

# Swifts over the Hunter Region

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Because swifts spend all day and at least part of the night in flight, observers need to develop different habits to those used to record numbers and behaviour of birds in trees or in swamps. When we remember to look up high over forests and ridges we can be rewarded by seeing unusual behaviour. In the Hunter Region the largest flock of White-throated Needletails *Hirundapus caudacutus* recorded was 6,000 birds, while the largest Fork-tailed Swift *Apus pacificus* flock was of 3,000 birds. This might be deceptive as the Needletail is now in decline, while the Fork-tailed Swift population appears to be more stable. These population assessments are based on estimates and counts of flock sizes recorded by observers.

## INTRODUCTION

Most of what David Lack wrote on the first page of his introduction to his book “Swifts in a Tower” in 1956, still applies. He said “the swift’s dependence on the air brings many benefits but also a great danger. Its magnificent flight enables it to take all its food and nesting material from the air and [in some species] to spend the night on the wing, while except when weakened or surprised it can outfly birds of prey. But the air-borne insects upon which it relies for food become extremely scarce in bad weather, and the danger of starvation can be overcome only by unusual behaviour and other adaptations.”

Lack was primarily referring to the Common Swift *Apus apus*, but most of those strengths and weaknesses apply to the swifts that part the air over the Hunter Valley. In fact the Fork-tailed Swift *Apus pacificus* being in the same genus as the Common Swift may have all of those abilities. When food is scarce both the Fork-tailed Swift and the White-throated Needletail *Hirundapus caudacutus* will travel to the windward side of mountains, hilly ridges, or a belt of trees, where the rising air not only reduces the energy needed to stay afloat, but also uplifts a smorgasbord of aerial prey to their upstairs dining room. They will also use rising air thermals on hot days for the same two purposes, or to gain height beyond normal human vision, then glide off to a distant feeding ground, while expending very little energy. You need your binoculars or scope to witness the latter events.

## METHODS

Data were initially collected from observations where dates and numbers of birds were recorded when published in national and regional bird journals. These were added to my own observations and those from bird and naturalist club newsletters, data from the three BirdLife Australia (BLA) Bird Atlas phases, and those published on the internet. From the Hunter Region many reports came from the Hunter Region Annual Bird Reports, from e-mails direct from the observers, and observations in the Hunter Bird Observers Club (HBOC) Hunterbirding on-line forum.

## RESULTS

I have spent about 30 years gleaning as many sightings of swifts from all parts of Australia, from as many sources as possible. These data show that the Needletail is much more common in the Hunter Region (with 1936 sightings) than the Fork-tailed Swift (with 278 sightings). The Hunter Region distributions of these species based on records submitted to the BLA Birdata archive are shown in Figure 1.

### White-throated Needletail

The largest flock of Needletails in the Hunter Region was about 6,000 birds recorded by John Hobbs, at Maitland on 9 December 1959. A flock of 2,000 was seen at Mungo Brush on 5 January 2014 by Alan Curry. Flocks of 1,000 were recorded south of Newcastle on 16 December 1967 by Glenn Holmes; at Sandy Hollow, west of Newcastle on 16 February 1997 by Peter Mackie;

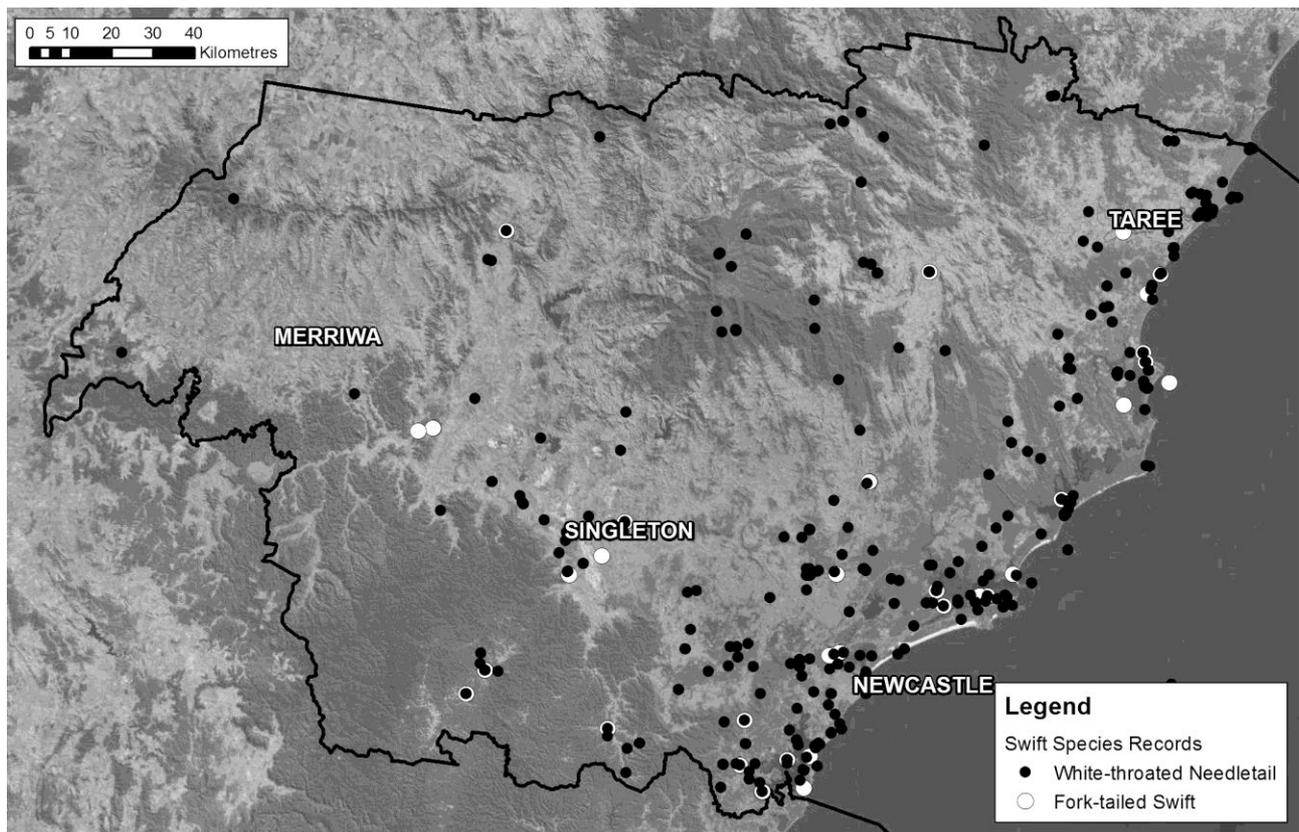


Figure 1. Distribution of White-throated Needletail and Fork-tailed Swift records in the Hunter Region based on BLA Birdata archive for the period 1998-2013.

above the Pacific Highway at Belmont on 19 November 2009 by Martin Cachard and on 28 November 2010 by Craig Anderson; at Limeburners Creek Road on 28 December 2012 by Joshua Bergmark; and above Cabbage Tree Island off Hawks Nest on 10 December 2013 by Chris Lloyd.

That four of these flocks were seen in the last five years is misleading if it makes us think that these birds are increasing in numbers. With more observers than ever many more small flocks are also being seen. So assuming that decreased flock sizes imply less swifts we need to average the flock size over periods of time to determine the trend of the population – if indeed there is any. When we group the data as in Table 1, it is clear that in the Hunter Region there is a decline in Needletails, as has been shown for the Australia-wide wintering population (Tarburton 2014). Unfortunately the pre-1990 counts are too few to give the statistically significant results that we get from the more numerous national data. But by grouping all the pre-1970 data and the 1971-1990 data, the downward trend in the mean size of the flocks can be seen.

Table 1. Flock Size statistics for White-throated Needletails in the Hunter Region.

Period <sup>1</sup>	<1970	1971-1990	1991-2000	2001-2010	>2010
Mean	134	121	51	46	47
<i>n</i>	87	18	95	483	667
SD	649	129	112	90	116
SE	70	30	11	4	4

<sup>1</sup> For each time period the flock statistics are described by the mean (average) size of the flock, *n* the number of flocks reported, SD the standard deviation from the mean value, and SE the standard error of the mean.

### Fork-tailed Swift

What about the less common visitor: the Fork-tailed Swift? My earliest record from the Hunter with numbers reported is of 50 birds seen on 24 February 1969. This is a lot more recent than my earliest record for Needletails which was 27 November 1928. Does this mean Fork-tailed Swifts never used to come to the Hunter Region or that earlier observers were less confident at identifying them, or maybe they never noticed they were not Needletails, particularly when in mixed flocks? One possibility is that the drier Hunter in

recent decades is more attractive to this species or that the even drier interior is forcing them to coastal regions. Several of these factors might be working together – but we need more observations to try and tease that out. Even nationally, observations from the three atlases as well as eBird show most observations are from the east coast, where most observers live. Higgins (1999) states that in Australia the Fork-tailed Swift is mostly found over the inland plains, and even though I live in southern Victoria, where they are most often reported for all of Australia, I see them more often and in larger flocks when travelling through the drier parts of Australia. These two factors suggest that the frequency of reporting is influenced by observer distribution rather than the distribution of the birds. Further evidence comes from Western Australia, where Simon Davies and Ric Elsel reported flocks of 3,000 and 5,000 swifts in October 2012 and November 2013 near the Broome Bird Observatory. No one else reported flocks of that size in 2012 and the 2013 flock was not reported again until March when Nigel Jacket reported them on several days along the NW Coastal Highway. In most years I believe large flocks tour outback Australia, but go unreported, because observers tend to visit those areas when the swifts are in the Northern Hemisphere.

The data in Table 2 do not support a decline, but because the sample sizes are small and the flock size range so large, the differences lack statistical significance. The national data also fails to support the notion of a decline in this species.

Table 2. Flock Size for Fork-tailed Swifts in the Hunter Region.

Period <sup>1</sup>	<1990	1991-2000	2001-2010	>2010
Mean	16	39	68	43
<i>n</i>	13	24	70	56
SD	17	57	361	150
SE	5	12	43	20

<sup>1</sup> For each time period the flock statistics are described by the mean (average) size of the flock, *n* the number of flocks reported, SD the standard deviation from the mean value, and SE the standard error of the mean.

## DISCUSSION

Has clearing and mining the Hunter Region reduced the local swift population? It probably has when we consider that uncleared areas such as Bulahdelah produce so many sightings. Paul Osborne sent me 94 Needletail sightings from the Bulahdelah area between October 2006 and

January 2011. I have 144 observations in total from Bulahdelah. Even Newcastle with so many observers has provided only 137 sightings of Needletails in total.

Improve your observational skills by just remembering to periodically lift your eyes above the waterbodies and tree canopy, which will enable you to see swifts more often. In some forest areas, looking upwards through your binoculars will increase the number of sightings you make. This season I have watched a lot of Needletail flocks that were too high to be seen by normal vision for all or most of the time they were being observed. This has been up to 2.5 hours, when birds were at 900 – 1,800m directly above me. Observing high-flying swifts through your binoculars will mean you are more likely to see pairs engaging in co-ordinated display flights, where they maintain a fixed distance between each other (usually 20cm to 2m) while doing loops, rolls, twists, turns and power dives. When performing the latter they easily reach speeds in excess of 200kph, making for exciting birding.

Assuming we can apply the knowledge about Common Swifts in Europe to the Needletails, then one advantage of maintaining their pair bond through the non-breeding season is that these birds are usually the first ready to breed each season. The first birds returning to the breeding ground with their mate, get to use the safest nests located in areas with the best food supply, and so raise larger broods than the unpaired late-comers.

Swifts are designed to fly at high altitudes. Palomeque *et al.* (1980) showed that their blood's ability to take oxygen from the air in the three species tested was equal to birds that live above 2500m. Some of the other implications of their high haematocrit readings and body design as they relate to their high-flying altitudes during migration are discussed in Tarburton (2009). The year after that paper was published Andrew Bell, a pilot flying regularly into Darwin, reported that he often saw Fork-tailed Swifts at around 1000m both north and south of Darwin Airport, particularly late in the Austral season for non-breeding visitors.

Early in the Austral swift season you may pick moulting birds and can document the progress of their moult, as it proceeds from the inner primaries to the outer (10 each side), and the rectrices (tail feathers), innermost to the outer (5 each side). Sometimes this is easier from photographs than in real life. You might also recognise birds hatched that season by the dark striations on the white

under-tail coverts as shown in Figure 2 compared with adult plumage in Figure 3.



Figure 2. White-throated Needletail, first-year bird. Photo © Paul Walbridge.

Enjoy the Needletails while you are able as they are in a steady decline. Tarburton (2014) demonstrates they have been in decline every decade since 1950. BirdLife Australia have recently stated that they consider the sub-species of White-throated Needletail which visits Australia is eligible for listing as Vulnerable under the *Environment Protection and Biodiversity Conservation Act* 1999 based on the decline exceeding 30 percent reported by Tarburton (2014). The major cause appears to be the excessive logging of their roosting trees in Siberia; however, Australia is no longer blameless. Needletails and Short-tailed Shearwaters are the most commonly killed birds at two wind farms in Tasmania (Hull *et al.* 2013). Keep this in context as 80-83% of the bird species using the air space occupied by these two wind farms are not being killed by the turbines. The maximum velocity of the turbine blade tips is 185kph, a speed that Needletails can exceed, but somehow they are being fooled. As far as I know no other state is

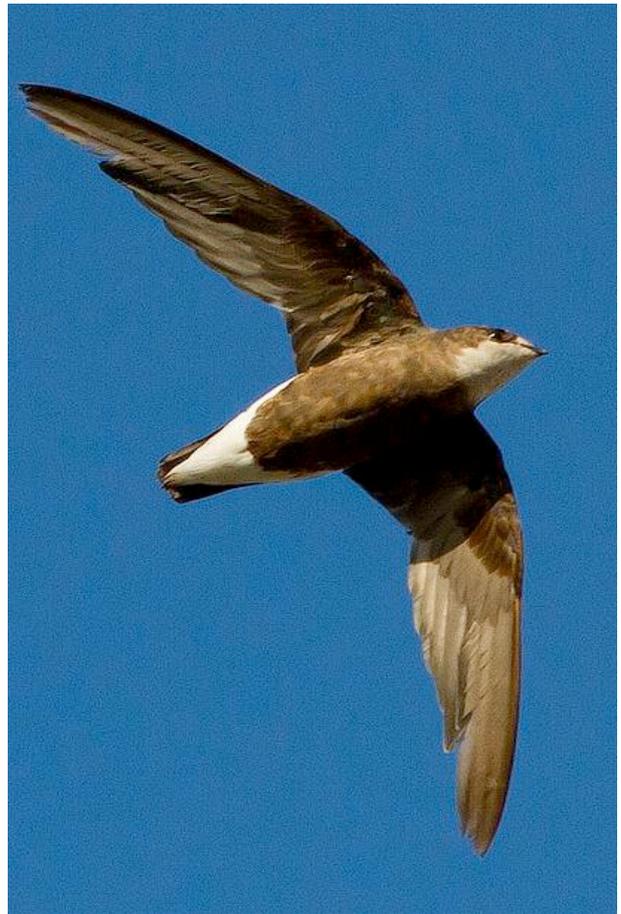


Figure 3. White-throated Needletail, Adult bird. Photo © Paul Walbridge.

studying the bird mortality on their windfarms, but just last week I picked out six recent records of dead Needletails from the biocache database (Atlas of Living Australia) on the internet, whose grid coordinates show they were collected from the Woodlawn Wind Farm in southern NSW.

Fork-tailed Swifts do not appear to be in decline, and there is no apparent evidence that the rock faces, cave entrances and rocky islets they nest on in Mongolia, China, Siberia and off shore are being mined or quarried in any extensive way. Their true numbers are difficult to determine because they do not all winter in Australia and those that do move around in the outback, where they are rarely reported. Sometimes large numbers are reported, historically from South Australia, Victoria and NSW, but the largest and most recent report was in Queensland, 30km SE of Townsville. Len Ezzy (2012) and three car-loads of bird observers contributed to an estimate of 215,000 Fork-tailed Swifts seen on 21 January 2012. This

estimate alone indicates this species is abundant, though it may take an individual observer many years to see any. Keeping an eye on the sky will help reduce that time. Figure 4 shows the features that you should be looking for to record Fork-tailed Swifts. Early in the season Fork-tailed Swifts are moulting, and when the outer tail feathers are moulting, instead of the forked-tail becoming pointed when closed it looks blunt, unlike the broader tail of the Needletail. This leads some observers to report House Swifts *Apus affinis*, but it is best to look for the scalloped markings on the flanks and bellies of the Fork-tailed Swift, or if other birds are with them compare their lengths. Fork-tailed Swifts are 17-18 cm long while House Swifts are 15 cm long.



Figure 4. Fork-tailed Swift NE Qld 5 February 2005. Photo © Ian Montgomery [birdway.com.au](http://birdway.com.au).

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