



NEW ZEALAND THREAT CLASSIFICATION SERIES 21

Conservation status of New Zealand bats, 2017

C.F.J. O'Donnell, K.M. Borkin, J.E. Christie, B. Lloyd, S. Parsons and R.A. Hitchmough



Cover: Long-tailed bat, Eglinton Valley. *Photo: Colin O'Donnell.*

New Zealand Threat Classification Series is a scientific monograph series presenting publications related to the New Zealand Threat Classification System (NZTCS). Most will be lists providing NZTCS status of members of a plant or animal group (e.g. algae, birds, spiders), each assessed once every 5 years. After each five-year cycle there will be a report analysing and summarising trends across all groups for that listing cycle. From time to time the manual that defines the categories, criteria and process for the NZTCS will be reviewed. Publications in this series are considered part of the formal international scientific literature.

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Conservation status of New Zealand bats, 2017

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Abstract

The conservation status of all known New Zealand bat taxa was reassessed using the New Zealand Threat Classification System (NZTCS). A full list is presented, along with brief notes on the most important changes. This list replaces all previous NZTCS lists for bats. Of the seven taxa assessed, one taxon was classed as Nationally Critical (New Zealand long-tailed bat), and one each as Data Deficient (greater short-tailed bat), Nationally Vulnerable (northern lesser short-tailed bat), Declining (central lesser short-tailed bat), Recovering (southern lesser short-tailed bat) and Vagrant (little red flying fox). One taxon (long-tailed bat (North Island)) was classed as taxonomically indistinct from the New Zealand long-tailed bat.

Keywords: New Zealand Threat Classification System, NZTCS, conservation status, short-tailed bat, long-tailed bat, Mystacinidae, Pteropodidae, Vespertilionidae

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1. Summary

New Zealand bats have been previously classified according to their threat status in 2009 (O'Donnell et al. 2010) and 2012 (O'Donnell et al. 2013). The conservation status of these taxa was assessed using the criteria of Townsend et al. (2008). This report reviews the 2012 threat classifications and assesses whether any of the new knowledge and management actions instigated since 2012 has led to a change of status by 2017.

Five New Zealand bat taxa are still listed as Threatened or At Risk and their threat status changed only slightly (Table 1). There was one change in taxonomy between the two assessments that effected the 2017 assessment. Previously, the New Zealand long-tailed bat has been treated as two undescribed (taxonomically indeterminate) 'subspecies' in the North and South Islands. Recent analyses of the structure and phylogeography of long-tailed bat populations indicate

Table 1. Statistical summary of the status of New Zealand bat species assessed in 2012 (O'Donnell et al. 2013) and 2017 (this document).

CATEGORY	O'DONNELL et al. 2013	THIS DOCUMENT
Data Deficient	1	1
Threatened—Nationally Critical	1	1
Threatened—Nationally Endangered	1	0
Threatened—Nationally Vulnerable	2	1
At Risk—Declining	1	1
At Risk—Recovering	0	1
Vagrant	1	1
Taxonomically Indistinct	0	1
Total	7	7

there is little genetic structuring in populations (Dool et al. 2016; O'Donnell et al. 2016). Genetic data are consistent with continued, or at least very recent, genetic exchange among colonies across the species distribution. Thus, there is little support for previously designated taxa, and the long-tailed bat (North Island) was classed taxonomically indistinct from the nominate form. Treating both North Island and South Island long-tailed bats as one taxon resulted in the national population being classified as Nationally Critical, despite North Island long-tailed bats previously being assessed as Nationally Vulnerable (O'Donnell et al. 2013). This is because of concern about significant habitat loss since the previous assessment, increased impacts from vespid wasps and continuing decline reported for populations without predator control.

The only major change in threat status was the recovery of the southern lesser short-tailed bat from Nationally Endangered, in 2012, to Recovering in 2017. This reflects marked increases in their population following successful predator management in the last remaining mainland population in the Eglinton Valley (Edmonds et al. 2017; Thakur et al. 2017), and a stable or increasing population on predator-free Whenua Hou/Codfish Islands. Retaining this status is dependent on continued conservation management in the form of effective predator control during predator irruptions on the mainland, and maintaining island biosecurity protocols to eliminate the risk of predator incursions.

Caution needs to be applied to these assessments as little is known of current population trends in many populations. Predation and competition from introduced mammals, habitat degradation and disturbance are still the major factors implicated in declines (O'Donnell et al. 2010). Vespid wasps appear to be a serious problem for bats in beech forests in the north of the South Island and wasp densities have been increasing in the North Island. Emerging plant diseases (kauri dieback and myrtle rust) threaten bat roost trees in parts of their range. The impacts of climate change are also poorly understood: increasing storm damage to occupied roost trees, suboptimal hibernation conditions and increasing frequency of predator irruptions are three possible effects (Christie 2014; Czenze et al. 2016, 2017, in press). Deforestation and fragmentation continue in bat habitats, especially in the North Island (Toth et al. 2015; Ministry of Primary Industries and New Zealand Forest Owners Association, 2012, 2016). Retaining linkages among forest areas supporting bats, as well as ensuring spatial connectivity of pest control operations, are both important for retaining genetic diversity and ensuring species survival.

2. Conservation status of all known New Zealand bats, 2017

Taxa have been assessed using the criteria of Townsend et al. (2008) and arranged alphabetically by scientific name in Table 2.

Table 2. Conservation status of all known New Zealand bats, 2017.

SCIENTIFIC NAME	COMMON NAME	FAMILY NAME	STATUS	CRITERIA	QUALIFIERS
Data Deficient					
<i>Mystacina robusta</i> Dwyer, 1962	Greater short-tailed bat	Mystacinidae	Data Deficient		OL
Threatened					
<i>Chalinolobus tuberculatus</i> Forster, 1844	Long-tailed bat	Vespertilionidae	Nationally Critical	C	CD
<i>Mystacina tuberculata aupourica</i> Hill & Daniel, 1985	Northern lesser short-tailed bat	Mystacinidae	Nationally Vulnerable	C(1/1)	CD, DP, PD, RR
At Risk					
<i>Mystacina tuberculata rhyacobia</i> Hill & Daniel, 1985	Central lesser short-tailed bat	Mystacinidae	Declining	B(1/1)	RR
<i>Mystacina tuberculata tuberculata</i> Gray, 1843	Southern lesser short-tailed bat	Mystacinidae	Recovering	A	CD, RR
Non-resident Native					
<i>Pteropus scapulatus</i> Peters, 1862	Little red flying fox	Pteropodidae	Vagrant		
Taxonomically Indistinct					
<i>Chalinolobus tuberculatus</i> (North Island) Forster, 1844	Long-tailed bat (North Island)	Vespertilionidae	Taxonomically indistinct		

See Townsend et al. (2008) for details of criteria and qualifiers, which are abbreviated as follows:

- CD Conservation Dependent
- DP Data Poor
- OL One Location
- PD Partial Decline
- RR Range Restricted

Relevant threat categories:

Data Deficient

Taxa that are suspected to be threatened, or in some instances, possibly extinct but are not definitely known to belong to any particular category due to a lack of current information about their distribution and abundance. It is hoped that listing such taxa will stimulate research to find out the true category (for a fuller definition see Townsend et al. 2008).

Threatened

Taxa that meet the criteria specified by Townsend et al. (2008) for the categories Nationally Critical, Nationally Endangered and Nationally Vulnerable.

Nationally Critical

Criteria for Nationally Critical:

C—population (irrespective of size or number of subpopulations) with a very high ongoing or predicted decline (>70%)

C Predicted decline >70%

Nationally Vulnerable

Criteria for Nationally Vulnerable:

C—moderate population, with population trend that is declining

C(1/1) 1000–5000 mature individuals, predicted decline 10–50%

At Risk

Taxa that meet the criteria specified by Townsend et al. (2008) for Declining, Recovering, Relict and Naturally Uncommon.

Declining

Criteria for Declining:

B—large population and low to moderate ongoing or predicted decline

B(1/1) 20 000–100 000 mature individuals, predicted decline 10–50%

Recovering

Taxa that have undergone a documented decline within the last 1000 years and now have an ongoing or predicted increase of > 10% in the total population or area of occupancy, taken over the next 10 years or three generations, whichever is longer. Note that such taxa that are increasing but have a population size of < 1000 mature individuals (or total area of occupancy of < 10 ha) are listed in one of the Threatened categories, depending on their population size (for more details see Townsend et al. (2008)).

Criteria for Recovering:

A 1000–5000 mature individuals or total area of occupancy ≤ 100 ha (1 km²), and predicted increase > 10%

Non-resident Native

Taxa whose natural presence in New Zealand is either discontinuous (Migrant) or sporadic or temporary (Vagrant) or which have succeeded in recently (since 1950) establishing a resident breeding population (Coloniser).

Vagrant

Taxa whose occurrences, though natural, are sporadic and typically transitory, or migrants with fewer than 15 individuals visiting New Zealand per annum.

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