. Atzeni). The fact that no records of this species had previously been confirmed anywhere on the east coast of Australia makes this inland record particularly significant.

The most obvious birds reported elsewhere in NSW were Sooty Terns and Lesser Frigatebirds. Sooty Terns were reported from numerous sites as far south as Ulladulla and often in counts of greater than 50 birds (source: Birdline NSW). Lesser Frigatebirds were reported at 18 locations along the NSW coast, again as far south as Ulladulla, 270km south of the Hunter Region. An estimated total of 85 frigatebirds (predominantly Lesser) were reported in NSW during this time (Birding NSW 2013).

Other unusual tropical species recorded elsewhere in NSW included 2 Roseate Terns *Sterna dougallii*, 31 Bridled Terns and 2 Great Frigatebirds *Fregata minor* seen during the same period at Ballina. Each of these species is on the NSW Ornithological Records Appraisal Committee (ORAC) review list.

## SPECIES ACCOUNTS

Seven typically “tropical” species recorded off the Hunter coastline during Oswald have been outlined in **Table 1**. An account of the status as described in the Handlist of Birds in NSW (Morris *et al.* 1981), the relevant volumes of the Handbook

of Australian and New Zealand Birds and HBOC Checklist of Birds in the Hunter Region (Stuart 2012a) is provided, along with discussion of their occurrence during the Oswald event. Whilst some other land-based sightings were noteworthy (e.g. White-necked Petrel, Streaked / Buller’s Shearwaters), they have not been discussed as they are not considered to be “tropical” in occurrence and range.

Of the species listed in **Table 1**, the White-tailed Tropicbird, Tahiti Petrel, Lesser Frigatebird and Black Noddy records have been reviewed and accepted by the HBOC Records Appraisal Committee. The Red-footed Booby and Bridled Tern records have been reviewed and accepted by the NSW ORAC.

## DISCUSSION

In the southern hemisphere tropical cyclones rotate in a clockwise direction (Sturman & Tapper 1996). The very intense wind associated with the rotation of these storms is the key driver of coast-pounding storm surges (NOAA 2013). In the case of Oswald, which was held against the Queensland coast by easterly wind flows, the outer oceanic circulation on its eastern flank was in a southerly direction then turning westerly on its southerly front (see **Figure 1**).

Unusually high numbers of Sooty Terns (12 birds) were recorded during the Port Stephens pelagic birdwatching outing on 20 January and may have been a precursor to the numbers of tropical seabirds seen from shore soon after.

As the storm progressed south, the effect of these wind directions was to sweep oceanic birds trapped in the path of the storm southward and then westward. The front’s easterly air flows, maintained by north-easterly moisture-laden input from the Coral Sea, gave birds caught in its path no escape to the north or east once trapped in the storm’s path. Birds affected by these conditions would inevitably be swept along by the weather. This is the most likely explanation for the large numbers of tropical oceanic birds swept inland in south-eastern Queensland and the large numbers of oceanic birds that ultimately arrived along the NSW coast in inshore and sometimes inland contexts.

The intensity of the onshore weather against the Hunter coast on 28 January was very fierce, pushing birds inshore and only allowing the more

resilient of birds to stay aloft over the ocean. Large numbers of Wedge-tailed Shearwater were observed inshore from Fort Drive in Newcastle as well as Sooty Tern and Streaked Shearwater.

Further south, not a single bird was observed over the ocean or Moon Island outside of Swansea Heads during the last two hours of 28 January, although the occasional Crested Tern *Sterna bergii* and Arctic Jaeger battled with the conditions in the Lake Macquarie entrance channel itself.

The observations over the following days in the wake of the storm's fury can only be described as extraordinary for central and southern NSW inshore waters.

Lesser Frigatebird, Black Noddy, Bridled Tern, White-tailed Tropicbird and large numbers of Sooty Terns are all rare sightings in central NSW waters. Furthermore, the inshore presence of a number of normally pelagic species off Newcastle, such as White-necked Petrel, Buller's Shearwater, Streaked Shearwater, Tahiti Petrel and a small unidentified *Pterodroma* species reinforces the effect the severe weather played on the distribution of both tropical and pelagic seabirds.

## LIST OF OBSERVERS

The various observers referred to in this paper are listed below, in order of appearance in the text.

DW = Dan Williams  
 SR = Steve Roderick  
 AR = Allan Richardson  
 TC = Tom Clarke  
 CA = Craig Anderson  
 MR = Mick Roderick  
 DE = Darryl Eggins  
 LC = Liz Crawford  
 GA = Gavin Ayre  
 EM = Eula McKane  
 PH = Phil Hansbro  
 MK = Michael Kearns  
 AL = Ann Lindsey  
 MN = Mike Newman  
 RM = Robert McDonald  
 JG = John Goswell  
 RN = Richard Nicholas

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**Table 1.** Accounts of species observed in the Hunter Region during Tropical Cyclone Oswald, January - February 2013

Species	Status in NSW / Hunter Region			Occurrence within the Hunter Region during Tropical Cyclone Oswald and Other Comments
	NSW Handlist (Morris <i>et al.</i> 1981)	Handbook of Australian, New Zealand and Antarctic Birds (Marchant & Higgins 1990, 1993; Higgins & Davies 1996)	HBOC Checklist (Stuart 2012a)	
White-tailed Tropicbird <i>Phaethon lepturus</i>	Rare. Visitor; recorded November-July. Continental shelf and pelagic waters. Recorded south to about Batemans Bay, mainly found dead or dying.	“Mostly dead or dying birds recorded from Ballina S to Bateman’s Bay” (Vol 1 Part B), suggesting that coastal records are always associated with extreme weather events (though some records have been noted from Maroubra outside of extreme weather events; D. Mitford pers. comm.).	Accidental	A single bird was sighted off Merewether Heights on the afternoon of 31 January 2013. As far as is known, no other White-tailed Tropicbirds were seen in NSW at that time.
Tahiti Petrel <i>Pseudobulweria rostrata</i>	Rare. Visitor; recorded December-April. Continental shelf and pelagic waters. First recorded 1975; all records off Coffs Harbour and Nambucca Heads, likely to occur south to about Hastings River.	“Irregular coastal and offshore sightings since 1975” (Vol 1 Part A).	Rare summer visitor	A single bird was sighted by 2 observers off Newcastle Baths on 29 January 2013. No other reports of this species were made during the Oswald event.
Lesser Frigatebird <i>Fregata ariel</i>	Rare. Visitor; recorded mainly December-March (during cyclonic weather). Found on the Continental Shelf and pelagic waters. Recorded south to about Merimbula, but mainly on the North Coast.	“Down east coast to Byron Bay, with vagrants noted farther south after exceptional weather” (Vol 1 Part B).	Accidental	It is difficult to judge accurately how many Lesser Frigatebird individuals were observed in the Hunter Region during the Oswald event. It is estimated that at least 10 individual birds were present in the Hunter Region based on sightings between 29 January and 3 February. Two birds together were seen on multiple occasions and analysis of photographs allowed a number of birds to be individually identified, including immature, adult male and adult female birds.  Up to 2006 there were 46 reports in NSW, most from the Far North Coast, but some reports referred to multiple birds. An estimated total of 85 birds were reported in NSW during Oswald (Birding NSW 2013).
Red-footed Booby <i>Sula sula</i>	One record: single bird found beach-washed at Ballina January 1976.	No mention of NSW records, apart from a beachcast bird at Ballina 13 Jan 1976. Said to not stray far from breeding grounds (Vol 1 Part B).	Accidental	A single bird was seen sheltering during the early evening of the 28 January. This species is on the review list of the NSW Ornithological Records Appraisal Committee (ORAC). This bird was accepted as the 12th confirmed record for NSW (NSW ORAC) and the 4th for the Hunter Region. A beachcast Red-footed Booby was found dead at South West Rocks on 29 January (Birdline NSW).

**Table 1.** Accounts of species observed in the Hunter Region during Tropical Cyclone Oswald, January - February 2013 (cont.)

Species	Status in NSW / Hunter Region			HBOC Checklist (Stuart 2012a)	Occurrence within the Hunter Region during Cyclone Oswald and Other Comments
	NSW Handlist (Morris <i>et al.</i> 1981)	Handbook of Australian, New Zealand and Antarctic Birds (Marchant & Higgins 1990, 1993; Higgins & Davies 1996)			
Black Noddy <i>Anous minutus</i>	Five records: live birds captured Terrigal March 1969; Forster 1972; Toronto March 1978. Sight records Long Reef February 1967; Coffs Harbour May 1977.	“Rare visitor” (Vol 3).	Accidental	It is difficult to be certain, but it is likely that there was more than one Black Noddy present. Some sightings were made of a bird that had an orange “object” dangling from one of its legs (photographed), whilst other photographed birds did not. Several Black Noddies were reported along the NSW coast during Oswald, the most southerly being at Jervis Bay (Birdline NSW). This is only the 2 <sup>nd</sup> record for this species within the Hunter Region.	
Sooty Tern <i>Onychoprion fuscata</i>	Scarce. Visitor; recorded all months, mainly August-March (found beachwashed mainly February). Continental shelf and pelagic waters. Recorded south to about Bermagui.	“Uncommon but widespread on coast, from Qld border S to waters off Cape Dromedary, near Bermagui, mainly after strong winds” (Vol 3).	Rare summer migrant	The numbers of Sooty Terns off the Hunter Coastline would have been in the hundreds, probably thousands. Birds were observed inland, over the city of Newcastle, making landfall, and there were several reports of 50+ and some of 100+ birds seen on the ocean. Furthermore, reports came from several parts of the Hunter coastline. The numbers of Sooty Terns dwindled markedly from the afternoon of 30 January. Not surprisingly, similar trends in the reports of Sooty Terns were seen along the NSW coastline, and the numbers of birds present in NSW waters at the time must have been staggering.	
Bridled Tern <i>Onychoprion anaethetus</i>	No records	No mention of NSW records at all in Vol 3 (though records for SA and Tasmania discussed).	This is the first recorded for the Hunter Region	A single bird was first sighted from Fort Drive on the afternoon of 30 January. A Bridled Tern was seen about 90 minutes later from the end of Nobbys Breakwall, assumed to be the same bird. The last report was from Nobbys Breakwall on the afternoon of 31 January. This species is on the review list of the NSW Ornithological Records Appraisal Committee (ORAC). This bird was accepted as the 14 <sup>th</sup> confirmed record for NSW (NSW ORAC) and the 1 <sup>st</sup> for the Hunter Region.  Elsewhere in NSW, a remarkable 31 Bridled Terns came to roost on the evening of 30 January at Flat Rock, near Ballina (Birdline NSW; record yet to be assessed by NSW ORAC). There were no other reports in NSW.	