The Minister approved this conservation advice and included this species in the vulnerable category, effective from 04/07/2019.

Conservation Advice

Hirundapus caudacutus

White-throated Needletail

Taxonomy

Conventionally accepted as *Hirundapus caudacutus* Latham, 1801.

Other names: Needle-tailed, Spine-tailed or White-throated Swift, Needletail or Northern Needletail, Needle-tailed, Pin-tailed or Prickly Swallow, Prickly Tail or Prickly Swift, Storm Bird (Higgins 1999).

There are two recognised subspecies:

- subspecies *caudacutus* occurs in central and eastern Siberia, northern Mongolia, northern China and the Korean Peninsula, Sakhalin and Japan, and migrates to spend the non-breeding season in Australasia.
- subspecies *nudipes*, which breeds in the Himalayas from northern Pakistan to Assam and south-western China, and is largely resident and does not occur in Australasia (Chantler 1999; Higgins 1999).

Summary of assessment

Conservation status

Vulnerable: Criterion 1 A2(b)

The highest category for which *Hirundapus caudacutus* is eligible to be listed is Vulnerable.

Hirundapus caudacutus has been found to be eligible for listing under the following categories:
Criterion 1: A2(b): Vulnerable
Criterion 2: Not eligible
Criterion 3: Not eligible
Criterion 4: Not eligible
Criterion 5: Not eligible

The Victorian Scientific Advisory Committee undertook an assessment in 2016 and found White-throated Needletail eligible for listing. The White-throated Needletail is listed as threatened in Victoria under the *Flora and Fauna Guarantee Act 1988*.

For information on the listing status of this species under relevant state or territory legislation, see http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl

Reason for conservation assessment by the Threatened Species Scientific Committee

This advice follows assessment of information provided by a nomination from the public to list the White-throated Needletail.

Public consultation

Notice of the proposed amendment and a consultation document was made available for public comment for 37 business days between 31 October and 21 December 2018. Any comments

received that were relevant to the survival of the species were considered by the Committee as part of the assessment process.

Species/sub-species information

Description

The White-throated Needletail is a large swift with a thickset, cigar-shaped body, stubby tail and long pointed wings (20 cm in length and approximately 115–120 g in weight). Sexes are alike, with no seasonal variation in plumage. The adults have a dark-olive head and neck, with an iridescent gloss on the crown; the mantle and the back are paler, greyish; and the upperwings are blackish, sometimes with a greenish gloss, with a contrasting white patch at the base of the trailing edge; the uppertail is black with a greenish gloss. The face is dark-olive with a narrow, white band across the forehead and lores and a white patch on the chin and throat. The underparts are generally dark-olive except for a U-shaped band across the rear flanks, the vent and the undertail coverts, and the undertail is black with a greenish gloss. The underwing is black brown with glossy grey-brown flight feathers. The bill is black, the eyes black-brown and the legs and feet are dark grey, sometimes with a pinkish tinge.

Juveniles have a similar appearance to the adults, but can be separated by duller plumage, with little gloss. The pale saddle is duller, contrasting less with the head, neck and uppertail; and the white band across the forehead and white patches on the upperwings and the vent and undertail coverts are all less prominent and duller (Higgins 1999).

The White-throated Needletail is generally gregarious when in Australia, sometimes occurring in large flocks, though they are occasionally seen singly. Occasionally the species occurs in mixed flocks with other aerial insectivores, including Fork-tailed Swifts (*Apus pacificus*) and Fairy Martins (*Hirundo ariel*) (Learmonth 1950, 1951; McMicking 1925; Wheeler 1959).

Distribution

The White-throated Needletail is widespread in eastern and south-eastern Australia (Barrett et al. 2003; Blakers et al. 1984; Higgins 1999). In eastern Australia, the species is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Dividing Range and occasionally onto the adjacent inland plains. Further south on the mainland, it is widespread in Victoria, though more so on and south of the Great Dividing Range, and there are few records in western Victoria. The species occurs in adjacent areas of south-eastern South Australia, where it extends west to the Yorke Peninsula and the Mount Lofty Ranges. It is widespread in Tasmania (Barrett et al. 2003; Blakers et al. 1984; Higgins 1999).

White-throated Needletails only occur as vagrants in the Northern Territory (recorded in the Top End, including around Darwin, Katherine and Mataranka and Tennant Creek; and further south around Alice Springs) and in Western Australia (at disparate sites from the Mitchell Plateau in the Kimberley, south to the Nullarbor Plain and Augusta in the South West, and west to Barrow Island, the Houtman Abrolhos Islands and the Swan River Plain) (Barrett et al. 2003; Blakers et al. 1984; Brooker et al. 1979; Sedgwick 1978; Slater 1964; Storr 1987; Storr et al. 1986; Wheeler 1959). The species is also a vagrant to various outlying islands, including Norfolk, Lord Howe, Macquarie, Christmas and Cocos-Keeling Islands (Barrand 2005; Green 1989; McAllan et al. 2004; Schodde et al. 1983; Stokes et al. 1984; Warham 1961).

The breeding distribution of the White-throated Needletail is fragmented, with two subspecies occurring in different parts of Asia. The nominate subspecies *H. c. caudacutus* breeds from northern Japan west to central and eastern Siberia, while subspecies *H. c. nudipes* breeds from south-western China to northern Pakistan, and is largely resident (Chantler 1999).

Relevant biology/ecology

General habitat

In Australia, the White-throated Needletail is mostly aerial, from heights of less than 1 m up to more than 1000 m above the ground (Coventry 1989; Tarburton 1993). Although they occur over most types of habitat, they are recorded most often above wooded areas, including open forest and rainforest, and may also fly below the canopy between trees or in clearings (Higgins 1999). When flying above farmland, they are more often recorded above partly cleared pasture, plantations or remnant vegetation at the edge of paddocks (Emison & Porter 1978; Friend 1982; Tarburton 1993). In coastal areas, they have been observed flying over sandy beaches or mudflats (Cooper 1971; Crompton 1936; Davis 1965), and often around coastal cliffs and other areas with prominent updraughts, such as ridges and sand-dunes (Cooper 1971; Dawson et al. 1991; Loyn 1980; Mitchell et al. 1996; Schulz & Kristensen 1994).

Roosting habitat

The species roosts in trees amongst dense foliage in the canopy or in hollows (Corben et al. 1982; Day 1993; Quested 1982; Tarburton 1993, 2015).

Feeding

During the non-breeding season in Australia, the White-throated Needletail has been recorded eating a wide variety of insects, including beetles, cicadas, flying ants, bees, wasps, flies, termites, moths, locusts and grasshoppers (Cameron 1968; Madden 1982; Rose 1997; Tarburton 1993).

Life history

The species does not breed in Australia (Higgins 1999). The White-throated Needletail lays eggs from late May to early June in their breeding grounds in the Northern Hemisphere (Chantler 1999). The nest is placed in a vertical hollow in a tall coniferous tree or on a vertical rock-face, either comprising a small bracket or half-cup of thin twigs and straw cemented together by the bird's saliva and glued to the side of the hollow or rock (Roberts 1991), or a shallow scrape among debris accumulated at the bottom of a tree hollow (Chantler 1999). Clutches usually comprise two eggs (Dement'ev & Gladkov 1951; Yamashina 1962) but some may be as large as seven eggs (Chantler 1999), and these are incubated by both sexes for 40 days (Chantler 1999). The chicks fledge after 40–42 days (Chantler 1999; Dement'ev & Gladkov 1951; Yamashina 1962).

There are no published details of the ages of sexual maturity or life expectancy of the White-throated Needletail, however, the estimated generation time is 8.5 years (BirdLife International 2018).

Movement patterns

The nominate subspecies *caudacutus* is a trans-equatorial migrant, breeding in the Northern Hemisphere and flying south for the boreal winter (Higgins 1999).

Departure from breeding grounds

The species breeds in wooded lowlands and sparsely vegetated hills, as well as mountains covered with coniferous forests in eastern Siberia, north-eastern China, the Korean Peninsula and Japan. The species leaves the breeding grounds between late August and October, flying singly or in scattered flocks (Chantler 1999; Dement'ev & Gladkov 1951).

The southern passage from the breeding grounds takes needletails through eastern China and Japan between August and November (Dement'ev & Gladkov 1951), and the Korean Peninsula mainly between September and October (Gore & Won 1971). Between late September and late November, most birds apparently migrate through Borneo and along the Malay Peninsula (Higgins 1999; M. Tarburton pers. Comm.). Passage may be extremely rapid and thus poorly detected (White & Bruce 1986). In Papua New Guinea, most records, presumably of birds on southern passage, occur between September and November (Bell 1970; Coates 1985; Hicks 1990; Rand & Gilliard 1967).

Non-breeding season in Australia

White-throated Needletails mainly enter Australia via the Torres Strait, usually during September and October, and sometimes in early November (Draffan et al. 1983; Warham 1962), and less often via the Arafura Sea (Warham 1962). The mean date of the first sighting in Australia is 22 October ± 27.62 days (range of 1 September and 27 December (Higgins 1999)). After reaching Australia, they move south along both sides of the Great Dividing Range in Queensland and NSW in October and November, usually arriving in southern parts of their range (Victoria and Tasmania) in November, with increasing numbers recorded from December and peaking in March (Emison et al. 1987; Higgins 1999).

Northern passage

Northward migration from Australia begins between mid-March and April (Higgins 1999). A few birds occasionally remain in Australia during the breeding season (Higgins 1999).

When undertaking northern migration to return to their breeding grounds in the Northern Hemisphere, the majority of the White-throated Needletail population pass through New Guinea in March and April (Eastwood & Gregory 1995; Hicks 1990) and are thought to mostly travel east of Borneo (Smythies 1957, 1981). There are records of birds on northward passage through Indonesia in March and April (Coates & Bishop 1997; Smythies 1957, 1981; White & Bruce 1986), and there are records from the Malay Peninsula, between March and mid-May (Medway & Wells 1976; Wells 1999). They are also recorded passing through Hong Kong between mid-March and mid-May (Chalmers 1986; Chantler & Driessens 1995), and eastern China in May.

White-throated Needletails arrive back at their breeding grounds in the Northern Hemisphere in mid-May (Chantler 1999; Chantler & Driessens 1995; Dement'ev & Gladkov 1951).

Threats

In Australia there is evidence of collision with wind turbines (Hull 2013), overhead wires (Cameron & Hinchey 1981; Campbell 1930; Wheeler 1965), windows (Slater 1964) and lighthouses (Draffan et al. 1983; Stokes 1983) but the scale of impact at the population level requires further investigation.

Tarburton (2014) identified the use of insecticides, particularly organochlorines, as another possible cause of decline of White-throated Needletails, either through a decrease in the

abundance of invertebrates from wide use of insecticides or from secondary poisoning by insecticides accumulated as sublethal doses in the prey.

As noted in Tarburton (2014), the loss of roosting sites in Australia may also be contributing to the decline of the species. Loss of forest and woodland habitats may have also resulted in the reduction of invertebrate prey.

It is thought that logging of taiga forests in Siberia, where most of the population breeds, poses the greatest risk by removing old trees and stumps that contain hollows which this species uses to breed (Newell et al. 2000; Crowley 2005; Smirnov et al. 2013).

On the species' breeding grounds it was formerly hunted with nets placed near their breeding sites.

Table 1: Threats impacting the White-throated Needletail in approximate order of severity of risk, based on available evidence

Number	Threat factor	Threat type and status	Evidence base
1.0	Habitat loss and fragmentation		
1.1	Logging of breeding habitat	suspected current	The loss of old, hollow bearing trees in the breeding range in the northern hemisphere is suspected be impacting breeding success (Tarburton 2014).
1.2	Loss of habitat in the non-breeding range	suspected current	The loss of roosting sites in Australia may be contributing to the decline of the species. Loss of forest and woodland habitats may have also resulted in the reduction of invertebrate prey (Tarburton 2014).
2.0	Direct mortality		
2.1	Wind turbines and overhead wires	known current	Impacts from wind farms can be categorised as direct (collisions with wind turbines) and indirect (barrier and alienation, with the potential to reduce access to habitat). Collision with wind turbines and overhead wires is of low severity and affects a small number of birds (Hull 2013)
3.0	Poisoning		
3.1	Organochlorines	potential	Tarburton (2014) identified the use of insecticides, particularly organochlorines, as a possible cause of decline of White-throated Needletail, either through a decrease in the abundance of invertebrates from wide use of insecticides or from secondary poisoning by insecticides accumulated as sublethal doses in the prey.

How judged by the Committee in relation to the EPBC Act criteria and regulations

Criterion 1. Population size reduction (reduction in total numbers)
Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4

	Critically Endangered Very severe reduction	Endangered Severe reduction	Vulnerable Substantial reduction
A1	**≥ 90%**	**≥ 70%**	**≥ 50%**
A2, A3, A4	**≥ 80%**	**≥ 50%**	**≥ 30%**

A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.

A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.

A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [*(a) cannot be used for A3*]

A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

based on any of the following:

(a) direct observation [*except A3*]

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

(d) actual or potential levels of exploitation

(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites

Evidence:

Eligible under Criterion 1 A2(b) for listing as Vulnerable

Tarburton (2014) reported that based on data collected between 1998 and 2002, the *New Atlas of Australian Birds* (Barrett et al. 2003) indicated a 49 per cent decline in reporting rates (number of records as a proportion of number of surveys, adjusted for the survey method, season and size of area searched) of needletails compared with those of the first *Atlas of Australian Birds* conducted between 1977 and 1981 (Blakers et al. 1984).

Tarburton (2014) showed that with each decade after 1950 a progressive decline in the mean number of needletails counted per flock has occurred. Australia-wide trends in mean number of White-throated Needletails counted per flock have fallen from 164 ± 37.3 in 1951-1960 to 42 ± 1.7 in 2001-2010 (Tarburton 2014). These declines are continuing with more recent data indicating that the mean number of White-throated Needletails counted per flock between 2011-2017 has fallen to 36 ± 0.9.

Tarburton (2014) demonstrated that from three sites in Victoria, at the level of each eastern state and at the national scale, a 30-50 per cent decline in White-throated Needletail flock size has occurred over three generations (25.5 years).

The Committee considers that the species has undergone a substantial reduction in numbers over three generation lengths (25.5 years for this assessment), equivalent to at least 30 – 50 percent and the reduction has not ceased, the cause has not ceased and is not understood. Therefore, the species has met the relevant elements of Criterion 1 to make it eligible for listing as Vulnerable.

Criterion 2. Geographic distribution as indicators for either extent of occurrence AND/OR area of occupancy			
	Critically Endangered Very restricted	**Endangered Restricted**	**Vulnerable Limited**
B1. Extent of occurrence (EOO)	**< 100 km²**	**< 5,000 km²**	**< 20,000 km²**
B2. Area of occupancy (AOO)	**< 10 km²**	**< 500 km²**	**< 2,000 km²**
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	**= 1**	**≤ 5**	**≤ 10**
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			

Evidence:

Not eligible

Within Australia, the extent of occurrence is estimated at >20,000 sq km, and the area of occupancy estimated at >18,000 sq km. These figures are based on the mapping of point records from post 1997 species observations, obtained from state governments, museums, CSIRO, and Birdlife Australia. The EOO was calculated using a minimum convex hull, and the AOO calculated using a 2x2 km grid cell method, based on the IUCN Red List Guidelines 2014 (DotE 2015). Therefore, the species has not met a required element of this criterion.

Criterion 3. Population size and decline			
	Critically Endangered Very low	**Endangered Low**	**Vulnerable Limited**
Estimated number of mature individuals	**< 250**	**< 2,500**	**< 10,000**
AND either (C1) or (C2) is true			
C1 An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future)	**Very high rate 25% in 3 years or 1 generation (whichever is longer)**	**High rate 20% in 5 years or 2 generation (whichever is longer)**	**Substantial rate 10% in 10 years or 3 generations (whichever is longer)**
C2 An observed, estimated, projected or inferred continuing decline AND its geographic distribution is precarious for its survival based on at least 1 of the following 3 conditions:			
(a) (i) Number of mature individuals in each subpopulation	**≤ 50**	**≤ 250**	**≤ 1,000**
(a) (ii) % of mature individuals in one subpopulation =	**90 – 100%**	**95 – 100%**	**100%**
(b) Extreme fluctuations in the number of mature individuals			

Evidence:

Not eligible

Within Australia, the population size has not been quantified, but it is not believed to approach the thresholds for Vulnerable under the population size criterion (<10,000 mature individuals with a continuing decline estimated to be >10 per cent in ten years or three generations, or with a specified population structure) (BirdLife International 2018). Therefore, the species has not met this required element of this criterion.

Criterion 4. Number of mature individuals			
	Critically Endangered Extremely low	**Endangered Very Low**	**Vulnerable Low**
Number of mature individuals	**< 50**	**< 250**	**< 1,000**

Evidence:

Not eligible

The global population size has not been quantified, but the species is reported to be local and uncommon throughout much of its range (del Hoyo *et al*. 1999). Within Australia, the population size has not been quantified (BirdLife International 2018), but it is not believed to approach the thresholds for Vulnerable under the population size criterion. Therefore, the species has not met this required element of this criterion.

Criterion 5. Quantitative Analysis			
	Critically Endangered Immediate future	**Endangered Near future**	**Vulnerable Medium-term future**
Indicating the probability of extinction in the wild to be:	**≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)**	**≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)**	**≥ 10% in 100 years**

Evidence:

Not eligible

Population viability analysis has not been undertaken.

Conservation actions

Recovery plan

A Recovery Plan is not required; an approved Conservation Advice for the species provides sufficient direction to implement priority actions, mitigate against key threats and enable recovery. Management and research activities are being undertaken at international, national, state and local levels.

Primary conservation actions

Work with governments in East Asia to minimise destruction of key breeding habitats.

Important habitats in Australia are identified and protected.

Conservation and Management priorities

- Habitat loss and modifications
    - Seek the support of governments in East Asia to protect remaining old growth forests within the breeding range of the species.
    - Identify requirements of important habitat in Australia.
    - Support initiatives to improve habitat management at key sites in Australia.

Stakeholder Engagement

- Through the bilateral migratory bird consultative meetings with the Governments of Japan, China and the Republic of Korea, raise awareness of the conservation of White-throated Needletail.
- Promote the conservation, and raise the profile, of White-throated Needletail through strategic programs and educational products.
- Promote the exchange of information between governments, NGOs and communities through use of networks, publications and websites.

Survey and Monitoring priorities

- Enhance existing White-throated Needletail monitoring programs, such as BirdLife Australia's *Swift Monitoring Sites*, particularly to improve coverage in under surveyed parts of Australia.

Information and Research priorities

- Use remote sensing to assess the extent of habitat loss at the breeding grounds.
- Undertake work to more precisely assess White-throated Needletail life history, population size, distribution and ecological requirements in Australia.
- Improve knowledge about potential threatening processes including the impacts of infrastructure (i.e. wind turbines and overhead wires).
- Quantify levels of organochlorines in individuals and prey species.

Recommendations

(i) The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **including** in the list in the Vulnerable category:

Hirundapus caudacutus

(ii) The Committee recommends that there not be a recovery plan for this species.

Threatened Species Scientific Committee

27/02/2019

References cited in the advice

Barrand, P.D. (2005). White-throated Needletail *Hirundapus caudacutus*: a new bird for Christmas Island. *Australian Field Ornithology*. 22:104-105.

Barrett, G., A. Silcocks, S. Barry, R. Cunningham & R. Poulter (2003). *The New Atlas of Australian Birds*. Melbourne, Victoria: Birds Australia.

Bell, H.L. (1970). Field notes on birds of the Nomad River sub-district, Papua. *Emu*. 70:97-104.

BirdLife International (2018) Species factsheet: *Hirundapus caudacutus*. Downloaded from http://www.birdlife.org on 06/08/2018.

Blakers, M., S.J.J.F. Davies & P.N. Reilly (1984). *The Atlas of Australian Birds*. Melbourne, Victoria: Melbourne University Press.

Brazil, M. (2009). *Birds of East Asia: eastern China, Taiwan, Korea, Japan, eastern Russia*. Christopher Helm, London.

Brooker, M.G., M.G. Ridpath, A.J. Estbergs, J. Bywater, D.S. Hart & M.S. Jones (1979). Bird observations on the north-western Nullarbor Plain and neighbouring regions, 1967-1978. *Emu*. 79:176-190.

Cameron, A.C. (1968). Feeding habits of the Spine-tailed Swift. *Emu*. 68:217-219.

Cameron, R. & M. Hinchey (1981). An apparently immature White-throated Needletail in Australia. *Australian Bird Watcher*. 9:68.

Campbell, A.G. (1930). Notes on swifts. *Emu*. 29:308.

Chalmers, M.L. (1986). *Birds of Hong Kong*. Hong Kong: Hong Kong Bird Watching Society.

Chantler, P. (1999). Apodidae (swifts) species accounts. **In:** del Hoyo, J., A. Elliott & J. Sargatal, eds. *Handbook of the Birds of the World. Volume 5. Barn-owls to Hummingbirds*. Page(s) 419-457. Barcelona: Lynx Editions.

Chantler, P. & G. Driessens (1995). *Swifts*. Robertsbridge, UK: Pica Press.

Coates, B.J. (1985). *The Birds of Papua New Guinea. Volume 1*. Alderley, Queensland: Dove Publications.

Coates, B.J. & K.D. Bishop (1997). *A Guide to the Birds of Wallacea Sulawesi, The Moluccas and Lesser Sunda Islands, Indonesia*. Alderley, Queensland: Dove Publications.

Cooper, R.P. (1971). High flying swifts. *Australian Bird Watcher*. 4:79-80.

Corben, C., G. Roberts & A. Smyth (1982). Roosting of a White-throated Needletail. *Sunbird*. 12:47-48.

Coventry, P. (1989). Comments on airborne sightings of White-throated Needletails *Hirundapus caudacutus*. *Australian Bird Watcher*. 13:36-37.

Crompton, A. (1936). Spine-tailed Swift *Hirundapus caudacutus*. *South Australian Ornithologist*. 13:183-184.

Crowley, R.M. (2005). Stepping onto a moving train: The collision of illegal logging, forestry policy and emerging free trade in the Russian Far East. *Pacific Rim Law and Policy Journal* 14: 425-454.

Davis, W.A. (1965). Field notes from South Gippsland. *Australian Bird Watcher*. 2:134-138.

Dawson, P., D. Dawson, I. Reynolds & S. Reynolds (1991). Notes on the birds of Logan Reserve, southeast Queensland, 1967-1990. *Sunbird*. 21:93--111.

Day, N. (1993). Tree perching and presumed roosting of White-throated Needletails *Hirundapus caudacutus*. *Australian Bird Watcher*. 15:43-44.

del Hoyo, J., Elliott, A. & Sargatal, J. (1999). Handbook of the Birds of the World. Lynx Editions, Barcelona.

Dement'ev, G.P. & N.A. Gladkov (1951). *Birds of the Soviet Union. Volume 1*. Jerusalem: Israel Program for Scientific Translations (1969).

Draffan, R.D.W., S.T. Garnett & G.J. Malone (1983). Birds of the Torres Strait: an annotated list and biogeographic analysis. *Emu*. 83:207-234.

Eastwood, C. & P. Gregory (1995). Interesting sightings during 1993 & 1994. *Muruk*. 7:128-142.

Emison, W.B. & J.W. Porter (1978). Summer surveys of birds in the Mt Cobberas - Snowy River area of Victoria, Australia. *Emu*. 78:126-136.

Emison,W.B., C.M. Beardsell, F.I. Norman, R.H. Loyn & S.C. Bennett (1987). *Atlas of Victorian Birds*. Melbourne: Department of Conservation (Forest & Lands) & Royal Australian Ornithological Union.

Friend, G.R. (1982). Bird populations in exotic pine plantations and indigenous eucalypt forests in Gippsland, Victoria. *Emu*. 82:80-91.

Gore, M.E.J. & P.-O. Won (1971). *The Birds of Korea*. Seoul, Korea: Taewon Publishing

Green, R.H. (1989). *Birds of Tasmania*. Launceston, Tasmania: Potoroo Publishing.

Hicks, R.K. (1990). Arrival and departure dates in the Port Moresby area of migrants from the north. *Muruk*. 4:91-105.

Higgins, P.J. (ed.) (1999). *Handbook of Australian, New Zealand and Antarctic Birds. Volume Four - Parrots to Dollarbird*. Melbourne: Oxford University Press.

Hull, C.L., Stark, E.M., Peruzzo, S. & Sims, C.C. (2013). Avian collisions at two wind farms in Tasmania, Australia: taxonomic and ecological characteristics of colliders versus noncolliders. *New Zealand Journal of Zoology* 40, 47-62.

Learmonth, N.F. (1950). Observations on swifts near Portland, Vic., during summer, 1949-1950. *Emu*. 50:56-58.

Learmonth, N.F. (1951). More observations on swifts. *Emu*. 51:151-152.

Loyn, R.H. (1980). Bird populations in a mixed eucalypt forest used for production of wood in Gippsland, Victoria. *Emu*. 80:145-156.

Madden, J.L. (1982). Avian predation of the Woodwasp, *Sirex noctilio* F., and its parasitoid complex in Tasmania. *Australian Wildlife Research*. 9:135-144.

McAllan, I.A.W., B.R. Curtis, I. Hutton & R.M. Cooper (2004). The birds of the Lord Howe Island Group: a review of records. *Australian Field Ornithology*. 21:1-82.

McMicking, F.V. (1925). Spine-tailed Swifts *(Hirundapus caudacutus)* feeding on grasshoppers. *Emu*. 25:41.

Medway, L. & D.R. Wells (1976). *The Birds of the Malay Peninsula, Volume 5*. Witherby, London.

Mitchell, A., J. Peter & G. McCarthy (1996). Birds of the Ironbark Basin. *Geelong Bird Report*. 1995:29-40.

Newell, J., Lebedev, A., Gordon, D. & Rees, M. (2000). Plundering Russia's Far Eastern Taiga: Illegal Logging, Corruption and Trade. An Investigation into the Extent of Illegal Logging and Trade in the Region, along with Recommendations. Friends of the Earth Japan, Tokyo.

Pescott, T. (1983). *Birds of Geelong*. Geelong: Neptune Press.

Quested, T. (1982). Spine-tailed Swift landing in tree. *Australian Birds*. 16:64.

Rand, A.L. & E.T. Gilliard (1967). *Handbook of New Guinea Birds*. London: Weidenfeld & Nicolson.

Roberts, T.J. (1991). *The Birds of Pakistan. Volume 1, Non-passeriformes*. Karachi, Pakistan: Oxford University Press.

Rose, A.B. (1997). Notes on the diet of swifts, kingfishers and allies in eastern New South Wales. *Australian Bird Watcher*. 17:203-210.

Schodde, R., P. Fullagar & N. Hermes (1983). A review of Norfolk Island birds: past and present. *Australian National Parks and Wildlife Service Special Publication*. 8.

Schulz, M. & K. Kristensen (1994). Notes on selected bird species on the south-western coast of Tasmania, between Port Davey and Cape Sorell. *Australian Bird Watcher*. 15:265-272.

Sedgwick, E.H. (1978). A population study of Barrow Island avifauna. *West Australian Naturalist*. 14:85-108.

Slater, K.R. (1964). Spine-tailed Swift in central Australia. *Emu*. 64:72.

Smirnov, D.Y., Kabanets, A.G., Milakovsky, B.J., Lepeshkin, E.A. & Sychikov, D.V. (eds) (2013). Illegal Logging in the Russian Far East: Global Demand and Taiga Destruction. World Wildlife Fund, Moscow.

Smythies, B.E. (1957). *Chaetura caudacuta* in Borneo. *Ibis*. 99:687-688.

Smythies, B.E. (1981). *The Birds of Borneo*. Sabah, Kuala Lumpur: Sabah Society/Malayan Nature Society.

Stokes, T. (1983). Bird casualties in 1975-76 at the Booby Island Lightstation, Torres Strait. *Sunbird*. 13:53-58.

Stokes, T., W. Sheils & K. Dunn (1984). Birds of the Cocos - Keeling Islands, Indian Ocean. *Emu*. 84:23-28.

Storr, G.M. (1987). Birds of the Eucla Division of Western Australia. *Records of the Western Australian Museum*. Suppl. 27.

Storr, G.M., R.E. Johnstone & P. Griffin (1986). Birds of the Houtman Abrolhos, Western Australia. *Records of the Western Australian Museum Supplement*. 24.

Tarburton, M.K. (1993). Radiotracking a White-throated Needletail to roost. *Emu*. 93:121--124.

Tarburton, M.K. (2014). Status of the White-throated Needletail *Hirundapus caudacutus* in Australia: Evidence for a marked decline. *Australian Field Ornithology* 31, 122-140.

Tarburton. M. (2015) Swifts over the Hunter Region. *The Whistler* 9: 23-27.

Warham, J. (1961). A Spine-tailed Swift at Macquarie Island. *Emu*. 61:189-190.

Warham, J. (1962). Bird islands within the Barrier Reef and Torres Strait. *Emu*. 62:99-111.

Wells, D.R. (1999). *The Birds of the Malay Peninsula*. San Diego: Academic Press.

Wheeler, J. (1965). A boy's care of an injured bird. *Australian Bird Watcher*. 2:152-153.

Wheeler, W.R. (1959). Notes on Swifts, 1958-59. *Bird Observer*. 334:2-5.

White, C.M.N. & M.D. Bruce (1986). The birds of Wallacea. *B.O.U. Check-list*. 7.

Yamashina, Y. (1962). *Birds of Japan - A Field Guide*. Tokyo: Tokyo News Service.