



NEW ZEALAND CLASSIFICATION SERIES 16

Conservation status of New Zealand Orthoptera, 2014

Steve Trewick, Peter Johns, Rod Hitchmough, Jeremy Hill, Alan Stringer

Department of
Conservation

Cover: Male and female cave wētā *Pachyrhamma edwardsii*, Maud Island, Marlborough Sounds, 2006. Photo: Tui De Roy.

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). There are currently 23 groups, each assessed once every 3 years. After each three-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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ISSN

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Steve Trewick¹, Peter John², Rod Hitchmough², Jeremy Rolf² and Ian Stringer³

¹ Ecology Group, Institute of Natural Resources, Massey University, Private Bag 11-222, Palmerston North, New Zealand.

² Canterbury Museum, Rolleston Avenue, Christchurch 8013, New Zealand.

³ Department of Conservation, PO Box 10420, Wellington 6143, New Zealand.

Abstract

The conservation status of all known New Zealand Orthoptera taxa (175 taxa and undescribed entities) was reassessed using the New Zealand Threat Classification System (NZTCS). A full list is provided in the Appendix. The results show that 10% of taxa are classified as 'At Risk' (17 taxa), 15% as 'Threatened' (26 taxa), and 75% as 'Not Threatened' (132 taxa). The majority of taxa are classified as 'Not Threatened' (75%), with a smaller proportion classified as 'Threatened' (26%) and 'At Risk' (17%).

1.

All known New Zealand orthopteran taxa and undescribed entities (166 in 2010) (Macfarlane et al. 2010) were last assessed using the New Zealand Threat Classification System (NZTCS) in 2010 and those that were Threatened and At Risk were published by Trewick et al. (2012). Since then four Anostostomatidae have been described: two are entirely new additions and two were previously indeterminate entities listed in Trewick et al. (2012) that have now been described by Taylor-Smith et al. (2013) (*Hemideina* “*evansae*” as *Hemideina maia*, and *Hemiandrus* “*okiwi*” as *Hemiandrus electra*) (Tables 1, 2). Nine indeterminate entities have also been added (Table 1) and one entity listed by Trewick et al. (2012), *Hemiandrus* “*Dodsons*”, is now considered to be conspecific with *Hemiandrus* “*vicinus*” (Smith 2014) and is excluded from the lists here as Taxonomically Indistinct (Table 3). A duplicate listing for a cave wētā from the Poor Knights Islands was removed. These changes bring the total number of known taxa and undescribed entities classified here using NZTCS to 175 (Table 4). This is not the full orthopteran fauna because numerous undescribed entities, especially Rhabdophoridae, have yet to be individually recognised as distinct (e.g. Macfarlane et al. 2010; Taylor-Smith et al. 2013).

Of the taxa and undescribed entities classified here with the NZTCS, most are now either Not Threatened (50.2%), Naturally Uncommon (18.3%) or Data Deficient (16.6%), and only eight (4.6%) are Threatened (2 Nationally Critical, 2 Nationally Endangered, 4 Nationally Vulnerable). A further nine, excluding those that are Naturally Uncommon, are At Risk (5.1%) (1 Declining, 2 Recovering, 6 Relict) (Table 4).

Table 1. Taxa added to the NZTCS list of New Zealand Orthoptera in this document that were not in the previous assessment (Trewick et al. 2012).

NAME	FAMILY
<i>Hemiandrus</i> “sp. near focalis”	Anostostomatidae
<i>Hemiandrus</i> “small lake”	Anostostomatidae
<i>Macropathus</i> sp. A	Rhabdophoridae
<i>Macropathus</i> sp. B	Rhabdophoridae
<i>Maotoweta virescens</i> Johns & Cook, 2014	Rhabdophoridae
<i>Miotopus diversus</i> (Hutton, 1896)	Rhabdophoridae
Rhabdophoridae incertae sedis sp. A	Rhabdophoridae
Rhabdophoridae incertae sedis sp. B	Rhabdophoridae
Rhabdophoridae incertae sedis sp. C	Rhabdophoridae
<i>Petrotettix</i> sp. A	Rhabdophoridae
<i>Weta</i> sp. A	Rhabdophoridae

Table 2. Name changes affecting New Zealand Orthoptera between the publication of Trewick et al. (2012) and this document.

NAME AND AUTHORITY IN TREWICK ET AL. (2012)	NAME IN THIS DOCUMENT	FAMILY
Gen. nov. et. n. sp.	Gryllidae incertae sedis sp. A	Gryllidae
<i>Hemiandrus</i> “ <i>evansae</i> ”	<i>Hemiandrus maia</i> Taylor Smith et al. 2013	Anostostomatidae
<i>Hemiandrus</i> “ <i>Moehau</i> ”	<i>Hemiandrus</i> “ <i>elegans</i> ”	Anostostomatidae
<i>Hemiandrus</i> “ <i>Okiwi</i> ”	<i>Hemiandrus electra</i> Taylor Smith et al. 2013	Anostostomatidae
<i>Hemiandrus</i> “ <i>Tapuaenuku</i> ”	<i>Hemiandrus</i> “ <i>Tapuae-O-Uenuku</i> ”	Anostostomatidae
<i>Modicogryllus lepidus</i> (Walker, 1869)	<i>Lepidocogryllus lepidus</i> (Walker, 1869)	Gryllidae
Rhabdophoridae sp. “ <i>Poor Knights</i> ”	Rhabdophoridae aff. <i>Talitropsis</i> sp. A “ <i>Poor Knights</i> ”	Rhabdophoridae
Rhabdophoridae sp. nov.	Rhabdophoridae incertae sedis sp. D	Rhabdophoridae
‘ <i>Weta</i> ’ <i>chopardi</i> Karny, 1937	<i>Weta chopardi</i> Karny, 1937	Rhabdophoridae

Table 3. Name included in Trewick et al. (2012) that has been rejected from this document.

NAME IN TREWICK ET AL. (2012)	REASON FOR REJECTION
Genus aff. <i>Talitropsis</i> sp. "Poor Knights"	Duplicate listing for Rhabdophoridae aff. <i>Talitropsis</i> sp. A "Poor Knights"
<i>Hemiandrus</i> "Dodsons"	Now considered to be conspecific with <i>Hemiandrus</i> "vicinus"

Table 4. Statistical summary of the status of New Zealand Orthoptera taxa assessed in 2010 (Trewick et al. 2012) and 2014 (this document).

CATEGORY	TREWICK ET AL. 2012	THIS DOCUMENT
Data Deficient	19	30
Nationally Critical	1	2
Nationally Endangered	2	2
Nationally Vulnerable	3	4
Declining	1	1
Recovering	2	2
Relict	6	6
Naturally Uncommon	31	32
Not Threatened	93	87
Introduced and Naturalised	8	9
Total number of taxa	166	175

Twelve taxa and undescribed entities have had their conservation status changed since Trewick et al. (2012) (Tables 4, 5). One of these, *Hemiandrus*

CONSERVATION STATUS 2014	CONSERVATION STATUS 2010	DETERMINE	INDETERMINE	TOTAL
<i>D</i>				

2. C O

N

Taxa are assessed according to the criteria of Townsend et al. (2008), grouped by conservation status, then alphabetically by scientific name. Taxa are presented in two lists: taxonomically determinate (taxa that have been formally described and are accepted as valid, Table 7) and taxonomically indeterminate (formally described taxa whose taxonomic status is uncertain and requires further investigation, and also possibly distinct Orthoptera whose taxonomic status has yet to be determined. Table 8).

The relevant assessment criteria and Qualifiers are also listed for each taxon. For non-endemic species that are threatened internationally, the IUCN category is listed alongside the NZTCS listing.

Categories are ordered by degree of loss, with Extinct at the top of the list and Not Threatened at the bottom, above Introduced and Naturalised. The Data Deficient list is inserted between Extinct and Threatened. Although the true status of Data Deficient taxa will span the entire range of available categories, taxa are in that list mainly because they are very seldom seen, so most are likely to end up being considered threatened and some may already be extinct. The Data Deficient list is likely to include many of the most threatened species in New Zealand. The totals in the headings are taxonomically determinant species totals in that category

Extinct

Taxa for which there is no reasonable doubt—following repeated surveys in known or expected habitats at appropriate times (diurnal, seasonal and annual) and throughout the taxon's historic

Table 7. Conservation status of taxonomically determinate species.

UMBRELLA CATEGORY	CONSERVATION STATUS	NAME AND AUTHORITY	COMMON NAME	FAMILY	CRITERIA	QUALIFIERS
Data De cient	Data De cient	<i>Hemianthus lanceolatus</i> (Walker, 1869)	Ground w t	Anostomatidae		
Data De cient	Data De cient	<i>Macropathus huttoni</i> Kirby, 1906	Cave w t	Rhaphidophoridae		
Data De cient	Data De cient	<i>Pachyramma altum</i> (Walker, 1869)	Cave w t	Rhaphidophoridae		
Data De cient	Data De cient	<i>Sigaia takaha</i> Morris, 2003	Alpine grasshopper	Acrididae		RR
Data De cient	Data De cient	<i>Maotoweta virescens</i> Johns & Cook, 2014	Green moss w t	Rhaphidophoridae		
Data De cient	Data De cient	<i>Miotopus diversus</i> (Hutton, 1896)	Cave w t	Rhaphidophoridae		
Threatened	Nationally Critical	<i>Sigaia homerensis</i> Morris, 2003	Alpine grasshopper	Acrididae	A(3)	
Threatened	Nationally Endangered	<i>Brachaspis robustus</i> Bigelow, 1967 s.s.	Robust grasshopper	Acrididae	A(3/1)	CD, RR, Sp
At Risk	Declining	<i>Sigaia minutus</i> Bigelow, 1967	Alpine grasshopper	Acrididae	C(2/1)	
At Risk	Recovering	<i>Deinacrida mahoenui</i> Gibbs, 1999	Mahoenui giant w t	Anostomatidae	A	RR
At Risk	Recovering	<i>Motuweia isolata</i> Johns, 1997	Mercury Islands tusked w t	Anostomatidae	A	CD
At Risk	Relict	<i>Anisoura nicobarica</i> Ander, 1938	Northland tusked w t	Anostomatidae		DP, Sp
At Risk	Relict	<i>Deinacrida carinata</i> Salmon, 1950	Herekopare w t	Anostomatidae		CD, RR
At Risk	Relict	<i>Deinacrida heteracantha</i> White, 1842	Little Barrier giant w t	Anostomatidae		CD, RR
At Risk	Relict	<i>Deinacrida parva</i> Buller, 1895	Kaikoura giant w t	Anostomatidae		
At Risk	Relict	<i>Deinacrida rugosa</i> Buller, 1871	Cook Strait giant w t	Anostomatidae		CD, RR
At Risk	Relict	<i>Hemideina trewicki</i> Morgan-Richards, 1995	Hawke's Bay tree w t	Anostomatidae		Sp
At Risk	Naturally Uncommon	<i>Deinacrida elegans</i> Gibbs, 1999	Bluff w t	Anostomatidae		RR, Sp
At Risk	Naturally Uncommon	<i>Deinacrida fallai</i> Salmon, 1950	Poor Knights giant w t	Anostomatidae		CD, IE, RR
At Risk	Naturally Uncommon	<i>Deinacrida talpa</i> Gibbs, 1999	Giant mole w t	Anostomatidae		RR
At Risk	Naturally Uncommon	<i>Deinacrida tibiospina</i> Salmon, 1950	Mt Arthur giant w t	Anostomatidae		RR, Sp
At Risk	Naturally Uncommon	<i>Dendroplectron aucklandense</i> Richards, 1964	Auckland Island w t	Anostomatidae		CD, IE, RR
At Risk	Naturally Uncommon	<i>Hemianthus nitaweta</i> Jewell, 2007	Ground w t	Anostomatidae		OL
At Risk	Naturally Uncommon	<i>Hemianthus subantarcticus</i> (Salmon, 1950)	Ground w t	Anostomatidae		CD, IE, RR
At Risk	Naturally Uncommon	<i>Hemianthus superbus</i> Jewell, 2007	Ground w t	Anostomatidae		OL
At Risk	Naturally Uncommon	<i>Hemideina ricta</i> (Hutton, 1897)	Banks Peninsula tree w t	Anostomatidae		RR
At Risk	Naturally Uncommon	<i>Insulanopteron spinosum</i> Richards, 1970	Snares Island w t	Rhaphidophoridae		CD, IE, RR
At Risk	Naturally Uncommon	<i>Ischyroplectron isolatum</i> (Hutton, 1895)	Bounty Island w t	Anostomatidae		CD, IE, OL
At Risk	Naturally Uncommon	<i>Motuweia riparia</i> Gibbs, 2002	Raukumara tusked w t	Anostomatidae		RR
At Risk	Naturally Uncommon	<i>Notopteron campbellense</i> Richards, 1964	Campbell Island w t	Rhaphidophoridae		CD, IE, RR
At Risk	Naturally Uncommon	<i>Novopteron serratum</i> (Hutton, 1904)	Cave w t	Rhaphidophoridae		IE, RR
At Risk	Naturally Uncommon	<i>Pachyramma giganteum</i> Richards, 1962	Poor Knights cave w t	Rhaphidophoridae		CD, IE, RR
At Risk	Naturally Uncommon	<i>Paraneonetus multispinus</i> Salmon	Three Kings cave w t	Rhaphidophoridae		CD, IE, RR

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UMBRELLA CATEGORY	CONSERVATION STATUS	NAME AND AUTHORITY	COMMON NAME	FAMILY	CRITERIA	QUALIFIERS
Not Threatened	Not Threatened	Macropathus filifer Walker, 1869	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Meitoches maorica (Walker, 1869)	Crickets	Gryllidae		
Not Threatened	Not Threatened	Neonetes huttoni Chopard, 1923	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Neonetes pilosus (Hutton, 1904)	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Neonetes poduroides (Walker, 1869)	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Neonetes variegatus Brunner, 1888	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Pachyphamma acanthocerum (Milligan, 1926)	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Pachyphamma de				

Table 8. Conservation status of taxonomically indeterminate species.

UMBRELLA CATEGORY	CONSERVATION STATUS	NAME AND AUTHORITY	COMMON NAME	FAMILY	CRITERIA	QUALIFIERS
Data De cient	Data De cient	Brachaspis "Hunter Hills"	Hunter Hills grasshopper	Acrididae		RR
Data De cient	Data De cient	Hemiandrus "Longwood Range"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Hemiandrus "Mt George"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Hemiandrus "Pureora 1"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Hemiandrus "Pureora 2"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Hemiandrus "Redhills"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Hemiandrus "Richmond"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Hemiandrus "Rocklands"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Hemiandrus "small lake"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Hemiandrus "sp. near focalis"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Hemiandrus "Staveley"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Hemiandrus "Tapuae-O-Uenuku"	Ground w t	Anostomatidae		
Data De cient	Data De cient	Macropathus sp. A	Cave w t	Rhaphidophoridae		RR
Data De cient	Data De cient	Macropathus sp. B	Cave w t	Rhaphidophoridae		RR
Data De cient	Data De cient	Petrotettix sp. A	Cave w t	Rhaphidophoridae		RR
Data De cient	Data De cient	Rhaphidophoridae aff. Talitropsis sp. A "Poor Knights"	Cave w t	Rhaphidophoridae		IE, OL
Data De cient	Data De cient	Rhaphidophoridae incertae sedis sp. A	Cave w t	Rhaphidophoridae		
Data De cient	Data De cient	Rhaphidophoridae incertae sedis sp. A	Cave w t	Rhaphidophoridae		
Data De cient	Data De cient	Rhaphidophoridae incertae sedis sp. B	Cave w t	Rhaphidophoridae		
Data De cient	Data De cient	Rhaphidophoridae incertae sedis sp. C	Cave w t	Rhaphidophoridae		
Data De cient	Data De cient	Sigaas "black"	Alpine grasshopper	Acrididae		DP, RR
Data De cient	Data De cient	Sigaas "red"	Alpine grasshopper	Acrididae		RR
Data De cient	Data De cient	Weta sp. A	Cave w t	Rhaphidophoridae		
Data De cient	Data De cient	Weta chopardi Karny, 1937	Cave w t	Rhaphidophoridae		
—	Introduced and Naturalised	Pteraprotrechus sp.	Gryllacridid	Gryllacrididae		
Threatened	Nationally Critical	Hemiandrus "furovianus"	Ground w t	Anostomatidae	C	RR, Sp
Threatened	Nationally Endangered	Sigaas "yellow"	Alpine grasshopper	Acrididae	B(3/1)	OL
Threatened	Nationally Vulnerable	Hemiandrus "Cromwell"	Ground w t	Anostomatidae	C(3/1)	DP, RR
Threatened	Nationally Vulnerable	Hemideina thoracica 2n=23,24	Karikari tree w t	Anostomatidae	C(3/1)	RR
Threatened	Nationally Vulnerable	Sigaas "blue"	Alpine grasshopper	Acrididae	C(2/1)	RR
Threatened	Nationally Vulnerable	Sigaas "green"	Alpine grasshopper	Acrididae	C(2/1)	RR
At Risk	Naturally Uncommon	Brachaspis "lowland"	Grasshopper	Acrididae		RR, Sp

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Table 8 continued

UMBRELLA CATEGORY	CONSERVATION STATUS	NAME AND AUTHORITY	COMMON NAME	FAMILY	CRITERIA	QUALIFIERS
At Risk	Naturally Uncommon	Hemianthus "elegans"	Moehau w t	Anostomatidae		Sp
At Risk	Naturally Uncommon	Hemianthus "Hapuku"	Ground w t	Anostomatidae		RR
At Risk	Naturally Uncommon	Hemianthus "Horomaka"	Ground w t	Anostomatidae		RR
At Risk	Naturally Uncommon	Hemianthus "Kepiti"	Ground w t	Anostomatidae		IE, OL
At Risk	Naturally Uncommon	Hemianthus "Nokomai"	Ground w t	Anostomatidae		RR
At Risk	Naturally Uncommon	Hemianthus "Otekauri"	Ground w t	Anostomatidae		RR
At Risk	Naturally Uncommon	Hemianthus "Porters"	Ground w t	Anostomatidae		OL
At Risk	Naturally Uncommon	Hemideina thoracica 2n=11,12	Cuvier Island tree w t	Anostomatidae		RR
At Risk	Naturally Uncommon	Sigaus "Remarkables"	Alpine grasshopper	Acrididae		RR
Not Threatened	Not Threatened	Gryllidae incertae sedis sp. A	Cricket	Gryllidae		
Not Threatened	Not Threatened	Hemianthus "Cape Campbell"	Ground w t	Anostomatidae		RR
Not Threatened	Not Threatened	Hemianthus "disparalis"	Ground w t	Anostomatidae		
Not Threatened	Not Threatened	Hemianthus "Onokis"	Ground w t	Anostomatidae		
Not Threatened	Not Threatened	Hemianthus "saxatilis"	Ground w t	Anostomatidae		
Not Threatened	Not Threatened	Hemianthus "Timaru"	Ground w t	Anostomatidae		
Not Threatened	Not Threatened	Hemianthus "vicinus"	Ground w t	Anostomatidae		
Not Threatened	Not Threatened	Hemianthus "Waimakariri"	Ground w t	Anostomatidae		RR
Not Threatened	Not Threatened	Isoplectron n. spp. (3)	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Neonetus n. spp. (9)	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Pachyrhamma n. spp. (>11)	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Pharmacus? n. spp. (3)	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Phaulacridium n. spp. (3)	Short-horned grasshopper	Acrididae		
Not Threatened	Not Threatened	Pleiopteron n. spp. (3)	Cave w t	Rhaphidophoridae		
Not Threatened	Not Threatened	Talitropsis n. sp.	Cave w t	Rhaphidophoridae		
—	Taxonomically indistinct	Genus aff. Talitropsis sp. "Poor Knights"	Cave w t	Rhaphidophoridae		
—	Taxonomically indistinct	Hemianthus "Dodsons"	Ground w t	Anostomatidae		



- B(1/1) 250–1000 mature individuals, predicted decline 50–70%
- B(2/1) ≤ 5 subpopulations, ≤ 300 mature individuals in the largest subpopulation, predicted decline 50–70%
- B(3/1) Total area of occupancy ≤ 10 ha (0.1 km^2), predicted decline 50–70%



C Predicted decline $> 70\%$

Taxonomically determinate: 1

Taxonomically indeterminate: 1

Nationally Endangered

Criteria for Nationally Endangered:



- A(1/1) 250–1000 mature individuals, predicted decline 10–50%
- A(2/1) ≤ 5 subpopulations, ≤ 300 mature individuals in the largest subpopulation, predicted decline 10–50%
- A(3/1) Total area of occupancy ≤ 10 ha (0.1 km^2), predicted decline 10–50%



- B(1/1) 250–1000 mature individuals, stable population
- B(2/1) ≤ 5 subpopulations, ≤ 300 mature individuals in the largest subpopulation, stable population
- B(3/1) Total area of occupancy ≤ 10 ha (0.1 km^2), stable population



- C(1/1) 1000–5000 mature individuals, predicted decline 50–70%
- C(2/1) ≤ 15 subpopulations, ≤ 500 mature individuals in the largest subpopulation, predicted decline 50–70%
- C(3/1) Total area of occupancy ≤ 100 ha (1 km^2), predicted decline 50–70%

Taxonomically determinate: 1

Taxonomically indeterminate: 1

Nationally Vulnerable

Criteria for Nationally Vulnerable:



- A(1/1) 250–1000 mature individuals, predicted increase $> 10\%$
- A(2/1) ≤ 5 subpopulations, ≤ 300 mature individuals in the largest subpopulation, predicted increase $> 10\%$
- A(3/1) Total area of occupancy ≤ 10 ha (0.1 km^2), predicted increase $> 10\%$



- B(1/1) 1000–5000 mature individuals, stable population
- B(2/1) ≤ 15 subpopulations, ≤ 500 mature individuals in the largest subpopulation, stable population
- B(3/1) Total area of occupancy ≤ 100 ha (1 km^2), stable population



- C(1/1) 1000–5000 mature individuals, predicted decline 10–50%
- C(2/1) ≤ 15 subpopulations; 500 mature individuals in the largest subpopulation, predicted decline 10–50%
- C(3/1) Total area of occupancy ≤ 100 ha (1 km²), predicted decline 10–50%



- D(1/1) 5000–20000 mature individuals, predicted decline 30–70%
- D(2/1) ≤ 15 subpopulations and 1000 mature individuals in the largest subpopulation, predicted decline 30–70%
- D(3/1) Total area of occupancy ≤ 1000 ha (10 km²), predicted decline 30–70%



- E(1/1) 20000–100000 mature individuals, predicted decline 50–70%
- E(2/1) Total area of occupancy ≤ 10 000 ha (100 km²), predicted decline 50–70%

Taxonomically determinate: 0
 Taxonomically indeterminate: 4

At Risk

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

Declining

Criteria for Declining:



- A(1/1) 5000–20 000 mature individuals, predicted decline 10–30%
- A(2/1) Total area of occupancy ≤ 1000 ha (10 km²), predicted decline 10–30%



- B(1/1) 20000–100000 mature individuals, predicted decline 10–50%
- B(2/1) Total area of occupancy ≤ 10 000 ha (100 km²), predicted decline 10–50%



- C(1/1) > 10000 mature individuals, predicted decline 10–70%
- C(2/1) Total area of occupancy > 1000 ha (100km²), predicted decline 10–70%

Taxonomically determinate: 1
 Taxonomically indeterminate: 0

Recovering

B 5000–20000 mature individuals or total area of occupancy 1000 ha
(10 km²), and predicted increase > 10%

Taxonomically determinate: 2

Taxonomically indeterminate: 0

Relict

Taxa that have undergone a documented decline within the last 1000 years, and now occupy < 10% of their former range and meet one of the following criteria:

Criteria for Relict:

A

Taxonomically Indistinct

Taxonomically indistinct taxa were listed previously but are now considered to be conspecific with other taxa. They are included here so that they can be reconciled with the previous NZTCS assessment of Trewick et al. (2012).

Taxonomically determinate: 0

Taxonomically indeterminate: 2

Qualifiers

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

CD