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Conservation status of Lepidoptera (moths and butterflies) in Aotearoa New Zealand, 2025

Robert J.B. Hoare, Eric D. Edwards, Carey Knox, Will T. Frost, and Pascale Michel



Department of
Conservation
Te Papa Atawhai



**Te Kāwanatanga
o Aotearoa**
New Zealand Government

Cover: *Kiwaia* sp. B (NZACO4226315; Cloudy Bay), Canterbury Gully, Marlborough, Threatened – Nationally Critical. Photo: Robert JB Hoare

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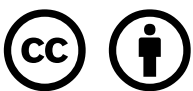
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Conservation status of Lepidoptera (moths and butterflies) in Aotearoa New Zealand, 2025

R.J.B. Hoare^{1*}, E.D. Edwards², C. Knox³, W.T. Frost⁴ and P. Michel²

¹ Bioeconomy Science Institute / Manaaki Whenua – Landcare Research, Private Bag 92170, Auckland 1072, New Zealand

² Biodiversity, Heritage and Visitors, Department of Conservation, PO Box 10420 Wellington 6143, New Zealand

³ Southern Scales, 57 Bute Street, Ranfurly 9332, New Zealand

⁴ Faculty of Agriculture and Life Sciences, Lincoln University, PO Box 85084, Ellesmere Junction Road, Lincoln 7647, Canterbury, New Zealand

* Corresponding author; email: hoarer@landcareresearch.co.nz

Abstract

The conservation status of 498 taxa of Lepidoptera (moths and butterflies) in Aotearoa New Zealand was assessed using the New Zealand Threat Classification System (NZTCS). These taxa are tabulated with a statistical summary, and important changes are noted since the previous assessment published in 2017. This replaces all previous NZTCS lists for Lepidoptera. In total, 79 taxa (15.9%) were assessed as Threatened, 152 (30.5%) as At Risk, 154 (30.9%) as Not Threatened, 8 (1.6%) as Non-resident Native and 5 (1.0%) as Introduced and Naturalised. A further 100 taxa (20.1%) were assessed as Data Deficient (i.e. insufficient information was available to assess their conservation status). Of the taxa assessed in this report, 304 taxa were assessed for the first time, and 58 taxa have not been formally described and named. The status of 19 taxa improved, and the status of 36 taxa deteriorated since they were last assessed. Twenty of the taxa previously assessed as Threatened – Nationally Critical remain in this category, and 6 additional taxa have moved into this category. Of note, 8 taxa are assessed as possibly extinct. The panel interprets the most severe threats to the Lepidoptera fauna in Aotearoa New Zealand to be habitat modification, a range of climate change impacts and the impact of invasive social wasps. Two emerging and urgent conservation challenges are the management of coastal habitats, and the retention and management of depleted native herbfield, grassland and shrubland.

Keywords: Lepidoptera, moths, butterflies, climate impact, population decline, conservation status, iNaturalist NZ, invertebrates

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1. Background

The New Zealand Threat Classification System (NZTCS) complements the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. Categories and criteria were defined to reflect Aotearoa New Zealand's unique environments and to consider the country's relatively small size and diversity of ecosystems, as well as the large number of taxa with naturally restricted ranges and/or small population sizes (de Lange and Norton 1998; Molloy et al. 2002; Townsend et al. 2008; Rolfe et al. 2022). The conservation status of Lepidoptera (moths and butterflies) in Aotearoa New Zealand was first assessed using the NZTCS in 2010 (Stringer et al. 2012) then re-assessed in 2015 (Hoare et al. 2017) and in 2025 (this report).

1.1 Scope of available information

When making their assessment, experts consider the previously published assessment as the starting point for the new assessment and evaluate any new information available, both published and unpublished. It has not been possible to visit every collection in Aotearoa New Zealand holding Lepidoptera in order to check their holdings of threatened species for this review, but the authors did visit the Brian M. Lyford collection (Queenstown) in June 2025 to extract relevant records, and we are very grateful for Brian's help and hospitality on this visit. Records were also extracted from the New Zealand Arthropod Collection (NZAC) by RJBH and from Lincoln University Entomology Collection (LUNZ) by WTF. We did not make comprehensive searches of online databases from other collections, since most records in these databases are historical, and species identification needs checking by examining images or specimens, which are often unavailable via these sources. However, published taxonomic revisions involve careful interpretation of species data and were therefore targeted for this assessment (see references). A major change since the last review has been the hugely increased number of moth recorders active on the iNaturalist NZ platform. Since records are usually accompanied by photographs that, in many cases, allow verification of a moth's identity, this platform has become an extremely useful source of distribution and occurrence data. Given the coverage now achieved by the platform, the absence of recent records of a moth on iNaturalist NZ could now be taken as an indication of a decline (at least for more conspicuous species), and we have used this data with some caution in making our assessments.

1.2 Classification process applied to Lepidoptera

Taxa are assessed according to the reported population size and trend since the last assessment and predicted future changes over the next 10 years. Generation time for Lepidoptera varies among species but is generally one year or less.

Taxa are assigned to the category Data Deficient when insufficient data are available to assess their conservation status, or are given the qualifier Data Poor Size or Data Poor Trend when assessments are made but with low confidence due to limited data. The distribution, size and trend of Lepidoptera populations is inadequately known for most species, in spite of the recent increase in interest mentioned above.

Assessment criteria and categories are interpreted in the context of scientific evidence (e.g. population monitoring) and expert understanding of the ecology of each taxon (e.g. natural population fluctuations). The NZTCS manual (Rolfe et al. 2022) requires that a precautionary approach is applied where a taxon is on the border of two possible threat categories, resulting in the most threatened category being chosen. Notes from the expert panel meeting and the rationales for the reclassification of taxa have been summarised in the present report. Full details can be found on the assessment page for each taxon on the NZTCS website (<https://nztcs.org.nz/reports/1176>).

The term ‘taxon’ (plural ‘taxa’) strictly speaking refers to all organisms belonging to any one of the ranks used in a taxonomic classification, e.g. order, family, genus, species, subspecies. So, the family Geometridae is a taxon, as are the genus *Asaphodes* and the species *Asaphodes frivola*. We use ‘taxon’ here almost exclusively to cover the ranks of species and subspecies, since this is the level at which threat assessments are made.

There remain relatively few entomologists in this country, and surveys are on an *ad hoc* basis. There was extensive Lepidoptera survey work in the last few decades of the 20th century, spearheaded by John Dugdale, Brian Patrick and Brian Lyford; but surveys have become more sporadic and targeted in recent years, and especially in the South Island alpine zone, recording effort has probably decreased. Therefore, very few species are subject to consistent monitoring, and there are large gaps in our understanding. (See also our discussion below, at the end of section 2.4.)

2. Lepidoptera fauna assessed

A total of 498 Lepidoptera taxa are assessed. RJBH maintains an unpublished checklist of Lepidoptera species recorded in Aotearoa New Zealand, updated from the latest published list (Hoare 2010). This list currently stands at 1,737 species, but only includes named species and a few unnamed species referred to in publications on adventive taxa. Likely, the total Aotearoa New Zealand Lepidoptera fauna exceeds 2,000 species. All species in the following three categories were included in the current assessment of threat status: (a) species treated in previous assessments; (b) species treated in recent taxonomic revisions (Dugdale et al. 2023; Gibbs & Kristensen 2019; Hoare 2010, 2017, 2019); (c) species suggested as needing assessment by one of the panel members.

2.1 Changes to the list of taxa

One taxon, *Cateristis eustyla* (Lyonetiidae), assessed in Hoare et al. (2017), is excluded from this assessment because evidence leads us to consider it almost certainly absent in Aotearoa New Zealand (Table 1). Although the lectotype of *C. eustyla*, designated by Dugdale (1988: 79), is stated to have been captured in Riccarton Bush, Christchurch in December 1882, the other known specimen was from Tasmania (Meyrick 1889). There are no further species records in Aotearoa New Zealand. Meyrick, who captured both specimens, moved between Australia and Aotearoa New Zealand as a schoolteacher between 1879 and 1886 (Dugdale 1988). There is at least one known case where he mislabelled an Aotearoa New Zealand specimen as coming from Australia based on a confusion of dates (the holotype of *Mermeristis spodiaea* (Oecophoridae): this is discussed more fully in Hoare (2026). Such an error seems possible though less likely in the case of *C. eustyla*, but even if the locality of the lectotype is correct, it is highly probable that the specimen was an accidental introduction to Aotearoa New Zealand. Meyrick had been in Tasmania earlier in December 1882, and on the day that he reports on the capture of *C. eustyla* in Riccarton Bush in his diary, he also mentions rearing an Australian moth, *Hemibela tyranna* (Oecophoridae), so he had clearly brought larval material with him to Aotearoa New Zealand. *Cateristis* have been found more recently in Australia, where the genus is apparently widespread, and a species that may be *C. eustyla* has been collected in the vicinity of Canberra (Horak et al. 2012). Lyonetiidae are leaf-mining moths, and although leaf-miners have been relatively well studied in both Australia and Aotearoa New Zealand, *Cateristis* has not successfully been reared. Therefore, it seems probable that the genus has been misplaced in the family and requires further study. It seems extremely unlikely that it forms a natural part of the Aotearoa New Zealand fauna.

The previous assessment included seven threatened entities of the *Notoreas perornata* complex of moths (Table 1). In 2023, Hoare et al. (2023) examined morphological and genetic evidence relating to species or subspecies status and found insufficient evidence to support recognition of the seven entities. Drawing on that evidence for this assessment, we now recognise only *N. perornata*: a widespread, brightly coloured, day-active moth (butterflylike) with isolated and vulnerable coastal populations alongside more extensive inland populations. These moths inhabit prostrate native daphnes (*Pimelea* spp.) and are threatened by habitat loss, climate impacts and paper wasps. There is significant risk of extirpation (local extinction) for many populations, particularly on North Island and South Island coasts. The panel has therefore reassessed the conservation status of the seven populations previously listed, and this information is now available for councils, iwi entities and other organisations involved in biodiversity conservation to help prevent further losses within their regions (Appendix 1).

Forty-five taxa that were assessed in Hoare et al. (2017) had a name change or a name clarification (including an identifying voucher number) since the last assessment (Table 2).

Table 1. Lepidoptera taxa that were assessed by Hoare et al. (2017) but not included in this assessment.

NAME AND AUTHORITY IN HOARE ET AL. (2017)	FAMILY	REASON FOR DELETION
<i>Cateristis eustyla</i>	Lyonetiidae (?)	Absent in New Zealand
<i>Notoreas perornata</i> "Cape Campbell"	Geometridae	Synonym of <i>Notoreas perornata</i> (Walker, 1863)
<i>Notoreas perornata</i> "Cape Turnagain"	Geometridae	Synonym of <i>Notoreas perornata</i> (Walker, 1863)
<i>Notoreas perornata</i> "Castlepoint"	Geometridae	Synonym of <i>Notoreas perornata</i> (Walker, 1863)
<i>Notoreas perornata</i> "ND/AK"	Geometridae	Synonym of <i>Notoreas perornata</i> (Walker, 1863)
<i>Notoreas perornata</i> "TK/NN"	Geometridae	Synonym of <i>Notoreas perornata</i> (Walker, 1863)
<i>Notoreas perornata</i> "WA/WN"	Geometridae	Synonym of <i>Notoreas perornata</i> (Walker, 1863)
<i>Notoreas perornata</i> "Waiho Flats"	Geometridae	Synonym of <i>Notoreas perornata</i> (Walker, 1863)

Table 2. Name changes affecting Lepidoptera taxa between publication in Hoare et al. (2017) and this report.

NAME AND AUTHORITY IN HOARE ET AL. (2017)	NAME AND AUTHORITY IN THIS REPORT	FAMILY
<i>Aletia cyanopetra</i> (Meyrick, 1927)	<i>Ichneutica sistens</i> (Guenée, 1868)	Noctuidae
<i>Archyala</i> sp. "Mataroa"	<i>Archyala</i> sp. A (NZAC04285471; Mataroa)	Tineidae
<i>Archyala</i> sp. "Mount Greenland"	<i>Archyala</i> sp. B (NZAC04239001; Mount Greenland)	Tineidae
<i>Arctesthes</i> sp. "Denniston"	<i>Arctesthes avatar</i> Patrick, Patrick & Hoare, 2019	Geometridae
<i>Arctesthes</i> sp. "Von"	<i>Arctesthes titanica</i> Patrick, Patrick & Hoare, 2019	Geometridae
<i>Bactra</i> n. sp.	<i>Bactra</i> sp. B (NZAC04285472; " <i>Empodisma</i> ")	Tortricidae
<i>Caloptilia</i> sp. "Teucidium"	<i>Sabulopteryx botanica</i> Hoare, Hoare & Patrick, 2019	Gracillariidae
<i>Chalastra</i> cf. <i>pellurgata</i>	<i>Chalastra</i> cf. <i>pellurgata</i> (NZAC04193100)	Geometridae
<i>Clepsicosma</i> sp. "Titirangi"	<i>Clepsicosma</i> sp. A (NZAC04285473; Titirangi)	Crambidae
<i>Declana</i> cf. <i>hermione</i> "Te Paki"	<i>Ipana perdita</i> Dugdale and Emmerson, 2023	Geometridae
<i>Declana griseata</i> Hudson, 1898	<i>Ipana griseata</i> Hudson, 1898	Geometridae
<i>Declana toreuta</i> grey populations	<i>Declana nigrosparsa</i> Butler, 1879	Geometridae
<i>Dichromodes</i> "Cloudy Bay"	<i>Dichromodes</i> sp. A (NZAC04193806; Cloudy Bay)	Geometridae
<i>Dichromodes</i> "Gore Bay"	<i>Dichromodes</i> sp. B (Gore Bay)	Geometridae
<i>Dichromodes</i> sp. "plain grey"	<i>Dichromodes</i> sp. C (NZAC04238764; "plain grey")	Geometridae
<i>Ericodesma</i> sp. "mingimingi"	<i>Ericodesma</i> sp. (NZAC04285499; "mingimingi")	Tortricidae
<i>Euxoa ceropachoides</i> Guenée, 1868	<i>Agrotis ceropachoides</i> Guenée, 1868	Noctuidae
<i>Gadira</i> "black brown EGW"	<i>Gadira</i> sp. (NZAC04285474; "black brown EGW")	Crambidae
"Graphania" cf. <i>tetrachroa</i>	<i>Meterana</i> cf. <i>tetrachroa</i> (NZAC04285469)	Noctuidae
<i>Gymnobathra</i> sp. "dark splash"	<i>Gymnobathra</i> sp. (NZAC04285475; "dark splash")	Xyloryctidae
<i>Kiwaia</i> "plains jumper"	<i>Kiwaia</i> sp. A (NZAC04285476; "plains jumper")	Gelechiidae
<i>Kiwaia</i> sp. "Cloudy Bay"	<i>Kiwaia</i> sp. B (NZAC04226315; Cloudy Bay)	Gelechiidae
<i>Loxostege</i> sp. "salt pan"	<i>Loxostege</i> sp. (NZAC04285477; "salt pan")	Crambidae
<i>Lycaena</i> sp. "Chrystall's Beach"	<i>Lycaena</i> sp. E ("Chrystall's Beach boulder")	Lycaenidae
<i>Meterana</i> "Foveaux Strait"	<i>Meterana</i> sp. (NZAC04285478; Foveaux Strait)	Noctuidae
<i>Mnesarchaea</i> sp. "Stellae"	<i>Mnesarchella stellae</i> Gibbs, 2019	Mnesarchaeidae
<i>Musotima</i> sp. "Three Kings"	<i>Musotima</i> sp. (NZAC04285479; Three Kings)	Crambidae
<i>Orocrambus</i> "Mackenzie Basin"	<i>Orocrambus</i> sp. A (NZAC04285480; Mackenzie Basin)	Crambidae
<i>Pasiphila</i> sp. " <i>Olearia</i> "	<i>Pasiphila</i> sp. B (NZAC04285497; " <i>Olearia</i> ")	Geometridae
<i>Pasiphila</i> sp. cf. <i>magnimaculata</i>	<i>Pasiphila</i> sp. cf. <i>magnimaculata</i> (NZAC04196531)	Geometridae
<i>Pseudocoremia</i> sp. "Knobby Range"	<i>Pseudocoremia</i> sp. (NZAC04285483; Knobby Range)	Geometridae
<i>Pyrgotis</i> sp. " <i>Olearia</i> "	<i>Pyrgotis</i> sp. (NZAC04285484; " <i>Olearia</i> ")	Tortricidae
<i>Pyroderces</i> sp. "yellow"	<i>Pyroderces</i> sp. (NZAC04285485; "yellow")	Cosmopterigidae
<i>Sabatinca</i> sp. "Percy"	<i>Sabatinca bimacula</i> Gibbs, 2014	Micropterigidae
<i>Sabatinca</i> sp. "Secretary Island"	<i>Sabatinca pluvialis</i> Gibbs, 2014	Micropterigidae
<i>Scythris</i> sp. "stripe"	<i>Scythris</i> sp. (NZAC04285486; "stripe")	Scythrididae
<i>Stathmopoda</i> sp. " <i>Olearia</i> "	<i>Stathmopoda</i> sp. (NZAC04285498; " <i>Olearia</i> ")	Stathmopodidae
<i>Stigmella</i> sp. " <i>Olearia</i> "	<i>Stigmella</i> sp. A (" <i>Olearia</i> ")	Nepticulidae
<i>Stigmella</i> sp. "traversia"	<i>Stigmella</i> sp. B (NZAC04285487; " <i>Traversia</i> ")	Nepticulidae
<i>Stigmella</i> sp. "blue"	<i>Stigmella</i> sp. C (NZAC04285488; "blue")	Nepticulidae
<i>Stigmella</i> sp. "giant"	<i>Stigmella</i> sp. D (NZAC04285489; "giant")	Nepticulidae
<i>Stigmella</i> sp. "October"	<i>Stigmella</i> sp. E (NZAC04285490; "October")	Nepticulidae
<i>Theoxena</i> sp. 'non-pectinate'	<i>Theoxena</i> sp. (NZAC04285491; "non-pectinate")	Geometridae
<i>Tineidae</i> n. sp. "Matuku monster"	<i>Tineidae incertae sedis</i> n. sp. (NZAC04285493; "Matuku monster")	Tineidae
<i>Trachypepla</i> sp. "Cloudy Bay"	<i>Trachypepla</i> sp. (NZAC04285492; Cloudy Bay)	Oecophoridae

2.2 Trends

Of the 498 taxa assessed in this report, 79 taxa (15.9%) are assessed as Threatened, 152 (30.5%) as At Risk, 154 (30.9%) as Not Threatened, 8 (1.6%) as Non-resident Native and 6 (1.0%) as Introduced and Naturalised (Fig. 1, Table 3). A further 100 taxa (20.1%) are assessed as Data Deficient (i.e. insufficient information was available to assess their conservation status). A total of 58 taxa have not been formally described and named. All are vouchered in institutional collections for reference and future taxonomy.

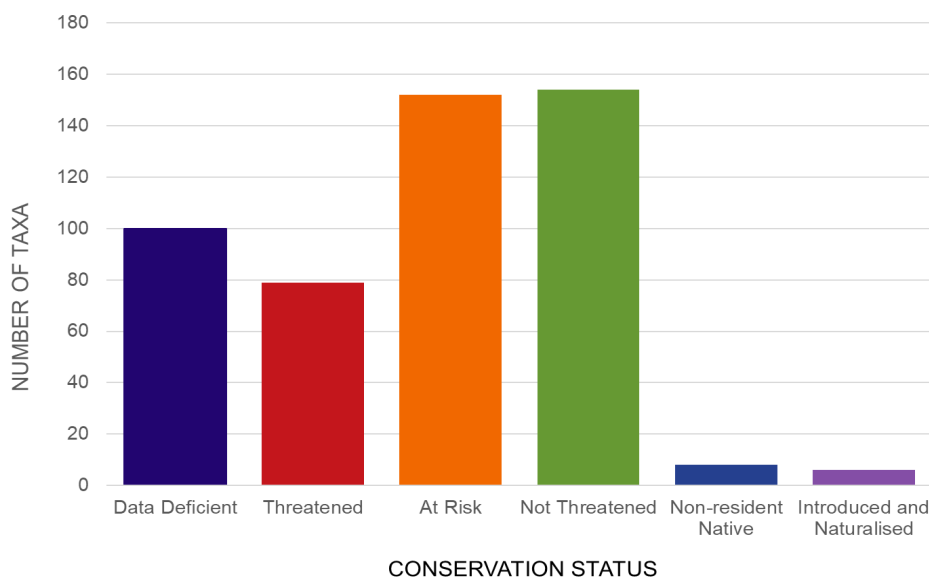


Figure 1. Number of Lepidoptera taxa per NZTCS categories in 2025. Note: over 1,200 Lepidoptera taxa were not assessed.

Table 3. Comparison of the conservation status of Lepidoptera taxa in Aotearoa New Zealand assessed in 2010 (Stringer et al. 2012), in 2015 (Hoare et al. 2017) and 2025 (this report).

CONSERVATION STATUS	2010	2015	2025
Data Deficient	56	47	100
Threatened – Nationally Critical	13	25	30
Threatened – Nationally Endangered	9	12	16
Threatened – Nationally Vulnerable	27	29	33
At Risk – Declining	16	13	68
At Risk – Uncommon ^a	53	64	84
Not Threatened	13	12	154
Non-resident Native – Vagrant	0	0	6
Non-resident Native – Coloniser	0	0	2
Introduced and Naturalised	0	0	5
Total	187	202	498

^a The statuses At Risk – Naturally Uncommon and At Risk – Relict defined in Townsend et al. (2008) and used in 2010 and 2014 have been combined and renamed At Risk – Uncommon following Rolfe et al. (2022).

2.2.1 Improved status

Since the last assessment in 2015 (Hoare et al. 2017), 19 taxa have an improved status. However, none are believed to have experienced a genuine improvement (Tables 4 and 5). All changes are due to improved knowledge or reinterpretation of data.

Table 4. Summary of status changes of Lepidoptera taxa between 2015 (rows; Hoare et al. 2017) and 2025 (columns; this report). Numbers on the diagonal (shaded black) represent those taxa that have not changed status between 2015 and 2025, numbers to the right of the diagonal (shaded green) represent taxa with an improved status, numbers to the left of the diagonal (shaded pink) represent taxa with a poorer status (e.g. two taxa have moved from Threatened – Nationally Endangered in 2015 (Hoare et al. 2017) to Threatened – Nationally Critical in 2025 (this assessment), and numbers without shading represent taxa that either have moved into or out of Data Deficient, are Non-resident Native, have been newly added to this assessment, or have not been assessed in this report because they are now considered absent in Aotearoa New Zealand (NA).

		CONSERVATION STATUS 2025											
		Total	DD	NC	NE	NV	Dec	Unc ^a	NT	Col	Vag	IN	NA ^b
		507	100	30	16	33	68	84	154	2	6	5	8
CONSERVATION STATUS 2015	Data Deficient (DD)	47	36			1	4	5					1
	Threatened – Nationally Critical (NC)	25	1	17	1		2	1					3
	Threatened – Nationally Endangered (NE)	12		2	6	1	2						1
	Threatened – Nationally Vulnerable (NV)	29	3	2	1	12	8						3
	At Risk – Declining (Dec)	13	1			2	7	2	1				
	At Risk – Uncommon (Unc) ^a	46	8	2		6	7	23					
	At Risk – Relict (Unc) ^a	18	2		2	2	7	5					
	Not Threatened (NT)	12	1				1	2	7			1	
	Non-resident Native – Colonisers (Col)	0											
	Non-resident Native – Vagrant (Vag)	0											
	Introduced and Naturalised (IN)	0											
New Listing	304	48	7	6	9	30	46	146	2	6	4		

a The status At Risk – Naturally Uncommon and At Risk – Relict defined in Townsend et al. (2008) and used in 2015 (Hoare et al. 2017) have been renamed At Risk – Uncommon in this assessment following Rolfe et al. (2022).

b NA = not assessed.

Five taxa were moved out of the category Threatened – Nationally Critical. These are:

Scythris sp. (NZACO4285486; “stripe”) – (moved to Threatened – Nationally Endangered). Formerly known only from a single specimen collected by John Dugdale at Birdlings Flat on the Canterbury coast on 31 Oct. 1987. It has not been rediscovered there, in spite of intensive searches by Brian Patrick, who was resident at the locality for several years. Brian rediscovered the species on Banks Peninsula (Canterbury Region) in Dec. 2014. Since then, two records have been posted on iNaturalist NZ (Sugarloaf Scenic Reserve, 1 May 2022, J. Sullivan, <https://inaturalist.nz/observations/116002310>, and near Āwaroa / Godley Head in Canterbury Region, 31 May 2025, M. Whiting, <https://inaturalist.nz/observations/285550497>), both of adults feeding at flowers of the native herb *Oxalis exilis*. Moths of the family Scythrididae are notoriously elusive as adults, and this species may well have been overlooked. The panel weighed its recent presence at three different locations and other data in its decision to downgrade the status. However, this species’ association with short-turf open habitats and its overall very restricted area of known distribution still gives cause for concern.

Table 5. Summary of changes to the number of Lepidoptera taxa assigned to each conservation status between 2015 (Hoare et al. 2017) and 2025 (this report). A 'neutral' change is any movement into or out of Data Deficient.

TYPE OF CHANGE, REASON, CONSERVATION STATUS	NUMBER OF TAXA
BETTER	19
Criteria changed	1
At Risk – Declining	1
More knowledge	14
Threatened – Nationally Endangered	1
Threatened – Nationally Vulnerable	1
At Risk – Declining	9
At Risk – Uncommon	2
Not Threatened	1
Reinterpretation of data	4
At Risk – Declining	2
At Risk – Uncommon	2
WORSE	35
Actual decline	11
Threatened – Nationally Critical	4
Threatened – Nationally Endangered	1
Threatened – Nationally Vulnerable	4
At Risk – Declining	2
Criteria changed	1
Threatened – Nationally Vulnerable	1
More knowledge	15
Threatened – Nationally Critical	1
Threatened – Nationally Endangered	2
Threatened – Nationally Vulnerable	2
At Risk – Declining	10
Reinterpretation of data	8
Threatened – Nationally Critical	1
Threatened – Nationally Vulnerable	3
At Risk – Declining	3
At Risk – Uncommon	1
NEUTRAL	26
Greater uncertainty	16
Data Deficient	16
More knowledge	10
At Risk – Declining	4
At Risk – Uncommon	5
Introduced and Naturalised	1
NO CHANGE	114
No change	86
Data Deficient	36
Threatened – Nationally Critical	17
Threatened – Nationally Endangered	6
Threatened – Nationally Vulnerable	13
At Risk – Declining	7
Not Threatened	7
Status name changed	28
At Risk – Uncommon	28
NEW LISTING	304
Data Deficient	48
Threatened – Nationally Critical	7
Threatened – Nationally Endangered	6
Threatened – Nationally Vulnerable	9
At Risk – Declining	30
At Risk – Uncommon	46
Not Threatened	146
Non-resident Native – Vagrant	6
Non-resident Native – Coloniser	2
Introduced and Naturalised	4
TOTAL	498

Asaphodes obarata – (moved to At Risk – Declining). Recent isolated finds indicate that this moth, which has undergone a historical decline, may still be relatively widespread, and may be able to survive in small fragments of forested habitat. There are recent records from near Rotorua and from Manawatu District, as well as near Molesworth Recreation Reserve (Marlborough Region).

Orthoclydon pseudostinaria – (moved to At Risk – Declining). This species has never been common. There are recent records from the Tararua Range and Aorangi Range in the southern North Island and from Kahurangi National Park and the Paparoa Range in the northern South Island. This moth therefore seems to be more widespread than previously thought and present within large areas of protected habitat.

“*Schiffermuelleria*” *orthophanes* – (moved to At Risk – Uncommon). This moth has either increased in numbers or is now more frequently recorded due to the increased citizen science effort. Recent records are very widespread, from Whangārei (Northland Region) to Wellington in the North Island, including the Coromandel Peninsula. In Northland, large numbers have been attracted to a pheromone lure (A. El Sayed unpubl. data), indicating that populations are (at least locally) much greater than was previously known based on the small number of captures at light. Note this species belongs in the family Xyloryctidae, and following taxonomic revision will have nothing to do with the Palaearctic moth genus *Schiffermuelleria* in the family Oecophoridae.

Stigmella sp. A (“*Olearia*”) – (moved to Data Deficient). This unnamed tiny moth was recorded from Skippers Valley, Wānaka Basin (Otago Region) by Brian Patrick (Patrick 2000b); two specimens were beaten from the shrub *Olearia odorata*. The moth remains undescribed and unillustrated, so recognition is a problem. Further possible records from northern Central Otago exist on iNaturalist NZ, but cannot be confirmed without the collection and detailed examination of specimens from these sites. Therefore, the panel moved this taxon to Data Deficient.

2.2.2 Worsened status

Since the last assessment in 2015 (Hoare et al. 2017), 35 taxa have a worse status (Tables 4 and 5).

Eleven taxa have a worse status because of notable genuine declines over the last decade or more. These species are:

“*Hydriomena*” *clarkei* moved from At Risk – Declining to Threatened – Nationally Vulnerable. Recent records remain few and localised, mostly from the Von Valley and the Manuherikia River catchment in the Otago Region, but a population was recently found near Clinton, Southland Region. It belongs amongst the intermontane species of eastern South Island shrubland and tussock grassland that are in long-term decline.

Dasyuris octans moved from At Risk – Naturally Uncommon to Threatened – Nationally Critical. There are no known populations of this poorly studied Fiordland species, likely associated with the speargrass *Aciphylla congesta*. It was last seen in 1988 and has been searched for diligently by Brian Patrick in numerous expeditions. It was reported as plentiful on Flat Top Peak by Clarke (1933), so a serious decline must have occurred. This alpine species has a restricted and variable flight period, making it elusive, so hope remains that it may survive.

Dodonidia helmsii moved from At Risk – Relict to Threatened – Nationally Vulnerable. The iconic forest ringlet butterfly has retreated drastically from lowland forest localities, with wasp (*Vespula* spp.) predation on larvae a strong candidate as a major cause of decline (Potter-Craven et al. 2018; Abel 2024). Populations are now increasingly local and fragmented, and climate change (particularly reduced seasonal rainfall; Lester et al. 2017) is predicted to increase impacts by allowing *Vespula* spp. wasps to flourish in formerly

wetter areas and at ever-higher altitudes. Forest ringlets seem to be extinct or very nearly so throughout the north of Aotearoa New Zealand (Auckland and Northland), though still present on Te Hauturu-o-Toi/Little Barrier Island where *Vespula* spp. wasps are currently absent. However, the butterfly survives on the Coromandel Peninsula and in other scattered locations south to about Lewis Pass in the South Island.

Elachista helonoma moved from At Risk – Relict to At Risk – Declining. This is another moth that belongs amongst the intermontane species of eastern South Island shrubland and tussock grassland that are in long-term decline. Larvae are associated with native tussock grasses as leaf-miners, so may still be locally common, but not well recorded due to the taxonomic difficulty of this family (Elachistidae).

Ericodesma aerodana moved from At Risk – Declining to Threatened – Nationally Vulnerable. Larvae are leaf-rollers on coastal and inland daphne *Pimelea*. Especially, the coastal sites have been subject to invasion by paper wasp (*Polistes* spp.) predators and habitat modification with reduction or loss of the host plant (habitat and host are shared with *Notoreas perornata* moth populations: Geometridae) (At Risk – Declining; Fig. 2).

Helastia angusta moved from At Risk – Relict to Threatened – Nationally Endangered. An eastern South Island shrubland species, with larvae on the shrub *Helichrysum simpsonii*. There are very few recent records and whilst it has never been recorded commonly, the habitat has reduced and deteriorated due to land use change and weed invasion.

Hierodoris polita moved from At Risk – Naturally Uncommon to Threatened – Nationally Vulnerable. There were rather numerous records of this local species from rock bluffs in central and coastal Otago in the 1980s and 1990s (Hoare 2005), but there is only one recent record, from Macraes Flat (Central Otago) in 2021. Its close relative *H. frigida* has been recorded more regularly. While *H. polita* may have been overlooked to some extent, evidence points to decline.

Kiwaia sp. A (NZA04285476; “plains jumper”) moved from Threatened – Nationally Endangered to Threatened – Nationally Critical. This is one of three known *Kiwaia* species of the eastern South Island that is flightless in both sexes. This is unusual amongst moths except those that are endemic to small oceanic islands. *Kiwaia* sp. A was formerly known very locally from the Canterbury Plains, but the only recent records are from Kaitorete Spit (Canterbury Region). Its exact ecology is unknown, and it is not closely associated with *Raoulia* mats, unlike the other two flightless *Kiwaia* (*K. jeanae* and *K. sp. B*). The area of occupancy of populations appears extremely restricted, and we consider it highly vulnerable to weed invasion and stochastic events affecting its habitat.

Maoricrambus oncobolus moved from Threatened – Nationally Endangered to Threatened – Nationally Critical. This species of southern South Island damp short-turf grassland/wetland areas has declined to near extinction over the last 50 years, probably mainly as a result of weed invasion in its specialised habitat. The last known records were from the Von Valley (Otago Region) in 2007, and attempts to rediscover it there and in other former known localities, including estuaries, in recent years have failed. However, searches may have been too late in the season. Targeted and timed survey may reveal persistence in relict sites.

Pyrausta comastis moved from Threatened – Nationally Vulnerable to Threatened – Nationally Critical. This distinctive day-flying moth of the montane eastern South Island has declined drastically in the last 100 years, almost to the point of extinction. A known population at Monkey Creek in Fiordland has not been seen since 2010. Searches by RJBH and Brian Patrick in former localities failed to rediscover the moth. The only more recent record is one photographed on Ben Lomond (Otago Region) in Dec 2021 and posted on iNaturalist NZ. The life history is unknown, but evidence of past frequency of records from a wide range of former localities means that its preferred host and habitat has been in steep decline. Likely this continues.



Figure 2. *Notoreas perornata*, Ōnoke Spit, Wairarapa, Wellington Region, At Risk – Declining. Photo: Eric Edwards, December 2020

Pyrgotis pyramidias s.s. moved from At Risk – Naturally Uncommon to At Risk – Declining. As pointed out by Patrick and Dugdale (2000), *P. pyramidias* s.l. seems to consist of two ecological entities, which may be taxonomically distinct. The silver beech-feeding form is not threatened, but the mingimingi shrub-feeding form (*P. pyramidias* s.s.) from Invercargill and Rotorua is extremely restricted. Recent extensive intense shrubland fires (2022 and 2025) at Awarua peatland in Southland highlight the plight of species confined to these habitats, though no targeted survey work has been undertaken in recent years.

Six taxa have moved to Threatened – Nationally Critical, of which four were discussed above (*Kiwaia* sp. A, *Maoricrambus oncobolus*, *Pyrausta comastis* and *Dasyuris octans*). The remaining two species are:

Kupea electilis moved from Threatened – Nationally Vulnerable. As far as is known, this species is endemic to Kaitorete Spit (Canterbury Region) and it has never been found anywhere else. It is confined to restricted dune areas where the host grass *Zoysia minima* grows. The moth is threatened by proposed development and weed invasion, including wildling pine establishment. In the past hundred years, patterns of natural disturbances, promoting colonisation by *Z. minima* grass and associated moths, may well have occurred over a much wider area around the current-day locality. The female is brachypterous and flightless, and there is little or no ability for husbandry of the species or translocation. A potential additional threat may be predation by paper wasps in the area.

Scythris niphozela moved from At Risk – Naturally Uncommon. This species is also apparently endemic to Kaitorete Spit and even less known than the previous one. There is only one recent record: several were seen by Brian Patrick on 10 Nov. 2012 associated with prostrate shrub *Carmichaelia appressa*, a plausible host, since other endemic southern *Scythris* are known from *Carmichaelia*. Given the intensive search of the Spit by Brian Patrick over a number of years, it seems likely that this moth is extremely rare and may be on the verge of extinction. However, further research into its status and ecology is urgently needed, as Scythrididae are especially cryptic in habits and can easily be overlooked.

2.2.3 Moved in and out of Data Deficient

Sixteen taxa were moved into Data Deficient. These include:

Endemic moths of an unvisited archipelago: four species (*Hierodoris bilineata*, *Izatha quinquejacula*, “*Lysiphragma*” *argentaria* and *Musotima* sp.) are endemic to Manawatāwhi / Three Kings Islands. No Lepidoptera specialist has ever visited these islands, and the last Lepidoptera collected there of which we are aware were a few recorded by Trevor Crosby in April 1999, which included none of those species. Therefore, the status of all these species is unknown.

Cryptic moths in groups that need taxonomic work: most of the remaining species on this list are problematic to recognise, and there may be taxonomic issues with some (e.g. *Stathmopoda aristodoxa*, which may conceivably be a rare colour form of another *Stathmopoda* species).

Distinctive but poorly known moths: the more distinctive taxa, i.e. *Stathmopoda* sp. “*Olearia*”, *Gadira* sp. “black brown” and *Helastia clandestina* have very few recent records, but have always been poorly known and are represented by few specimens in collections, so we have considered their conservation status impractical to assess robustly at present.

An additional 48 newly listed species were assessed as Data Deficient.

Ten species were moved out of Data Deficient. These are:

Stigmella sp. D (NZAC04285489; “giant”) moved to Threatened – Nationally Vulnerable. This species was confused with *Stigmella fulva* by Donner and Wilkinson (1989) and is probably the species illustrated in their fig. 8. It is very large for a nepticulid with a wingspan of c. 8 mm. It is only known from The Bluff / Motupōhue, Southland, and is probably associated with the tall shrub *Olearia arborescens*; long linear mines on this host, many of which were observed in 2018, probably belong to this species. Further survey is warranted, but the restricted known area of occurrence places this species for now as Nationally Vulnerable.

Elachista melanura moved to At Risk – Declining. This poorly known moth was rediscovered in recent years at a single shrubland site in the Waitākere Ranges in Auckland, where it was abundant. The site has characteristic plants of gumlands, and larvae almost certainly belonging to *E. melanura* were found mining the sedge *Schoenus tendo* both at this site and at a similar site in Waikumete Cemetery, Glen Eden, Auckland. The habitat association allows for a fairly robust assessment of the moth as At Risk – Declining. Threats include weed invasion (e.g. two invasive Australian shrubs, *Hakea* spp.) and fire.

Ericodesma sp. (NZAC04285499; “mingimingi”) moved to At Risk – Declining. This species has similar habitat requirements to the last but is associated with the shrub *Leucopogon fasciculatus*. It occurs in the thermal shrublands at Rotorua and in Northland gumlands, and the threats and status (At Risk – Declining) are similar to those for *Elachista melanura*.

Eudonia ustiramis moved to At Risk – Declining. A third gumland/heathland species, this one appears to be more widespread than the previous two, and has been recorded further south, in Tongariro National Park. It is difficult to recognise (like many of this subfamily Scopariinae). In addition, records from the northern South Island require verification through the dissection of adults. For the time being, due to the declining integrity and extent of habitat, it is accorded the same status as the last two species (At Risk – Declining).

Heterocrossa maculosa moved to At Risk – Declining. This is a poorly known species, but is fairly distinctive compared with many other *Heterocrossa*, so we have confidence that the

low number of records is a true reflection of its rarity. This species is associated with damp forest, and recently it has only been recorded from Otago coastal areas.

Chersadaula ochrogastra moved to At Risk - Uncommon. This species, only known from Wellington Region, has been recently recognised as common in specific small areas based on multiple photographs on iNaturalist NZ. It was described from a coastal locality, but the recent records are largely from secondary forest, suggesting that it may be more secure than previously thought.

Ichneutica sistens moved to At Risk - Uncommon. (Previously listed as Data Deficient under the name *Aletia cyanopetra*, now synonymised by Hoare (2019)). This grassland species has apparently declined in range and numbers, though is still widespread and occasionally common.

Izatha caustopa moved to At Risk - Uncommon. This species, formerly of concern (cf. Hoare 2010) has been rediscovered in recent years, with two records from Auckland Region (Titirangi and Hunua Ranges), two records from Te Papa-Kura-o-Taranaki and 17 records from Wellington Region. The larva feeds in dead wood, including that of native fuchsia. The areas of forest where it has been seen are large and it is likely to have stabilised after a historical range retraction.

“*Tinea*” *texta* moved to At Risk - Uncommon. This moth has also been rediscovered recently (2022, 2023) in Auckland Region (west Auckland and Hunua Ranges), and reared from fungus-feeding larvae (RJBH, pers. obs.). It appears to be very rare and elusive in the Waitākere Ranges but more easily found in the Hunua Ranges. One specimen was also found at Wharekahika/Hicks Bay (Gisborne District) in 2009, and one was photographed northeast of Stronvar (Wellington Region) by Christopher Stephens in 2025 <https://inaturalist.nz/observations/326307427>. Historical records range from Whangārei to Wellington, and, although the records given above are the only known ones this century, it is likely that most or all of this range is still occupied because it is rare to encounter the moth as an adult.

Titanomis sisyrota moved to At Risk - Uncommon (Fig. 3). This extremely elusive, but large and rather striking moth (common name Frosted Phoenix) had not been seen since 1959 and was at one time feared extinct (Patrick and Dugdale 2000). It was rediscovered by Swedish tourist Pav Johnsson on Stewart Island / Rakiura in March 2024. This sensational find generated more discussion on the iNaturalist NZ social media platform than any other creature. Since then, at least seventeen further examples have been reported on iNaturalist NZ, from Te Hauturu-o-Toi / Little Barrier Island, Pureora Forest Park and two well-separated locations on Stewart Island / Rakiura. Potentially, a factor in the rediscovery after such a long period, is the use of ultraviolet LED (light emitting diode) technology. These lights can be used on nights with light-moderate rain, unlike mercury vapour bulbs, and it appears that this species likes to fly in damp, humid, misty, or rainy weather. The novel spectrum of light wavelengths created by ultraviolet LED technology may also have resulted in the increased number of *T. sisyrota* sightings. Other factors are also important since two of the records were taken during the evening at a hut in a forest context. The records indicate a wide range and an association with native lowland hardwood forest habitat, suggesting that the moth is unlikely to be seriously threatened at present, in spite of a historical range reduction associated with deforestation. It may even have increased in numbers.



Figure 3. *Titanomis sisyrota* Frosted Phoenix, South Pegasus Hunters Hut, Stewart Island /Rakiura, At Risk – Uncommon. Photo: J Banga, February 2025

2.2.4 Possibly Extinct

Seven taxa were assigned the qualifier Possibly Extinct because they have not been resighted in the past 50 years. These are:

Elachista eurychora. This species appears to be only known from three specimens: the holotype collected in March 1915, and two further specimens collected in April 1925, all on the sandhills at Paekākāriki (Kapiti Coast District) by G.V. Hudson. It is doubtful whether suitable habitat survives. If not extinct, the caterpillar is likely to be a miner in a native grass from sandhills. Miner moth family Elachistidae are generally best searched for as larvae, but preliminary searches on sand dunes in west Auckland by RJBH were unsuccessful, though other *Elachista* spp. belonging to a different group were found mining sedges Cyperaceae and rushes Juncaceae.

Gymnobathra ambigua. This species occurred in the vicinity of Christchurch but has apparently not been seen for nearly 100 years. Taxonomically, *Gymnobathra* probably constitutes more than one genus based on life history strategies and genitalia, which should be addressed during future revision. *G. ambigua* has not been reared, but it belongs to *Gymnobathra sensu stricto* based on male genitalia. This group has larvae feeding in dead wood; it is unusual for dead-wood feeding Lepidoptera to be classed as threatened, because their larvae are usually able to adapt to wood from a range of plant species. However, with the almost complete deforestation of the Canterbury Plains, *G. ambigua* (if endemic to the area) may have already been severely reduced in numbers when discovered. It is nonetheless surprising that it has not turned up, e.g. in Riccarton Bush or on Banks Peninsula.

Ichneutica stulta. This species was discussed in some detail by Hoare (2019). It is somewhat hard to recognise, but at the time of that revision, appeared not to have been seen since before 1910, when it was found near Invercargill. It is likely to be a wetland or peatland species that suffered from the extensive destruction and/or drying out of these habitats following European settlement. Brian Patrick did not rediscover the species in spite of extensive surveys in the southernmost South Island in the 1980s and 1990s. However, while this publication was in the final stages of preparation, a specimen very likely to represent a male of this species was photographed in a wetland in the Catlins (Southland), by Ross Nightingale, and posted on iNaturalist NZ (www.inaturalist.org/

[observations/326581657](#)). We hope that this important find can be followed up and the rediscovery of the species confirmed.

Orocrambus ornatus. This enigmatic moth is still only known from the holotype captured at Golden Downs (Nelson Region) in January 1926. The exact locality is unknown, but most of the area is now in pine plantation. A similar and probably related species, *O. tuhualis*, is associated with sedge *Carex (Uncinia)* in forest, and there may possibly still be suitable habitat remaining even in the plantation area (S. Pawson, Scion / University of Canterbury, pers. comm. to RJBH, 2014). Species of this genus are generally quite common when found and it is a mystery why this species has proved elusive to rediscover. Given that lepidopterist John Dugdale was in Nelson for a number of years (especially following his retirement in 1995 when he collected actively), the moth must be extremely localised and rare to have been overlooked, if it still exists.

Petasactis technica. This small Tineidae family moth is still only known from the holotype collected by Meyrick at Whangārei Heads, Northland, in Dec. 1885. The wing pattern is distinctive and RJBH has searched for further material in Aotearoa New Zealand collections without success. The lapse in time since last capture (140 years) is probably the longest for any Aotearoa New Zealand species of Lepidoptera of certain taxonomic status. However, some tineoid groups of micro-moths can be highly elusive as adults and this moth is less likely to be extinct than others listed here. For example, a larger tineid that now proves to be widespread in Europe was not seen for approximately 150 years: this is *Pelecystola fraudulentella* (Lindeborg and Bengtsson 2009). An unnamed species quite similar to *P. technica* but differing in wing pattern details is common on the Chatham Islands where it is associated with dead wood. This unnamed species appears to belong to the well-known genus *Erechthias* (Erechthiinae), and genus *Petasactis* may prove to be a synonym of *Erechthias* when studied more closely.

Scoparia parachalca. This is another moth known only from the holotype now in the Natural History Museum, London. It was collected by G.V. Hudson on the stony banks of Lake Tekapo in Dec. 1899. The moth is superficially similar to a dark form of *S. ergatis*, but a genitalia dissection made by E. Munroe many years ago shows that this is a distinct species. It may lurk undetected in collections due to its nondescript appearance, but certainly has not been found in recent surveys of the Mackenzie Basin, e.g. those by E.G. White. Because this area is, or was, home to many declining moth species of short-turf habitats, such as *Delogenes limodoxa* and *Sporophyla oenospora*, and *Scoparia* species are usually associated with herbaceous swards, the authors are concerned for this species.

Xanthorhoe bulbulata. This rather conspicuous day-active moth may be the most likely species on this list to be actually extinct, although the last confirmed sighting was relatively recent, in 1991. Its history was treated in detail by Patrick (2000). The last recorded specimen came to a light trap in the Kawarau Gorge (Central Otago). This species' decline has been demonstrably catastrophic: it flew by day as well as night, was once regarded as common, and was widespread, even occurring in the southern North Island in the late 19th century. If populations remain, then they must be very restricted in distribution and small, since a lot of effort has been put into searching for the species over many years (by many experts, particularly by Brian Lyford and Brian Patrick (Patrick 2000a)). The panel has therefore designated it with the qualifier Possibly Extinct.

2.2.5 Relictual distribution

The qualifier Relict is applied to 51 taxa that we assess to have declined since human arrival in Aotearoa New Zealand to less than 10% of their former range and then stabilised. We have applied this qualifier especially based on known habitat and/or host plant requirements. Below are some examples of associations that have led us to apply this qualifier.

Species of peatlands and gumlands: there has been a significant reduction in the extent of these specialised habitats since European settlement. Nine associated species include *Ichneutica micrastra* and *I. similis* (Noctuidae), *Elachista melanura* (Elachistidae), *Houdinia flexilissima* (Pterolonchidae), *Bactra* sp. “Empodisma” and *Ericodesma* sp. “mingimingi” (Tortricidae), *Clepsicosma* sp. “Titirangi” and *Eudonia ustiramis* (Crambidae) and *Chalastra* cf. *pellurgata* (Geometridae). In the case of *H. flexilissima*, direct conservation intervention in recent years (transplanting of mining larvae inside the host rush *Sporadanthus ferrugineus*) has resulted in establishment of new populations and an improved status (Watts et al. 2013).

Species of eastern South Island short-turf grassland and wetland habitats: considerable decline is apparent for multiple species in this group. In some cases the moth species have retreated even from apparently suitable habitat. These include the crambids *Eudonia organaea*, *Maoricrambus oncobolus*, *Pyrausta comastis* and *Scoparia autochroa* and the geometrid *Paranotoreas fulva*.

Species whose host plants are highly palatable to browsing mammals: these include *Gingidiobora* sp. “Eastern Otago” on the herb *Gingidia*, *Xanthorhoe frigida* on the alpine herb *Pachycladon* and *Samana falcatella* on the shrub *Carmichaelia*.

Species of dry shrublands, including small-leaved *Olearia* shrublands: this group includes several *Helastia* species (Geometridae), such as *H. angusta*, *H. expolita*, *H. siris* and possibly *H. clandestina*, along with the *Olearia* specialist noctuid moths *Meterana grandiosa* and *M. cf. tetrachroa*.

Other species accorded as Relict have somewhat different backgrounds. *Asaphodes chlorocapna* is only recently recorded from South East Island (Rangatira) in the Chatham Islands, but was formerly present on Chatham Island (and presumably throughout the group). Reasons for its apparent range retraction are not understood, since the host plant is unknown.

Some species of forested habitats are included, especially those associated with lowland riverine forest, which is an especially depleted forest type: *Meterana octans* (host shrub *Streblus*) is in this category. The winter-flying noctuid *Ichneutica peridotea*, only known from the much-reduced forests of the Auckland Region, is also treated as Relict.

2.3 Threats

We regard the three most severe current threats to the Aotearoa New Zealand Lepidoptera fauna to be habitat change, climate change and the impact of invasive social wasps. These are all complex, multi-factorial threats that interact, e.g. climate warming may facilitate paper wasp invasion of new areas. The various wasp species among *Polistes* (paper wasps) and *Vespula* (common and German wasps) have different impacts in different habitats and geographical zones of Aotearoa New Zealand (Monks et al. 2024) (a notable case being seasonally high populations of *Vespula* present in honeydew beech forests; Lester et al. 2013).

Each threat is briefly discussed below, but much more could be said, and much further research is needed, especially at the ecosystem level (including host plant research), to understand the processes that are driving declines.

2.3.1 Documented decline mid-Canterbury

Empirical evidence of moth faunal declines is rare worldwide, but Aotearoa New Zealand has a compelling time series study carried out in mid-Canterbury (White 1991; de Jongh 2022). Intensive moth light trapping has been carried out in two depleted native grassland areas that include mostly dry but some damp habitats. The vegetation includes native and exotic grasses plus herbs, mosses,

lichens and shrubs (de Jongh 2022). Moth sampling in 1961–63, 1987–89 and 2020–21 provided a metric of moth abundance/three-hour period of night light trapping (White 1991). According to de Jongh (2022), the results (which included data from White 1991) included the following:

Average number of moths caught per trapping night declined significantly from 691 in the 1960s to 284 in the 1980s and 122 now [2021]. This represents declines of 57% since 1989 and 82% since 1961, with a 3.1% annual rate of decline that has not changed significantly across decades.

2.3.2 Other probable declines

Evidence is more circumstantial elsewhere, but it is possible similar declines are ongoing in a number of other types of ecosystems.

- *Habitat change.* A major source of concern is the ongoing and, in some cases, catastrophic decline of south-eastern South Island moths associated with native short-turf habitats, e.g. short tussock grasslands of intermontane basins, lake and tarn margins/ephemeral wetlands, and salt pans. We presume the decline to be mediated by loss of native herbaceous or low shrubby host plants when outcompeted by invasive weeds with extensive long-term establishment, including exotic grasses such as *Anthoxanthum odoratum*, but also *Hieracium*, *Pilosella*, exotic broom (*Cytisus*) or in places by wilding pines. In many cases, our understanding of the process is hampered by not knowing the host plants or the exact ecological requirements of the threatened moths. Examples of Threatened – Nationally Critical moths associated with such eastern South Island habitats are *Australothis volatilis*, *Maoricrambus oncobolus*, *Parienia mochlophorana*, *Pyrausta comastis* and *Sporophyla oenospora*. Of these species, we know the host plant only for *Australothis volatilis*. *Pyrausta comastis* and *S. oenospora*, once widespread, have each been recently recorded from just a single site. The other two species have not been seen for over 15 years.

Critical questions include whether limited grazing by exotic mammals such as sheep, hares and rabbits may, in some cases, help suppress weeds, and if so, what sort of grazing regime is most beneficial and how can any detrimental effects be minimised? Another habitat of concern, also concentrated in the eastern South Island, is ‘grey shrubland’, especially shrubland containing or dominated by small-leaved divaricating *Olearia*, which are host to many specialist moth species, as noted by Patrick (2000b); one of these, *Stathmopoda campylocha*, is placed as Threatened – Nationally Critical. Huge areas of shrubland have been cleared in the past and while the rate of loss has probably declined, remaining areas are now increasingly fragmented and vulnerable to fire and pine invasion. Some other components of shrubland, such as *Carmichaelia* spp., may be highly palatable to browsing mammals, adversely affecting associated moths such as *Scythris niphozela* (Threatened – Nationally Critical) and *Samana* spp. (At Risk – Declining).

2.3.3 Climate change impact is a particular concern for 88 species

The effects of climate change may be direct, e.g. through sea level rise, increased storm surges and loss of high alpine habitat, as extensively discussed in Brumby et al. (2025). Or climate change may indirectly mediate many other adverse effects, e.g. through expansion in the ranges and seasonal occupancy of pest animals (mice, rats and wasps) and increasing fire seasons or exacerbated weed invasion. Aotearoa New Zealand has already experienced a rise in annual average land surface temperature of 1.26 °C since 1909 (Brumby et al. 2025).

In our assessment, we attached the qualifier Climate Impact to 88 species. From a climate change perspective, we have been particularly concerned in our assessments with moths that are confined to limited coastal sites or are higher alpine specialists. Some of the coastal species were highlighted in the report by Brumby et al. (2025: table 10), and were assessed there as belonging to the highest category of vulnerability to climate change; these are *Kupea electilis*, *Kiwaia* sp. B (NZAC04226315; Cloudy Bay) and *Asaphodes frivola*. All of these are assessed as Threatened

- Nationally Critical species. Interestingly, two species of South Island intermontane areas also received the highest climate change vulnerability ranking in Brumby et al. (2025), because of the severity of the recent and anticipated changes in these drier inland sites: these were *Orocrambus sophistes* and *Stigmella* sp. A “*Olearia*”. The former species remains at Threatened - Nationally Vulnerable, but we have placed the latter species as Data Deficient due to the difficulty of recognition and the low level of recording of tiny leaf-mining moths. Its vulnerability to climate change will depend on its distribution, which needs more extensive investigation.

In general, alpine species were not considered likely to be highly threatened in previous assessments. Hence, they do not feature amongst the highly vulnerable species listed by Brumby et al. (2025), who based their initial selection of taxa on NZTCS conservation status as of 2022. However, Brumby et al. (2025) did find some alpine species of giant wētā (*Deinacrida*) to be highly vulnerable to climate change, and we now consider that some alpine moths are showing alarming signs of possible decline. The causes are unknown, but the retreat of snowbanks could have affected the ecology and phenology of associated plants and their hosted moths (Talbot et al. 1992; Bannister et al. 2005; Mark et al. 2015; Chinn and Chinn 2020). Current research shows that spatial trends in snow cover are difficult to measure because of high inter-annual variability in cover (Hendriks et al. 2012; Redpath et al. 2019). Spatial modelling of abiotic factors remains a high priority for future research.

An example is *Notoreas chrysopeda* (Geometridae) from the north-western South Island, previously unassessed, but now considered Threatened - Nationally Critical, with perhaps only two recorded sightings since 1964. It is well represented in collections from the 1920s, indicating that it was probably locally common 100 years ago. Little is known of the moth’s ecology, apart from the likelihood that its host plant is an alpine species of *Pimelea* or *Kelleria* (Thymelaeaceae), and it is likely that ecological mechanisms related to climate impacts are part of the underlying factors of population decline. Examples may include predators responding to milder climate conditions or vulnerable stages of the moth such as larvae and pupae suffering from change in microclimate (e.g. soil temperature and moisture). Also in this category is *Hierodoris gerontion*, a day-flying species of seepage areas in the alpine zone of Otago Region and Fiordland that was formerly locally common (Hoare 2005). There seem to be almost no records in the last 20 years, except for a few found by Brian Lyford in the Eyre Mountains (Otago Region), Old Woman Range and Hawkdun Range (Central Otago) in 2016 and 2021. Again, the association with climate impact cannot be confirmed but must be suspected in view of the preferred microhabitat. Research is needed.

2.3.4 Introduced predators

Social wasps

Aotearoa New Zealand now has five species of invasive social wasps (Vespidae): two species of *Vespula* and three of *Polistes* (with the establishment of *P. dominula* in 2011). The Moths and Butterflies of New Zealand Trust (MBNZT) has published a recent survey ([Pest Wasps : Survey - Moths and Butterflies of New Zealand Trust](#); accessed 2 November 2025) noting frequent observations of paper wasps in urban environments and taking monarch caterpillars.

Common wasps and German wasps (*Vespula* spp.) reach highest densities in forest where honeydew-producing insects are present (Barlow et al. 2002; Gardner-Gee and Beggs 2013). There are extensive seasonal high densities in northern South Island beech forest, but also in other sites such as Waitākere kanuka forest (Gardner-Gee and Beggs 2013) and where willows (*Salix* species) are infested with giant willow aphid (Tun et al. 2022; Martínez et al. 2023). In addition to such sites, *Vespula* spp. wasps reach high densities in some seasons in many other parts of Aotearoa New Zealand. For example, Richard Toft (pers. comm.) reports high volumes of *Vespula* wasp bait sales in some years to bee-keepers and community groups in Otago, Canterbury, Nelson and Marlborough Regions, Southland, the central North Island, Auckland and Northland. Clapperton

et al. (1994) detail evidence of high numbers of *Vespula* spp. wasps in most regions of Aotearoa New Zealand.

Forest Ringlet butterflies (*Dodonidia helmsii*) have substantially retracted their range (retreating to higher altitudes with lower wasp densities), almost certainly because of predation of larvae by common and German wasps (Abel 2024; Barker and Smerdon 2024). We acknowledge two informed submissions on its population state and trend from Sandy and Robin Toy (supported by Friends of Flora Charity) together with Andy Barker, Roger Frost and Sara Smerdon (supported by the MBNZT), whose advice we have heeded. The species is now assessed as Threatened – Nationally Vulnerable.

In this report, we express for the first time our concern about the effects of *Polistes* on certain coastal moth species. Evidence that whole populations of moths may be impacted is circumstantial, but B. H. Patrick (pers. comm.) notes decline in moth and butterfly observations in some coastal sites following the establishment of *Polistes* wasps. In particular, we have given Threatened – Nationally Critical status to two North Island coastal tortricid moths: *Planotortrix avicenniae* (associated with mangroves) and *Ctenopseustis servana*, associated with broad-leaved coastal shrubs and trees such as *Coprosma repens* and *Corynocarpus laevigatus*. Neither of these moth species has been definitely recorded for 20 years, and their decline ominously coincides with the period since the establishment in Aotearoa New Zealand of the Asian paper-wasp *Polistes chinensis*. *Polistes chinensis* is now abundant in North Island coastal localities and spreading south in the South Island, where it often occurs together with European paper wasp *P. dominula*.

A further moth species, *Vinicia* sp. “*Samolus*” (Pyalidae), whose larvae feed on *Samolus repens* in saltmarshes, is accorded Threatened – Nationally Vulnerable status; this species has been recorded in small numbers in recent years, and it is rare to see more than two specimens on a given day in one locality. Short series of five or six specimens collected in the 1980s at Pūkoro/Miranda and at Motumānawa/Pollen Island (both Auckland Region) suggest that the species may have been more abundant 40 years ago, but more rigorous survey is needed.

Potential for mice, ship rats and Norway rats as agents of decline

While there is plenty of evidence of Lepidoptera caterpillars as primary dietary items among rodents (mice *Mus musculus* (Dugdale 1996); ship rats *Rattus rattus* (Clapperton et al. 2019); Norway rats *Rattus norvegicus* (Dick 1985)), evidence of population-level impacts for particular moth species is lacking. Rodents occupy a wide range of environments, are night active and capable of scent detection, which presents an unknown advantage over non-mammal predators such as birds and predatory insects.

We leave this open as a research topic of likely importance for Lepidoptera with larval stages > 4 mm long that are active and more or less exposed on plants or in leaf-litter at night.

Other ecological traits might also increase a species’ vulnerability, for example, small area of occupancy (or island dwelling), small number of generations per year, co-location of larvae with their scent-producing frass and synchronised night-time emergence of large flightless adults.

Other potential exotic invertebrate impacts are not apparent

Across several moth taxa with a trend of declining populations, one might have anticipated a negative impact from other exotic insects given the evidence of pasture damage and crop damage due to such invasives (see Goldson et al. 2020; Mansfield et al. 2021). However, in natural and disturbed native grasslands, exotic insects have been found to make up a low proportion of the fauna in terms of abundance as well as numbers of species (Murray et al. 2003; Barratt et al. 2011); additionally, exotic species impacts appear minor (Barratt et al. 2011; Barratt et al. 2016). However, more study of invasive invertebrates and their complex impacts in a range of indigenous-dominated ecosystems is called for (Brockhoff et al. 2009; Edney-Browne et al. 2018). In a review

by Brockerhoff et al. (2009) there was little evidence of impacts from exotic invertebrate other than wasps on native forests, shrublands, grasslands or other open ecosystems.

Several spider species (Araneae) have invaded Aotearoa New Zealand. One notable example is *Latrodectus hasseltii*, the Australian redback. The effect of this spider on Lepidoptera is unknown and possibly of lower risk; however, it has become a significant predator of other threatened Aotearoa New Zealand invertebrates like the Cromwell chafer (*Prodontria lewisi*) (Vink et al. 2011). The risks that invasive spiders pose to Lepidoptera are difficult to assess and have not yet been quantified.

Edney-Browne et al. (2018) note that worldwide, rates of invertebrate invasion are not declining and further impacts on native invertebrates from future invaders are to be expected.

Moth parasitism by exotic invertebrates

The threat posed by unintentionally introduced invasive parasitoids to Aotearoa New Zealand's lepidopteran fauna remains insufficiently quantified and understood. There is growing evidence for the spread of parasitoid wasp species globally and within Aotearoa New Zealand, where over 260 species have been recorded as accidentally introduced (Ward and Edney-Browne 2015). While many of these invasive parasitoids are centred around large urban centres like Auckland (Ward and Edney-Browne 2015), other variables like climate change and habitat modification may allow for the proliferation of invasive parasitoid populations.

The ichneumonoid wasp *Meteorus pulchricornis* established itself in Aotearoa New Zealand in the 1990s (Berry 1997) and has since become possibly the most abundant parasitoid on a large range of native lepidopteran larvae (Berry and Walker 2004; Gresham and Kay 2017; Hartnett et al. 2018). In one case, RJBH found that in rearings of fern moth *Musotima nitidalis* from the west coast of Auckland in 2014, almost 100% of older larvae were already parasitised when brought into captivity. The overall impact of *M. pulchricornis* is unknown, but likely to be locally substantial in depressing populations of a range of moth species.

Another invasive parasitoid, *Diolcogaster perniciosus*, has been recorded as a prolific parasitoid of the endemic species *Nyctemera annulata* (McLaughlin 1967; Gresham and Kay 2017; Avila et al. 2023). WTF found that wild-collected larvae of *N. annulata* from Canterbury, Nelson and Auckland Regions are extensively parasitised, especially when collected in later instars. Further, there is concern for other closely related lowland-occupying species within the tiger moth subfamily Arctiinae, due to the polyphagous nature of *D. perniciosus* within this group. We express concern for the effects of parasitism on both *N. annulata* and *Metacrias strategica*, which have both been attributed the threat status At Risk - Declining, owing to both the current and potential effects of parasitoids on populations of these two species.

2.3.5 Naturally or unnaturally limited range

Range Restricted taxa

The 'Range Restricted' (RR) qualifier was applied to 120 taxa. These include species that are endemic to certain regions, ecosystems or climatic zones, as well as species confined to a single host plant or a small range of host plants that are themselves restricted in distribution. A clear example is *Houdinia flexilissima* (Pterolonchidae) (At Risk - Uncommon), which is confined to the few North Island peatlands where its sole host plant *Sporadanthus ferrugineus* grows. Other peatland and gumland moths are also accorded this qualifier (as well as the Relict qualifier) due to the restricted and historically reduced area of these specialised ecosystems. Examples (all At Risk - Declining) are *Elachista melanura*, *Bactra* sp. "*Empodisma*", *Clepsicosma* sp. "*Titirangi*", and *Chalastra* sp. cf. *pellurgata*, *Ichneutica micrastra* and *I. similis* (the last being the only one that extends its range south into South Island peatlands and pakihi).

In the South Island, a classic area of moth endemism is represented by the inland dry valleys and tussocklands of the Mackenzie Basin and Central Otago. Examples of taxa that are Range Restricted from this area are *Australothys volatilis*, *Gadira* sp. “black brown EGW”, *Homodotis* sp. A and *Loxostege* sp. “saltpan”.

More widespread taxa that are accorded the qualifier RR because of their host plant requirements include (host in brackets) *Samana falcatella* (*Carmichaelia* spp. shrubs), *Meterana pictula* (*Pimelea* shrubs), *Nola parvitis* (shrub *Helichrysum lanceolatum*) and *Meterana exquisita* (small-leaved divaricating *Olearia* spp. shrubs).

One Location taxa

Taxa known only from one location (qualifier One Location (OL)) are those with a single known site of less than 1,000 km² in extent. This qualifier was applied to 27 taxa in our assessment; all of these are endemic to Aotearoa New Zealand. It is an important qualifier, as sites with multiple OL taxa have increased significance for conservation, with likely undocumented additional unique ecosystem attributes. We highlight these sites below.

- Kaitorete Spit, Canterbury Region. Remarkably, three moth species are thought to be endemic or at least currently restricted to this shingle spit (one of these, *Kiwaia jeanae*, was once recorded further north at Amberley Beach). *Scythris niphozela* and *Kupea electilis* are extremely restricted within the spit habitat and accorded Threatened – Nationally Critical status. *Kiwaia jeanae*, associated with *Raoulia* mat daisies, seems to be more common and widespread along the spit, and is Threatened – Nationally Vulnerable. Being flightless in both sexes, *K. jeanae* is unusual for a ‘mainland’ moth (most such species occur on oceanic islands), and the authors consider this a glacial relict from former lowered sea-level and more extensive habitat in the past during glacial maxima. *Scythris* sp. “stripe”, formerly only known from the base of the spit at Birdlings Flat, has now been discovered nearby elsewhere (Port Hills and Banks Peninsula), so was clearly never restricted to this site.
- Te Paki, Northland. The Te Paki region, a former island at the tip of the Aupouri Peninsula, has only recently been shown to be an area of Lepidoptera endemism, with the description of three endemic species (Hoare 2010; Dugdale et al. 2023). Two of these are *Izatha* species (Xyloryctidae) associated with dead wood and very unlikely to be host specific; these are *I. haumu* and *I. taingo*, both frequently seen in their restricted area of occurrence, which extends at least some way down the Aupouri Peninsula. Both are assessed as At Risk – Uncommon. The third species, *Ipana perdita*, is thought very likely to be associated with the rare podocarp tree *Halocarpus kirkii*, which is relatively common only in the gully forest at Kauri Bush (also known as Radar Bush, in Te Paki Recreation Reserve) where the moth was caught in 2007. On the basis of the extreme vulnerability to fire for this tiny bush fragment, which is surrounded by volatile manuka shrublands, *Ipana perdita* is regarded as Threatened – Nationally Critical. There remains a chance that the moth could turn up elsewhere where its host plant occurs in the North Island, but until such time it must be regarded as a Te Paki endemic.
- Von Valley, Otago Region. This large complex of inter-mountain wetlands, currently with no formal protection in a region of gradual land development, represents the only known site for two recently described moths: *Arctesthes titanica* (Geometridae) and *Ichneutica lyfordi* (Noctuidae). Evidence drawn from the experience of Brian Lyford and Brian Patrick, who have both surveyed in this area, shows *A. titanica* is less restricted in its occurrence than *I. lyfordi*, and Brian Lyford remains the only person who has seen the latter moth alive. Therefore, *I. lyfordi* is assessed as Threatened – Nationally Endangered, and *A. titanica* in the next category of threat, Threatened – Nationally Vulnerable.

2.3.6 Conservation Dependent species

We gave 12 taxa the qualifier Conservation Dependent (CD), which indicates species likely to move to a worse conservation status over 10 years if current management ceases. A straightforward

example would be cessation of possum control for species with highly possum-palatable host plants. These species include *Ipana griseata* (larvae on mistletoes) and *Pasiphila* sp. cf. *magnimaculata* (larvae on flowers/seeds of *Brachyglottis kirkii*). Likewise, for some offshore island endemics, rodent control/monitoring for potential rodent invasion are considered essential to maintain populations at their current abundances. This would apply to *Ichneutica rufistriga* (endemic to the Antipodes Island Group, where mice have been eradicated) and *Ichneutica pagaia* (endemic to Snares Islands/Tini Heke and liable to suffer should rodents reinvade).

2.4 Knowledge gaps

2.4.1 Conservation Research Needed

We assessed 45 taxa as in need of conservation research (qualifier Conservation Research Needed (CR)). The main criteria for this qualifier amongst Lepidoptera were lack of knowledge of larval host plants and ecology and consequent lack of understanding of processes leading to a decline. The larva is the most interactive stage, and the most vulnerable, so without an understanding of the life history of a moth, its conservation can be severely hampered. We focus our brief discussion here on the most threatened species, but the same points apply to most Lepidoptera ranked as CR.

In some cases, the most urgent priority is survey work to locate a viable population (or populations) so that further research can be conducted, since a number of the most threatened moths have not been seen for 15+ years.

The following Threatened – Nationally Critical species all require urgent survey to see if viable populations can still be located: *Australothis volatilis*, *Ctenopseustis servana*, *Gymnobathra ambigua*, *Notoreas chrysopeda*, *Parienia mochlophorana*, *Sabatinca ianthina*, *Scoparia tuicana* and *Scythris niphozela*. Fortunately, for most of these species, we have some idea of larval biology and host plants; the exceptions are the wetland species *Parienia mochlophorana* and *Scoparia tuicana*. In the case of the Threatened – Nationally Critical *Hierodoris gerontion*, *Pyrausta comastis* and *Sporophyla oenospora*, there are recent records from the last few years, but larval ecology and hosts have not been confidently determined, so follow-up research is required to try to elucidate conservation requirements.



Figure 4. *Sabatinca ianthina*, Tararua Forest Park, Carterton District, Wellington Region, Threatened – Nationally Critical. Photo: Christopher Stephens, November 2025

In all these cases, threatening processes are not fully understood and there is little that can be done to halt declines until we have a much better ecological understanding. This is especially the case for *Sabatinca ianthina* (Fig. 4). This ancient micro-moth (Micropterigidae) has never before been considered severely threatened, and no obvious threats have been identified. For example, the larvae do not seem likely to be easy targets for wasps. *Sabatinca ianthina* inhabits moist forest banks in the southern North Island and northern South Island (Gibbs and Kristensen 2019), with larvae almost certainly feeding on liverworts. This species, formerly locally common, seems to have almost disappeared. In spite of being a relatively conspicuous, if small, day-flying moth with a very distinctive wing pattern, it has just two records on the iNaturalist NZ platform (sister species have been recorded more frequently), both from 2025. Prior to these, the last records that we know of are from Kahurangi National Park in 2006 and 2007, where George Gibbs collected several specimens. The iNaturalist NZ observations, by Caitlan Butler and Christopher Stephens, respectively, are from Waiotapu, south of Rotorua (11 Oct 2025, <https://www.inaturalist.org/observations/320065778>) and from the Tararua Range (Wellington Region) (29 Nov 2025, <https://www.inaturalist.org/observations/329044880>). The apparent near disappearance of this widespread forest species is ominous and has no obvious explanation.

Other species for which discovery of the larval host plant is of crucial importance include the geometrid *Declana lupa* (Threatened – Nationally Endangered), the pyralid *Delogenes limodoxa* and the noctuid *Ichneutica prismatica* (both Threatened – Nationally Vulnerable). *Declana lupa* occurs in coastal forest of the Waitākere Ranges, Auckland, where social wasps can be abundant, and where the introduced braconid *Meteorus pulchricornis* is also in high numbers. *Delogenes limodoxa* is a southern South Island species of moist short-turf areas such as lake margins and coastal swards; as with the related *Sporophyla oenospora*, the larvae are likely to feed on a herbaceous native dicot, but targeted survey and conservation will be difficult until this host has been determined.

2.4.2 Data Poor Size and Data Poor Trend

A large number of species were listed with one of the two qualifiers Data Poor Size (DPS), or data Poor Trend (DPT), very often with both (DPS = 121 species, DPT = 147 species). The frequent use of these qualifiers simply reflects the extreme difficulty of confidently estimating population sizes or total ranges for Lepidoptera in a country with so few active lepidopterists and such large areas of seldom-accessed or even inaccessible territory. Recording and coverage has greatly improved with iNaturalist NZ, but there are still large and inevitable biases and gaps.

Under-recording may strongly affect our knowledge of species that have short or variable flight periods, e.g. many of those confined to the alpine zone or in remote parts of the country such as central-western Fiordland. Recording in any given area will depend on the proximity of active naturalists with an interest in Lepidoptera; more remote areas may only receive one or two visits per year or fewer, which will not be enough to pick up certain species. Taxa that are widespread but very localised in occurrence are also liable to be overlooked; this will include species associated with patchy resources such as fungi (see, e.g. discussion above of “*Tinea*” *texta*).

Finally, numbers of any insect species can fluctuate dramatically from year to year or over much longer cycles, so robust trends of decline or increase may be very hard to pick up in the short term. Lepidoptera generally have a high reproductive potential, so they can potentially bounce back fast once a threat is removed.

Our assessments of species population states and trends are inevitably extrapolated from limited information based on the ecology of better-known allied species and on judgement. We hope that the current strong upward trend in recording will increasingly spill over into a much better understanding of the ecology and status of our threatened Lepidoptera.

3. Conservation status of 498 Lepidoptera taxa in Aotearoa New Zealand

Taxa were assessed according to the criteria of Rolfe et al. (2022) and have been grouped in Table 6 by conservation status and then alphabetically by scientific name. The Data Deficient list is inserted first, then categories are ordered by degree of loss, with Threatened – Nationally Critical at the top of the list and Not Threatened at the bottom, above Non-resident Native and Introduced and Naturalised. Although the true status of Data Deficient taxa will span the entire range of available categories, many of the taxa in that list are there because they are very seldom seen and so are likely to eventually be considered threatened – and some may already be extinct. The Data Deficient list is likely to include many of the most threatened species in Aotearoa New Zealand.

Brief descriptions of the NZTCS categories and criteria are provided in Appendices 2 and 3. See Rolfe et al. (2022) for full definitions of categories, criteria and qualifiers, as well as an explanation of the assessment process.

The full data for the assessments listed in Table 6 can be viewed and downloaded at <https://nztics.org.nz/reports/1176>.

Table 6. Conservation status of Lepidoptera in Aotearoa New Zealand.

Qualifiers are abbreviated as follows: CD = Conservation Dependent, CI = Climate Impact, CR = Conservation Research Needed, De = Designated, DPR = Data Poor Recognition, DPS = Data Poor Size, DPT = Data Poor Trend, EF = Extreme Fluctuations, IE = Island Endemic, OL = One Location, PD = Partial Decline, PE = Possibly Extinct, PF = Population Fragmentation, Rel = Relict, RR = Range Restricted, SO = Secure Overseas, Sp = Biologically Sparse.

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
DATA DEFICIENT (100)				
Taxonomically Determinate (63)				
<i>Amblyptilia aeolodes</i> (Meyrick, 1902)	Pterophoridae		DPR	New listing
<i>Amblyptilia deprivalis</i> (Walker, 1864)	Pterophoridae			New listing
<i>Aoraia flavida</i> Dugdale, 1994	Hepialidae			New listing
<i>Aoraia hespera</i> Dugdale, 1994	Hepialidae			New listing
<i>Archyala culta</i> Philpott, 1931	Tineidae			No change
<i>Archyala opulenta</i> Philpott, 1926	Tineidae			No change
<i>Asphodes mnesichola</i> (Meyrick, 1888)	Geometridae			New listing
<i>Asterivora fasciata</i> (Philpott, 1930)	Choreutidae			New listing
<i>Austrocidaria prionota</i> (Meyrick, 1883)	Geometridae		DPR	New listing
<i>Basantis sirenica</i> Meyrick, 1914	Tineidae		Sp, RR	No change
<i>Dasyuris fulminea</i> Philpott, 1915	Geometridae			New listing
<i>Elachista eurychora</i> (Meyrick, 1919)	Elachistidae		DPR, PE	No change

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Epichorista allogama</i> (Meyrick, 1914)	Tortricidae			New listing
<i>Erechthias lychnopa</i> Meyrick, 1927	Tineidae			No change
<i>Glyphipterix necopina</i> Philpott, 1927	Glyphipterigidae		DPR	Neutral
<i>Gymnobathra origenes</i> Meyrick, 1936	Xyloryctidae			No change
<i>Helastia clandestina</i> (Philpott, 1921)	Geometridae		RR, ReI	Neutral
<i>Helastia salmoni</i> Crow, 1987	Geometridae		DPR	New listing
<i>Hendecasticha aethaliana</i> Meyrick, 1881	Tortricidae			New listing
<i>Hierodoris bilineata</i> (Salmon, 1948)	Xyloryctidae		IE, RR	Neutral
<i>Hierodoris electrica</i> (Meyrick, 1889)	Xyloryctidae			New listing
<i>Hierodoris eremita</i> Philpott, 1930	Xyloryctidae			New listing
<i>Hierodoris huia</i> Hoare, 2005	Xyloryctidae			No change
<i>Hierodoris sesioides</i> Hoare, 2005	Xyloryctidae			No change
<i>Hierodoris squamea</i> (Philpott, 1915)	Xyloryctidae			New listing
<i>Ichneutica dundastica</i> Hoare, 2019	Noctuidae			New listing
<i>Ichneutica fibriata</i> (Meyrick, 1913)	Noctuidae			New listing
<i>Ichneutica haedifrontella</i> Hoare, 2019	Noctuidae		DPR	New listing
<i>Ichneutica naufraga</i> Hoare, 2019	Noctuidae		DPR	New listing
<i>Ichneutica schistella</i> Hoare RBJ, 2019	Noctuidae		IE, OL, RR	New listing
<i>Ichneutica sericata</i> (Howes, 1945)	Noctuidae		OL	New listing
<i>Ichneutica stulta</i> (Philpott, 1905)	Noctuidae		DPR	New listing
<i>Ischalis dugdalei</i> Weintraub & Scoble, 2004	Noctuidae		PE	New listing
<i>Izatha mira</i> Philpott, 1913	Geometridae			New listing
<i>Izatha notodoxa</i> Hoare, 2010	Xyloryctidae			New listing
<i>Izatha quinquejacula</i> Hoare, 2010	Xyloryctidae		IE, RR	Neutral
<i>Izatha rigescens</i> Meyrick, 1929	Xyloryctidae			No change
<i>Izatha walkerae</i> Hoare, 2010	Xyloryctidae			No change
<i>Kiwaia caerulea</i> (Hudson, 1925)	Gelechiidae			New listing
<i>Kiwaia pumila</i> (Philpott, 1928)	Gelechiidae		RR, Sp	Neutral
<i>Lathicrossa prophetica</i> Meyrick, 1927	Oecophoridae		Sp	No change
<i>Leptocroca xyrias</i> Meyrick, 1931	Oecophoridae			No change
" <i>Lysiphragma</i> " <i>argentina</i> Salmon, 1948	Lepidoptera <i>incertae sedis</i>		IE, OL, RR	Neutral

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Meterana tetrachroa</i> (Meyrick, 1931)	Noctuidae			No change
<i>Paspiphila heighwayi</i> (Philpott, 1927)	Geometridae		DPR	New listing
<i>Petasactis technica</i> (Meyrick, 1888)	Tineidae		PE	No change
<i>Phaeosaces lindsayae</i> (Philpott, 1928)	Oecophoridae		RR	No change
<i>Proditrix chionochloae</i> Dugdale, 1987	Glyphipterigidae			Neutral
<i>Sabatinka pluvialis</i> Gibbs, 2014	Micropterigidae		OL	No change
<i>Sabatinka quadrijuga</i> Meyrick, 1912	Micropterigidae			New listing
<i>Sabatinka weheka</i> Gibbs, 2014	Micropterigidae			New listing
<i>Scoparia caliginosa</i> Philpott, 1918	Crambidae		DPR	New listing
<i>Scoparia parachaica</i> Meyrick, 1901	Crambidae		PE	New listing
<i>Scoparia pascoella</i> Philpott, 1920	Crambidae		DPR	New listing
<i>Stathmopoda endotherma</i> Meyrick, 1931	Stathmopodidae			Neutral
<i>Tingena loxotis</i> (Meyrick, 1905)	Oecophoridae			No change
<i>Tingena opaca</i> (Philpott, 1926)	Oecophoridae			New listing
<i>Tortrix demiana</i> Meyrick, 1882	Tortricidae		DPR	New listing
<i>Trachypepla nimbosea</i> Philpott, 1930	Oecophoridae			No change
<i>Trachypepla roseata</i> Philpott, 1923	Oecophoridae			No change
<i>Wiseana fuliginea</i> (Butler, 1879)	Hepialidae		DPR	New listing
<i>Wiseana jocosa</i> (Meyrick, 1912)	Hepialidae		DPR	New listing
<i>Wiseana mimica</i> (Philpott, 1923)	Hepialidae		DPR	New listing
<i>Xanthorhoe lophogramma</i> Meyrick, 1897	Geometridae		DPR	Neutral
Taxonomically Unresolved (37)				
<i>Archyala</i> sp. A (NZAC04285471; Mataroa)	Tineidae			No change
<i>Epichorista tenebrosa</i> Philpott, 1917	Tortricidae			Neutral
<i>Eudonia linealis</i> (Walker, 1866)	Crambidae		DPR	No change
<i>Eutorna</i> sp. aff. <i>caryochroa</i> (NZAC04285468)	Depressariidae			New listing
<i>Gadira</i> sp. (NZAC04285474; "black brown EGW")	Crambidae		RR	Neutral
" <i>Gymnobathra</i> " <i>rufopunctella</i> Hudson, 1950	Oecophoridae			No change
<i>Gymnobathra</i> sp. (NZAC04285475; "dark splash")	Xyloryctidae			No change
<i>Hierodoris</i> s.l. <i>insignis</i> Philpott, 1926	Gelechiidae			New listing
<i>Hydiomena iolanthe</i> Hudson, 1939	Geometridae			No change

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Lycaena</i> sp. A (NZAC04274281; "Canterbury boulder")	Lycaenidae			New listing
<i>Lycaena</i> sp. B ("central alpine boulder")	Lycaenidae			New listing
<i>Lycaena</i> sp. C ("Central Otago boulder")	Lycaenidae			New listing
<i>Lycaena</i> sp. D ("Central Otago glade")	Lycaenidae			New listing
<i>Lycaena</i> sp. F ("East Otago glade")	Lycaenidae			New listing
<i>Lycaena</i> sp. G ("Mackenzie Basin glade")	Lycaenidae			New listing
<i>Lycaena</i> sp. I ("Waihemo boulder")	Lycaenidae			New listing
<i>Lycaena</i> sp. J ("West Coast glade")	Lycaenidae			New listing
<i>Maoritene</i> sp. ("Olearia")	Tortricidae		DPR	Neutral
<i>Musotima</i> sp. (NZAC04285479; Three Kings)	Crambidae		DPT, IE, OL	Neutral
<i>Ocrocrambus punctellus</i> (Hudson, 1950)	Crambidae			No change
<i>Ocrocrambus sophronellus</i> (Meyrick, 1885)	Crambidae			No change
<i>Paramorpha</i> sp. (NZAC04285481, "gumland")	Carposinidae			New listing
<i>Platyptilia hokowhitilis</i> Hudson, 1939	Pterophoridae			No change
<i>Plutella</i> sp. 1 (NZAC04285470)	Plutellidae			New listing
<i>Porina mairi</i> Buller, 1873	Hepialidae			No change
<i>Stathmopoda aristodoxa</i> Meyrick, 1926	Stathmopodidae			Neutral
<i>Stathmopoda</i> sp. (NZAC04285498; "Olearia")	Stathmopodidae			Neutral
<i>Stigmella progama</i> (Meyrick, 1924)	Nepticulidae			No change
<i>Stigmella propalaea</i> (Meyrick, 1889)	Nepticulidae			No change
<i>Stigmella</i> sp. A ("Olearia")	Nepticulidae			Neutral
<i>Stigmella</i> sp. C (NZAC04285488; "blue")	Nepticulidae			No change
<i>Stigmella</i> sp. E (NZAC04285490; "October")	Nepticulidae			No change
<i>Thectophila acmotypa</i> Meyrick, 1927	Elachistidae			No change
<i>Theoxena</i> sp. (NZAC04285491; "non-pectinate")	Geometridae			No change
Tineidae <i>incertae sedis</i> n. sp. (NZAC04285493; "Matuku monster")	Tineidae			No change
<i>Trachypepla</i> sp. (NZAC04285492; Cloudy Bay)	Oecophoridae			No change

THREATENED (79)

NATIONALLY CRITICAL (30)

Taxonomically Determinate (24)

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Arctesthes avatar</i> Patrick, Patrick & Hoare, 2019	Geometridae	NCu6g	CR, OL	No change
<i>Asaphodes frivola</i> (Meyrick, 1913)	Geometridae	NCu3g	OL	No change
<i>Asaphodes imperfecta</i> (Philpott, 1905)	Geometridae	NCu6i	CR, DPS, DPT	No change
<i>Australothis volatilis</i> Matthews & Patrick, 1998	Noctuidae	NCu6h	Sp, CI, CD, DPT, EF, RR	No change
<i>Ctenopseustis servana</i> (Walker, 1863)	Tortricidae	NCu6j	Sp, CI, CR, DPS, DPT, PF, Rel	New listing
<i>Dasyuris octans</i> Hudson, 1923	Geometridae	NCu6k	Sp, Rel	Worse
<i>Gymnobathra ambigua</i> (Philpott, 1926)	Xyloryctidae	NCu2a	Sp, CR, PE	No change
<i>Hierodoris gerontion</i> Hoare, 2005	Xyloryctidae	NCu6j	CI, CR, DPS, DPT	New listing
<i>Ipana perdita</i> Dugdale and Emmerson, 2023	Geometridae	NCu2g	DP, OL	No change
<i>Kupea electilis</i> Philpott, 1930	Crambidae	NCu5h	OL	Worse
<i>Maoricrambus oncobolus</i> (Meyrick, 1885)	Crambidae	NCu5h	CI, RR, Rel	Worse
<i>Notoreas chrysopoda</i> (Meyrick, 1888)	Geometridae	NCu5h	CR, DPS, DPT, RR	New listing
<i>Notoreas edwardsi</i> Patrick & Hoare, 2010	Geometridae	NCu2g	OL	No change
<i>Orocrambus fugitivellus</i> (Hudson, 1950)	Crambidae	NCu5h	DPT, OL	No change
<i>Orocrambus ornatus</i> (Philpott, 1927)	Crambidae	NCu2a	DPS, DPT, PE	No change
<i>Parienia mochlophorana</i> (Meyrick, 1882)	Tortricidae	NCu5h	CI, CR, DPS, DPT, RR	New listing
<i>Planotortrix avicenniae</i> Dugdale, 1990	Tortricidae	NCu6j	CI, DPS, DPT, EF	New listing
<i>Pyrausta comastis</i> Meyrick, 1884	Crambidae	NCu5h	CR, PF, Rel	Worse
<i>Sabatinka ianthina</i> Philpott, 1921	Micropterigidae	NCu6k	CR, DPS, DPT	New listing
<i>Scoparia tuicana</i> Clarke, 1926	Crambidae	NCu6i	CR, DPS, DPT, RR	New listing
<i>Scythris niphozela</i> Meyrick, 1931	Scythrididae	NCu3g	CI, CR, DPS, DPT, OL, RR	Worse
<i>Sporophylla oenospora</i> (Meyrick, 1897)	Pyralidae	NCu6h	Sp, CR, OL	No change
<i>Stathmopoda campylocha</i> Meyrick, 1889	Stathmopodidae	NCu3g	OL	No change
<i>Xanthorhoe bulbulata</i> (Guenée, 1868)	Geometridae	NCu6a	PE	No change
Taxonomically Unresolved (6)				
<i>Dichromodes</i> sp. B (Gore Bay)	Geometridae	NCu6g	OL	No change
<i>Gingiflobora</i> sp. (Eastern Otago)	Geometridae	NCu6h	CR, DPR, DPS, DPT, RR, Rel	No change
<i>Kiwaia</i> sp. A (NZAC04285476; "plains jumper")	Gelechiidae	NCu5h	CI, RR, Rel	Worse

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Kiwiia</i> sp. B (NZAC04226315; Cloudy Bay)	Gelechiidae	NCu2g	CD, Ci, EF, PE	No change
<i>Lycaena boldenarum</i> E ("Chrystall's Beach boulder")	Lycaenidae	NCu6g	OL	No change
<i>Lycaena lantina</i> (Salmon, 1946)	Lycaenidae	NCu3g	CD, OL	No change
NATIONALLY ENDANGERED (16)				
Taxonomically Determinate (9)				
<i>Cephalissa siria</i> Meyrick, 1883	Geometridae	NEU3h	CI, CR, DPS, DPT, PF, RR	Worse
<i>Clepsis paraloxa</i> (Meyrick, 1907)	Tortricidae	NEU4h	CI, CR, DPS, DPT, RR	New listing
<i>Cnephasia paterna</i> Philpott, 1926	Tortricidae	NEU2h	CI, OL, St	No change
<i>Declana lupu</i> Dugdale and Emmerson, 2023	Geometridae	NEU4h	CI, CR, DPS, DPT, OL, RR	New listing
<i>Epichorista lindsayi</i> Philpott, 1928	Tortricidae	NEU2h	DPR, OL, St	No change
<i>Helastia angusta</i> Craw, 1987	Geometridae	NEU4o	Sp, CI, CR, DPS, RR, Rel	Worse
<i>Ichneutica lyfordi</i> Hoare, 2019	Noctuidae		DPS, DPT, De, OL	New listing
<i>Paranotoreas</i> "Banks Peninsula"	Geometridae	NEU4h	CR, RR	No change
<i>Scoparia autochroa</i> Meyrick, 1907	Crambidae	NEU5i	DPS, DPT, RR, Rel	New listing
Taxonomically Unresolved (7)				
<i>Dichromodes</i> sp. A (NZAC04193806; Cloudy Bay)	Geometridae	NEU5i	CI, OL, RR	No change
<i>Homodotis</i> sp. A (NZAC04285496)	Geometridae	NEU5i	CI, DPS, DPT, PF, RR	New listing
<i>Loxostege</i> sp. (NZAC04285477; "salt pan")	Crambidae	NEU3h	CD, RR, Rel	Worse
<i>Lycaena</i> sp. H (NZAC04274315; "Tiwai Spit boulder")	Lycaenidae	NEU4h	CI, RR	New listing
<i>Meterana</i> sp. (NZAC04285478; Foveaux Strait)	Noctuidae	NEU3h	CI, CD, RR	No change
<i>Pseudocoremia</i> sp. (NZAC04285483; Knobby Range)	Geometridae	NEU3o	RR	No change
<i>Scythris</i> sp. (NZAC04285486; "stripe")	Scythrididae	NEU3h	DPS, DPT	Better
NATIONALLY VULNERABLE (33)				
Taxonomically Determinate (26)				
<i>"Hydriomena" clarkiei</i> Howes, 1917	Geometridae	NVu4j	Sp, CI, DPS, DPT	Worse
<i>"Pseudocoremia" cineracia</i> (Howes, 1942)	Geometridae	NVu2i	RR	No change
<i>"Acrocilia" discariana</i> Philpott, 1930	Tortricidae	NVu3p	RR	No change

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Aoraia oreobolae</i> Dugdale, 1994	Hepialidae	NVu3i	CI, CR, DPS, DPT, OL	Worse
<i>Arctesthes titanica</i> Patrick, Patrick & Hoare, 2019	Geometridae	NVu4i	Sp, DPT, OL, St	No change
<i>Asaphodes cinnabari</i> (Howes, 1912)	Geometridae	NVu4j	CI, CR, DPS, DPT, PF	New listing
<i>Asaphodes ida</i> (Clarke, 1926)	Geometridae	NVu4j	Sp, CI, CR, DPS, DPT	New listing
<i>Asaphodes prymnaea</i> (Meyrick, 1911)	Geometridae	NVu4j	RR	New listing
<i>Asaphodes stinaria</i> (Guenée, 1868)	Geometridae	NVu4i	Sp, CR, DPS, DPT, Rel	No change
<i>Declana nigrosparsa</i> Butler, 1879	Geometridae	NVu5j	RR	No change
<i>Delogenes limodoxa</i> Meyrick, 1918	Pyralidae	NVu5j	CI, CR, DPS, PF, RR, Rel	New listing
<i>Dodonidia helmsii</i> Butler, 1884	Nymphalidae	NVu3c	CI, CR, Rel	Worse
<i>Ericodesma aerodana</i> (Meyrick, 1881)	Tortricidae	NVu5j	CI, DPT, PF, RR	Worse
<i>Eudonia organaea</i> (Meyrick, 1901)	Crambidae	NVu4j	Sp, CI, DPS, DPT, RR, Rel	New listing
<i>Eurythecta robusta</i> (Butler, 1877)	Tortricidae	NVu4i	CI, DPR, DPT, RR, Rel	Worse
<i>Gingidobora nebulosa</i> (Philpott, 1917)	Geometridae	NVu4j	CI, CR, DPR, DPS, DPT, RR, Rel	No change
<i>Helastia siris</i> (Hawthorne, 1897)	Geometridae	NVu2i	CI, CR, RR, Rel	Worse
<i>Hierodoris polita</i> Hoare, 2005	Xyloryctidae	NVu4j	CR, DPS, DPT, RR	Worse
<i>Ichneutica pagaia</i> (Hudson, 1909)	Noctuidae	NVu2i	CD, IE	New listing
<i>Ichneutica prismatica</i> Hoare, 2019	Noctuidae	NVu4j	Sp, CI, CR, DPS, DPT, RR, Rel	New listing
<i>Izatha psychra</i> (Meyrick, 1884)	Xyloryctidae	NVu4i	CI, CR, DPS, DPT, RR	Better
<i>Kiwaia jeanae</i> Philpott, 1930	Gelechiidae	NVu2i	OL	Worse
<i>Notoreas casanova</i> Patrick & Hoare, 2010	Geometridae	NVu4i	CI, CD, RR	No change
<i>Orocrambus sophistes</i> (Meyrick, 1905)	Crambidae	NVu3i	Sp, CI, DPR, PF, RR	No change
<i>Pseudocoremia lutea</i> (Philpott, 1914)	Geometridae	NVu3i	DPS, DPT, OL	Worse
<i>Sabulopteryx botanica</i> Hoare & Patrick, 2019	Gracillariidae	NVu4j	Sp, CI, RR	No change
Taxonomically Unresolved (7)				
<i>Archyala</i> sp. B (NZAC04239001; Mount Greenland)	Tineidae	NVu2i	CR, DPS, DPT, RR	Worse

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Asaphodes</i> sp. (NZAC04285494; "near aphelias")	Geometridae	NVu3i	Sp, Ci, DPT, OL	New listing
<i>Platyptilia campsiptera</i> Meyrick, 1907	Pterophoridae	NVu3i	Sp	No change
<i>Pyrgotis</i> sp. (NZAC04285484; "Olearia")	Tortricidae	NVu3i	DPS, DPT, RR	No change
<i>Pyroderes</i> sp. (NZAC04285485; "yellow")	Cosmopterigidae	NVu2i	DPT, RR	No change
<i>Stigmella</i> sp. D (NZAC04285489; "giant")	Nepticulidae	NVu2i		No change
<i>Vinicia</i> sp. "Sarnolus" (NZAC04231474)	Pyralidae	NVu4j	Ci, DPT, RR	New listing

AT RISK (152)

DECLINING (68)

Taxonomically Determinate (58)

<i>Agrotis admirationis</i> Guenée, 1868	Noctuidae	DECu3k	Ci, DPS, DPT, PD, PF	New listing
<i>Agrotis ceropachoides</i> Guenée, 1868	Noctuidae	DECu3j	Ci, CR, DPR, DPS, DPT	Worse
<i>Aoraia aspina</i> Dugdale, 1994	Hepialidae	DECu3j	Sp, Ci, CR, DPS, DPT, RR	New listing
<i>Asaphodes obarata</i> (Feilder & Roggenhofer, 1875)	Geometridae	DECu3j	Sp, Ci, CR, DPS, DPT	Better
<i>Asaphodes recta</i> (Philpott, 1905)	Geometridae	DECu3k	Ci, DPS, DPT	New listing
<i>Austramathes coelacantha</i> Hoare, 2017	Noctuidae	DECu3k	Sp, Ci, DPR, DPS, DPT	New listing
<i>Austrocidaria arenosa</i> (Howes, 1911)	Geometridae	DECu3j	Ci, DPR, DPS, DPT, RR	No change
<i>Austrocidaria lithurga</i> (Meyrick, 1911)	Geometridae	DECu3j	Sp, Ci, DPR, DPS, DPT, RR	Worse
<i>Dasyuris enysii</i> (Butler, 1877)	Geometridae	DECu3i	Sp, Ci, CR, DPR, DPS, DPT	Worse
<i>Dasyuris leucobathra</i> Meyrick, 1911	Geometridae	DECu3k	Ci, DPS, DPT	New listing
<i>Dasyuris micropolis</i> Meyrick, 1929	Geometridae	DECu3k	Sp, PF	New listing
<i>Dasyuris partheniata</i> Guenée, 1868	Geometridae	DECu3i	DPT	No change
<i>Dichromodes simulans</i> Hudson, 1908	Geometridae	DECu3j	Ci, CR, DPS, DPT	New listing
<i>Elachista helonoma</i> (Meyrick, 1889)	Elachistidae	DECu3k	Ci, DPS, DPT, RR, Rel	Worse
<i>Elachista melanura</i> Meyrick, 1889	Elachistidae	DECu3j	Ci, DPR, DPS, DPT, EF, RR, Rel	Neutral

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Ericodesma cuneata</i> (Clarke, 1926)	Tortricidae	DECU3j	DPT, RR	Worse
<i>Eudonia ustiramis</i> (Meyrick, 1931)	Crambidae	DECU3k	CI, DPR, DPS, DPT, RR, Rel	Neutral
<i>Gadira leucophthalma</i> (Meyrick, 1882)	Crambidae	DECU3j	Sp. CI, RR	Better
<i>Gingidlobora subobscurata</i> (Walker, 1862)	Geometridae	DECU3k	RR	No change
<i>Glyphipterix euastera</i> Meyrick, 1880	Glyphipterigidae	DECU3k	DPS, DPT, RR	Worse
<i>Helastia expolita</i> (Philpott, 1917)	Geometridae	DECU4k	Sp. CI, DPS, DPT, RR, Rel	Worse
<i>Heterocrossa maculosa</i> (Philpott, 1927)	Carposinidae	DECU3j	Sp. CI, CR, DPR, DPS, DPT	Neutral
<i>Ichneutica chryseyrhira</i> (Hampson, 1905)	Noctuidae	DECU3l	DPS, DPT	New listing
<i>Ichneutica eris</i> Hoare, 2019	Noctuidae	DECU3l	CI, DPR, DPS, DPT	New listing
<i>Ichneutica micrastra</i> (Meyrick, 1897)	Noctuidae	DECU4k	Sp. DPS, DPT, RR, Rel	New listing
<i>Ichneutica panda</i> (Philpott, 1920)	Noctuidae	DECU4k	DPR, DPS, DPT	New listing
<i>Ichneutica phaula</i> (Meyrick, 1887)	Noctuidae	DECU3k	CI, DPS, DPT, RR, Rel	New listing
<i>Ichneutica sapiens</i> (Meyrick, 1929)	Noctuidae	DECU3l	Sp. DPS, DPT, PF, Rel	New listing
<i>Ichneutica similis</i> (Philpott, 1924)	Noctuidae	DECU3m	DPS, DPT, RR, Rel	New listing
<i>Ichneutica theobroma</i> Hoare, 2019	Noctuidae	DECU3k	Sp. CI, CR, DPS, DPT, RR	New listing
<i>Ichneutica toroneura</i> (Meyrick, 1901)	Noctuidae	DECU3l	CI, DPR, DPS, DPT, PF	New listing
<i>Izatha manubriata</i> Meyrick, 1923	Xyloryctidae	DECU3k	Sp. CI, CR, DPS, DPT	New listing
<i>Macarostola miniella</i> (Felder & Rogenhofer, 1875)	Gracillariidae	DECU3j	DPS, DPT	New listing
<i>Metacrias strategica</i> (Hudson, 1889)	Erebidae	DECU3l	DPT	New listing
<i>Meterana grandiosa</i> (Philpott, 1903)	Noctuidae	DECU3k	CI, DPT, PF, Rel	Worse
<i>Meterana pictula</i> (White, 1855)	Noctuidae	DECU3l	RR	No change
<i>Nivefica nervosa</i> (Hudson, 1922)	Noctuidae	DECU3l	Sp. CR, DPS, DPT, PD	New listing
<i>Notoreas peromata</i> (Walker, 1863)	Geometridae	DECU3l	CI, RR	New Listing
<i>Nola parviis</i> (Howes, 1917)	Nolidae	DECU3j	CI, DPS, DPT, PF, RR	New listing
<i>Nyctemera annulata</i> (Boisduval, 1832)	Erebidae	DECU4m	CI, CR, PD	New listing

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Orocrambus jansonii</i> Gaskin, 1975	Crambidae	DECu3j		Worse
<i>Orthoclydon pseudostinaria</i> (Hudson, 1918)	Geometridae	DECu3j	Sp. DPS, DPT	Better
<i>Paranotoreas ferox</i> (Butler, 1877)	Geometridae	DECu3j	Sp. Ci, DPS, DPT, RR	New listing
<i>Paranotoreas fulva</i> (Hudson, 1905)	Geometridae	DECu3k	Ci, DPT, RR, Rel	Worse
<i>Patagoniodes farinaria</i> (Turner, 1904)	Pyralidae	DECu3m	DPS, DPT, SO	New listing
<i>Physetica temperata</i> (Walker, 1858)	Noctuidae	DECu3k	Ci, DPS, DPT, RR	New listing
<i>Proterodesma chathamica</i> Dugdale, 1971	Tineidae	DECu3k	DPS, DPT, IE, PF	New listing
<i>Pseudocoremia alba fasciata</i> (Philpott, 1915)	Geometridae	DECu3j	Sp. Ci, CR, DPS, DPT, RR	Better
<i>Pyrgotis pyramidias</i> s.s. Meyrick, 1901	Tortricidae	DECu3j	Sp. DPR, DPS, DPT	Worse
<i>Pyrgotis transfixa</i> (Meyrick, 1924)	Tortricidae	DECu3j	Sp. CR, DPR, DPT	Worse
<i>Sabatina calliarcha</i> Meyrick, 1912	Micropterigidae	DECu3m	Sp. Ci, DPS, DPT	New listing
<i>Samana acutata</i> Butler, 1877	Geometridae	DECu3j	Sp. Ci, RR, Rel	Worse
<i>Samana falcata</i> Walker, 1863	Geometridae	DECu4k	Sp. Ci, PF, RR, Rel	New listing
<i>Stathmopoda albimaculata</i> Philpott, 1931	Stathmopodidae	DECu3j	Sp. Ci, DPT, PF, RR	Better
<i>Tatosoma agrionata</i> (Walker, 1862)	Geometridae	DECu3l	PF	No change
<i>Theoxena scissaria</i> (Guenée, 1868)	Geometridae	DECu3j	Ci, CR, DPS, DPT, Rel	Better
<i>Xanthorhoe frigida</i> Howes, 1946	Geometridae	DECu3j	Sp. CR, DPT, RR	Better
<i>Zelleria sphenota</i> (Meyrick, 1889)	Yponomeutidae	DECu3l	RR	No change
Taxonomically Unresolved (10)				
<i>Bactra</i> sp. B (NZAC04285472; "Ermpodisma")	Tortricidae	DECu3k	CD, RR, Rel	Worse
<i>Chalastra</i> cf. <i>pellurgata</i> (NZAC04193100)	Geometridae	DECu3k	DPS, DPT, RR, Rel	Worse
<i>Clepsicosma</i> sp. A (NZAC04285473; Ttirangi)	Crambidae	DECu3k	DPT, RR, Rel	Better
<i>Ericodesma</i> sp. (NZAC04285489; "mingimingi")	Tortricidae	DECu4k	Ci, RR, Rel	Neutral
<i>Meterana</i> cf. <i>tetrachroa</i> (NZAC04285469)	Noctuidae	DECu3j	Sp. Ci, DPT, PF, Rel	Better
<i>Orocrambus</i> sp. A (NZAC04285480; Mackenzie Basin)	Crambidae	DECu4l	Ci, CR, RR, Rel	Better
<i>Paspiphila</i> sp. A (NZAC04285482; "Carmichaelia")	Geometridae	DECu3k	DPT, RR	New listing
<i>Paspiphila</i> sp. B (NZAC04285497; "Olearia")	Geometridae	DECu3j	Ci, RR, Rel	Better
<i>Paspiphila</i> sp. cf. <i>magnimaculata</i> (NZAC04196531)	Geometridae	DECu4k	Sp. Ci, CD, DPS, DPT, PD, PF, Rel	No change

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Protosynaema</i> sp. ("Olearia")	Glyphipterigidae	DECu3j	Sp, Rel	Better
UNCOMMON (84)				
Taxonomically Determinate (82)				
<i>Aoraia insularis</i> Dugdale, 1994	Hepialidae	UNCu2k	DPT	New listing
<i>Aoraia macropis</i> Dugdale, 1994	Hepialidae	UNCu2k	DPT, RR	New listing
<i>Aoraia orientalis</i> Dugdale, 1994	Hepialidae	UNCu2k	CI, DPS, DPT	New listing
<i>Archyala lindsayi</i> (Philpott, 1927)	Tineidae	UNCu2j	Sp	No change
<i>Arctesthes siris</i> (Hudson, 1908)	Geometridae	UNCn2k	CI, DPS	New listing
<i>Asaphodes chlorocapna</i> (Meyrick, 1925)	Geometridae	UNCu2j	DPT, IE, RR, Rel	No change
<i>Austramathes pessota</i> (Meyrick, 1887)	Noctuidae	UNCu2l	Sp, DPS, DPT	New listing
<i>Austramathes squaliolus</i> Hoare, 2017	Noctuidae	UNCu2j	DPS, DPT, IE, RR	New listing
<i>Bityla sericea</i> Butler, 1877	Noctuidae	UNCu2l	Sp, DPT	No change
<i>Chersadula ochrogastra</i> Meyrick, 1923	Oecophoridae	UNCu2j	DPR, DPS, DPT, PF, RR, Rel	Neutral
<i>Chrysolarentia subrectaria</i> (Guenée, 1858)	Geometridae	UNCu2l	Sp, DPT, SO	New listing
<i>Circoxena ditrocha</i> Meyrick, 1916	Elachistidae	UNCu2l	Sp, DPT	No change
<i>Ctenarctis cramboides</i> Dugdale, 1995	Carposinidae	UNCu2k	Sp, DPS, DPT	No change
<i>Ctenopseustis filicis</i> Dugdale, 1990	Tortricidae	UNCu2l	DPR, DPS, DPT	New listing
<i>Gadira petraula</i> (Meyrick, 1882)	Crambidae	UNCu2k		No change
<i>Heloxycanus patricki</i> Dugdale, 1994	Hepialidae	UNCu2k	CI, RR	Better
<i>Hierodoris extensis</i> Hoare, 2012	Xyloryctidae	UNCn2i	DPS, DPT, RR	No change
<i>Hierodoris iophanes</i> Meyrick, 1912	Xyloryctidae	UNCu2l	DPS, DPT, PF	New listing
<i>Hierodoris pachystegiae</i> Hoare, 2005	Xyloryctidae	UNCu2j	DPS, DPT, RR	New listing
<i>Hierodoris stella</i> (Meyrick, 1914)	Xyloryctidae	UNCu2l	Sp, DPT, Rel	No change
<i>Hierodoris</i> s.l. <i>stellata</i> Philpott, 1918	Glyphipterigidae	UNCu2l	Sp, DPS, DPT	New listing
<i>Hierodoris torrida</i> Hoare, 2005	Xyloryctidae	UNCu2l	Rel	No change
<i>Houacima flexillissima</i> Hoare, Dugdale & Watts, 2006	Pterolonchidae	UNCu2k	CD, RR, Rel	No change
<i>Ichneutica blenheimensis</i> (Fereday, 1883)	Noctuidae	UNCu2l	Sp	No change
<i>Ichneutica bromias</i> (Meyrick, 1902)	Noctuidae	UNCu2l	IE	New listing
<i>Ichneutica brunneosa</i> (Fox, 1970)	Noctuidae	UNCu2l	Sp, DPS, DPT	New listing
<i>Ichneutica cornuta</i> Hoare, 2019	Noctuidae	UNCu2l	Sp, DPT	New listing

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Ichneutica dione</i> Hudson, 1898	Noctuidae	UNCu2I	Sp. DPR, DPS, DPT	New listing
<i>Ichneutica emmersonorum</i> Hoare, 2019	Noctuidae	UNCu2I	Sp. DPS, DPT, OL, RR	New listing
<i>Ichneutica erebia</i> (Hudson, 1909)	Noctuidae	UNCu2I	IE	New listing
<i>Ichneutica fenwicki</i> (Philpott, 1921)	Noctuidae		DPS, DPT	New listing
<i>Ichneutica inscripta</i> Hoare, 2019	Noctuidae		Sp. DPR, DPS, DPT	New listing
<i>Ichneutica marmorata</i> (Hudson, 1924)	Noctuidae	UNCu2k	Sp. DPS, DPT, PF, RR	New listing
<i>Ichneutica notata</i> Salmon 1946	Noctuidae	UNCu2I	Sp. DPR, DPS, DPT	New listing
<i>Ichneutica olivae</i> (Watt, 1916)	Noctuidae	UNCu2k	Sp. DPR, DPS, DPT	New listing
<i>Ichneutica omicron</i> (Hudson, 1898)	Noctuidae	UNCu2k	DPS, DPT, RR	No change
<i>Ichneutica paraxysta</i> (Meyrick, 1929)	Noctuidae	UNCu2k	DPS, DPT, RR	New listing
<i>Ichneutica pelanodes</i> (Meyrick, 1931)	Noctuidae	UNCu2I	DPR, DPS, DPT, RR	New listing
<i>Ichneutica peridotea</i> Hoare, 2019	Noctuidae	UNCu2k	DPS, DPT, RR, Rel	New listing
<i>Ichneutica petrograpta</i> (Meyrick, 1929)	Noctuidae	UNCu2k	DPS, DPT, RR	New listing
<i>Ichneutica rufistriga</i> Hoare, 2019	Noctuidae	UNCu2j	CD, IE	New listing
<i>Ichneutica seducta</i> Hoare, 2019	Noctuidae	UNCu2j	IE, RR	New listing
<i>Ichneutica sistens</i> (Guenée, 1868)	Noctuidae	UNCu2k		Neutral
<i>Ichneutica subcyprea</i> Hoare, 2019	Noctuidae	UNCu2I	Sp. DPR, DPS, DPT, PF, RR	New listing
<i>Ichneutica supersulcana</i> Hoare, 2019	Noctuidae	UNCx2k	DPR, DPS, DPT, RR	New listing
<i>Ichneutica thalassarche</i> Hoare, 2019	Noctuidae	UNCu2j	DPS, DPT, IE	New listing
<i>Isonomeutis restricta</i> Meyrick, 1923	Copromorphidae	UNCu2I	DPS, DPT, RR	No change
<i>Izatha apodoxa</i> (Meyrick, 1888)	Xyloryctidae	UNCu2I	DPS, DPT	New listing
<i>Izatha caustopa</i> (Meyrick, 1892)	Xyloryctidae	UNCu2I		Neutral
<i>Izatha dasydisca</i> Hoare, 2010	Xyloryctidae	UNCu2k	Sp	No change
<i>Izatha dulcior</i> Hoare, 2010	Xyloryctidae	UNCn2j	IE, RR	No change
<i>Izatha florida</i> Philpott, 1927	Xyloryctidae	UNCn2j	CI, DPS, DPT	New listing
<i>Izatha gekkonella</i> Hoare, 2010	Xyloryctidae	UNCu2k	Sp. DPS, DPT	New listing
<i>Izatha gibbsi</i> Hoare, 2010	Xyloryctidae	UNCu2k	Sp. DPS, DPT	No change
<i>Izatha haumu</i> Hoare, 2010	Xyloryctidae	UNCu2k	OL, RR	No change
<i>Izatha ignyarcha</i> Hoare, 2010	Xyloryctidae	UNCu2k	DPS, DPT, PF	New listing

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Izatha minimira</i> Hoare, 2010	Xyloryctidae	UNCu2k	Sp	No change
<i>Izatha oleariae</i> Dugdale, 1971	Xyloryctidae	UNCn2j	IE, RR	No change
<i>Izatha spheniscella</i> Hoare, 2010	Xyloryctidae	UNCn2h	IE, RR	No change
<i>Izatha taingo</i> Hoare, 2010	Xyloryctidae	UNCu2k	RR	No change
<i>Meterana exquisita</i> (Philpott, 1903)	Noctuidae	UNCu2i	RR, Rel	No change
<i>Meterana octans</i> (Hudson, 1898)	Noctuidae	UNCu2k	Sp, DPS, DPT, PF, RR, Rel	New listing
<i>Meterana pansicolor</i> (Howes, 1912)	Noctuidae	UNCu2i	Sp, RR	No change
<i>Mnesarchaea fusca</i> Philpott, 1922	Mnesarchaeidae	UNCu2k	CI, DPS, DPT, PF, RR	New listing
<i>Mnesarchella stelae</i> Gibbs, 2019	Mnesarchaeidae	UNCu2j	RR	No change
<i>Mnesarchella vulcanica</i> Gibbs, 2019	Mnesarchaeidae	UNCu2i	DPR	New listing
<i>Notoreas ischnocyma</i> Meyrick, 1905	Geometridae	UNCu2i	CI, DPS, DPT, RR	New listing
<i>Orocrambus catacaustus</i> (Meyrick, 1885)	Crambidae	UNCn2i	CI, DPS, DPT, PF	New listing
<i>Pseudocoremia dugdalei</i> Stephens & Gibbs, 2003	Geometridae	UNCn2i	Sp	New listing
<i>Pseudocoremia fluminea</i> (Philpott, 1926)	Geometridae	UNCu2i	DPS, DPT	Better
<i>Sabatrinca aurantissima</i> Gibbs, 2014	Micropterigidae	UNCu2k	DPS, DPT, RR	New listing
<i>Sabatrinca bimaculata</i> Gibbs, 2014	Micropterigidae	UNCn2k	RR	No change
<i>Sabatrinca demissa</i> Philpott, 1923	Micropterigidae	UNCu2k	Sp, CI, DPS	New listing
<i>Sabatrinca lucilia</i> Clarke, 1920	Micropterigidae	UNCu2i	Sp, DPS, DPT, EF	New listing
<i>"Schiffermuelleria" orthophanes</i> (Meyrick, 1905)	Xyloryctidae	UNCu2i	DPS, DPT, EF	Better
<i>Stigmella laquaeorum</i> (Dugdale, 1971)	Nepticulidae	UNCn2i	IE, RR	No change
<i>Tatosoma monovioidisata</i> Clarke, 1920	Geometridae	UNCu2i	Sp, DPS, RR	New listing
<i>Thamnotricha vates</i> Meyrick, 1922	Epermeniidae	UNCu2k	Sp, DPS, DPT	No change
<i>"Tinea" texta</i> Meyrick, 1931	Tineidae	UNCu2k	Sp, DPS, DPT, Rel	Neutral
<i>Titanomis sisyrota</i> Meyrick, 1888	Lepidoptera incertae sedis	UNCu1k	Sp, DPS, DPT, EF, Inc, PF, RR, Rel	Neutral
<i>Trachypepla cyphonias</i> Meyrick, 1927	Oecophoridae	UNCu2k	Sp	No change
<i>Vanessa gonerilla ida</i> (Alfken, 1899)	Nymphalidae	UNCu2i	IE	New listing
Taxonomically Unresolved (2)				
<i>Dichromodes</i> sp. C (NZAC04238764; "plain grey")	Geometridae	UNCu2k	RR	Worse
<i>Stigmella</i> sp. B (NZAC04285487; "Traversia")	Nepticulidae	UNCu2j	DPS, DPT, RR	Better

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
NOT THREATENED (154)				
Taxonomically Determinate (149)				
<i>Aeneus virescens</i> (Doubleday, 1843)	Hepialidae			New listing
<i>Aoraia aurimaculata</i> (Philpott, 1914)	Hepialidae	NTu2m		New listing
<i>Aoraia dinodes</i> (Meyrick, 1880)	Hepialidae	NTu2m		New listing
<i>Aoraia enysii</i> (Butler, 1877)	Hepialidae	NTu2m	DPT	New listing
<i>Aoraia lenis</i> Dugdale, 1994	Hepialidae	NTu2m	DPT	New listing
<i>Aoraia rufivena</i> Dugdale, 1994	Hepialidae	NTu2m		New listing
<i>Aoraia senex</i> (Hudson, 1908)	Hepialidae	NTu2m		New listing
<i>Arctesthes catapyrrha</i> (Butler, 1877)	Geometridae			New listing
<i>Argyrohenga antipodum</i> Doubleday, 1845	Nymphalidae	NTu2m		New listing
<i>Argyrohenga harrisi</i> Craw, 1978	Nymphalidae	NTu2m		New listing
<i>Argyrohenga janitae</i> Craw, 1978	Nymphalidae	NTu2m		New listing
<i>Austramathes fortis</i> (Butler, 1880)	Noctuidae	NTu2m		New listing
<i>Austramathes purpurea</i> (Butler, 1879)	Noctuidae	NTu2m		New listing
<i>Cadmogenes literata</i> Meyrick, 1923	Lepidoptera incertae sedis			No change
<i>Cladoxycanus minos</i> (Hudson, 1905)	Hepialidae	NTu2m		New listing
<i>Ctenopseustis fraterna</i> Philpott, 1930	Tortricidae	NTu2m		New listing
<i>Ctenopseustis herana</i> (Felder & Rogenhofer, 1875)	Tortricidae	NTu2m		New listing
<i>Ctenopseustis obliquana</i> (Walker, 1863)	Tortricidae	NTu2m		New listing
<i>Danaus plexippus</i> (Linnaeus, 1758)	Nymphalidae	NTu2f	SO	New listing
<i>Dioxycanus fuscus</i> (Philpott, 1914)	Hepialidae	NTu2m		New listing
<i>Dioxycanus oreas</i> (Hudson, 1920)	Hepialidae	NTu2m		New listing
<i>Dumbletonius characterifer</i> (Walker, 1865)	Hepialidae	NTu2m		New listing
<i>Dumbletonius unimaculatus</i> (Salmon, 1948)	Hepialidae	NTu2m		New listing
<i>Hierodoris atychioides</i> (Butler, 1877)	Xyloryctidae			New listing
<i>Hierodoris callispora</i> (Meyrick, 1912)	Xyloryctidae			New listing
<i>Hierodoris frigida</i> Philpott, 1923	Xyloryctidae			New listing
<i>Hierodoris illita</i> (Felder & Rogenhofer, 1875)	Xyloryctidae			New listing

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Hierodoris s-fractum</i> Hoare, 2005	Xyloryctidae			New listing
<i>Hierodoris tygris</i> Hoare, 2005	Xyloryctidae			No change
<i>Ichneutica aconitidis</i> (Meyrick, 1887)	Noctuidae			New listing
<i>Ichneutica agorastis</i> (Meyrick, 1887)	Noctuidae			New listing
<i>Ichneutica alopa</i> (Meyrick, 1887)	Noctuidae			New listing
<i>Ichneutica arotis</i> (Meyrick, 1887)	Noctuidae			New listing
<i>Ichneutica atristriga</i> (Walker, 1865)	Noctuidae			New listing
<i>Ichneutica averilla</i> (Hudson, 1921)	Noctuidae			New listing
<i>Ichneutica barbara</i> Hoare, 2019	Noctuidae			New listing
<i>Ichneutica cana</i> Howes, 1914	Noctuidae			New listing
<i>Ichneutica ceraunias</i> Meyrick, 1887	Noctuidae			New listing
<i>Ichneutica chlorodonta</i> (Hampson, 1911)	Noctuidae			New listing
<i>Ichneutica cuneata</i> (Philpott, 1916)	Noctuidae			New listing
<i>Ichneutica disiungens</i> (Walker, 1858)	Noctuidae			New listing
<i>Ichneutica epiastrea</i> (Meyrick, 1911)	Noctuidae			New listing
<i>Ichneutica falsidica</i> (Meyrick, 1911)	Noctuidae			New listing
<i>Ichneutica hartii</i> (Howes, 1914)	Noctuidae			New listing
<i>Ichneutica infensa</i> (Walker, 1857)	Noctuidae			New listing
<i>Ichneutica insignis</i> (Walker, 1865)	Noctuidae			New listing
<i>Ichneutica lignana</i> (Walker, 1857)	Noctuidae			New listing
<i>Ichneutica lissoxyla</i> (Meyrick, 1911)	Noctuidae			New listing
<i>Ichneutica lithias</i> (Meyrick, 1887)	Noctuidae			New listing
<i>Ichneutica maya</i> (Hudson, 1898)	Noctuidae			New listing
<i>Ichneutica moderata</i> (Walker, 1865)	Noctuidae			New listing
<i>Ichneutica mollis</i> (Howes, 1908)	Noctuidae			New listing
<i>Ichneutica morosa</i> (Butler, 1880)	Noctuidae			New listing
<i>Ichneutica mustulenta</i> Hoare, 2019	Noctuidae			New listing
<i>Ichneutica mutans</i> (Walker, 1857)	Noctuidae			New listing
<i>Ichneutica nobilia</i> (Howes, 1946)	Noctuidae			New listing
<i>Ichneutica nullifera</i> (Walker, 1857)	Noctuidae			New listing
<i>Ichneutica oliveri</i> (Hampson, 1911)	Noctuidae			New listing

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Ichneutica omoplaca</i> (Meyrick, 1887)	Noctuidae			New listing
<i>Ichneutica paracausta</i> (Meyrick, 1887)	Noctuidae			New listing
<i>Ichneutica plena</i> (Walker, 1865)	Noctuidae			New listing
<i>Ichneutica propria</i> (Walker, 1856)	Noctuidae			New listing
<i>Ichneutica purdii</i> (Fereday, 1883)	Noctuidae			New listing
<i>Ichneutica rubescens</i> (Butler, 1879)	Noctuidae			New listing
<i>Ichneutica scutata</i> (Meyrick, 1929)	Noctuidae			New listing
<i>Ichneutica semivittata</i> (Walker, 1865)	Noctuidae			New listing
<i>Ichneutica skelloni</i> (Butler, 1880)	Noctuidae			New listing
<i>Ichneutica sollennis</i> (Meyrick, 1914)	Noctuidae			New listing
<i>Ichneutica steropastis</i> (Meyrick, 1887)	Noctuidae			New listing
<i>Ichneutica sulcana</i> (Fereday, 1880)	Noctuidae			New listing
<i>Ichneutica unica</i> (Walker, 1856)	Noctuidae			New listing
<i>Ichneutica ustistriga</i> (Walker, 1857)	Noctuidae			New listing
<i>Ichneutica virescens</i> (Butler, 1879)	Noctuidae			New listing
<i>Ipana griseata</i> Hudson, 1898	Geometridae		CD, DPT	Better
<i>Ischalis fortinata</i> (Guenée, 1868)	Geometridae			New listing
<i>Ischalis gallaria</i> (Walker, 1860)	Geometridae			New listing
<i>Ischalis neisonaria</i> (Felder & Rogenhofer, 1875)	Geometridae			New listing
<i>Ischalis variabilis</i> (Warren, 1895)	Geometridae			New listing
<i>Izatha acmonias</i> Philpott, 1921	Xyloryctidae			New listing
<i>Izatha attactella</i> Walker, 1864	Xyloryctidae			New listing
<i>Izatha austera</i> (Meyrick, 1884)	Xyloryctidae			New listing
<i>Izatha balanophora</i> (Meyrick, 1897)	Xyloryctidae			New listing
<i>Izatha blepharidota</i> Hoare, 2010	Xyloryctidae			New listing
<i>Izatha churtoni</i> Dugdale, 1988	Xyloryctidae			New listing
<i>Izatha convulsella</i> (Walker, 1864)	Xyloryctidae			New listing
<i>Izatha copiosella</i> (Walker, 1864)	Xyloryctidae			New listing
<i>Izatha epiphanes</i> (Meyrick, 1883)	Xyloryctidae			New listing
<i>Izatha heroica</i> Philpott, 1926	Xyloryctidae			New listing
<i>Izatha hudsoni</i> Dugdale, 1988	Xyloryctidae			New listing

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Izatha huttonii</i> Butler, 1879	Xyloryctidae			New listing
<i>Izatha katadikiya</i> Hoare, 2010	Xyloryctidae			New listing
<i>Izatha mesoschista</i> Meyrick, 1931	Xyloryctidae			New listing
<i>Izatha metadelta</i> (Meyrick, 1905)	Xyloryctidae			New listing
<i>Izatha peroneanella</i> (Walker, 1864)	Xyloryctidae			New listing
<i>Izatha phaeoptila</i> (Meyrick, 1905)	Xyloryctidae			New listing
<i>Izatha picarella</i> (Walker, 1864)	Xyloryctidae			New listing
<i>Izatha prasophyta</i> (Meyrick, 1883)	Xyloryctidae			New listing
<i>Izatha voluptuosa</i> Hoare, 2010	Xyloryctidae			No change
<i>Lampides boeticus</i> (Linnaeus, 1767)	Lycaenidae		SO	New listing
<i>Lycaena boldenarum</i> (Salmon, 1946)	Lycaenidae			New listing
<i>Lycaena feredayi</i> (Bates, 1867)	Lycaenidae			New listing
<i>Lycaena rauparaha</i> (Fereday, 1877)	Lycaenidae			New listing
<i>Lycaena salustius</i> (Fabricius, 1793)	Lycaenidae			New listing
<i>Metacrias erichnysa</i> Meyrick, 1886	Erebidae			New listing
<i>Metacrias huttoni</i> (Butler, 1879)	Erebidae			New listing
<i>Meterana dotata</i> (Walker, 1857)	Noctuidae			New listing
<i>Meterana pascoi</i> (Howes, 1912)	Noctuidae			New listing
<i>Meterana praesignis</i> (Howes, 1911)	Noctuidae			New listing
<i>Mnesarchaea fallax</i> Philpott, 1927	Noctuidae		Sp	No change
<i>Mnesarchaea hudsoni</i> Gibbs, 2019	Mnesarchaeidae			New listing
<i>Mnesarchaea paracosma</i> Meyrick, 1885	Mnesarchaeidae			New listing
<i>Mnesarchella acuta</i> (Philpott, 1929)	Mnesarchaeidae			New listing
<i>Mnesarchella dugdalei</i> Gibbs, 2019	Mnesarchaeidae			New listing
<i>Mnesarchella falcata</i> Gibbs, 2019	Mnesarchaeidae			New listing
<i>Mnesarchella fusilella</i> (Walker, 1864)	Mnesarchaeidae			New listing
<i>Mnesarchella hamadeipha</i> (Meyrick, 1888)	Mnesarchaeidae			New listing
<i>Mnesarchella toxoscia</i> (Meyrick, 1888)	Mnesarchaeidae			New listing
<i>Mnesarchella ngahuru</i> Gibbs, 2019	Mnesarchaeidae			New listing
<i>Mnesarchella philpotti</i> Gibbs, 2019	Mnesarchaeidae			New listing
<i>Physetica caerulea</i> (Guenée, 1868)	Noctuidae			New listing

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Physetica cucullina</i> (Guenée, 1868)	Noctuidae			New listing
<i>Physetica funerea</i> (Philpott, 1927)	Noctuidae			New listing
<i>Physetica homoscia</i> (Meyrick, 1887)	Noctuidae			New listing
<i>Physetica longstaffi</i> (Howes, 1911)	Noctuidae			New listing
<i>Physetica phricias</i> (Meyrick, 1888)	Noctuidae			New listing
<i>Physetica prionistis</i> (Meyrick, 1887)	Noctuidae			New listing
<i>Physetica sequens</i> (Howes, 1912)	Noctuidae			New listing
<i>Proteuxoa comma</i> (Walker, 1856)	Noctuidae			New listing
<i>Proteuxoa tetronycha</i> Hoare, 2017	Noctuidae			New listing
<i>Sabatinka aemula</i> Philpott, 1924	Micropterigidae			New listing
<i>Sabatinka aenea</i> Hudson, 1923	Micropterigidae			New listing
<i>Sabatinka aurella</i> Hudson, 1918	Micropterigidae			New listing
<i>Sabatinka caustica</i> Meyrick, 1912	Micropterigidae			New listing
<i>Sabatinka chalcophanes</i> (Meyrick, 1885)	Micropterigidae			New listing
<i>Sabatinka chysargyra</i> (Meyrick, 1885)	Micropterigidae			New listing
<i>Sabatinka doroxena</i> (Meyrick, 1888)	Micropterigidae			New listing
<i>Sabatinka heighwayi</i> Philpott, 1927	Micropterigidae			New listing
<i>Sabatinka incongruella</i> Walker, 1863	Micropterigidae			New listing
<i>Stigmella maoriella</i> (Walker, 1864)	Nepticulidae			No change
<i>Tinea belomota</i> Meyrick, 1888	Tineidae			No change
<i>Vanessa gonerilla gonerilla</i> (Fabricius, 1775)	Nymphalidae	NTu2m		New listing
<i>Vanessa itea</i> (Fabricius, 1775)	Nymphalidae	NTu2m	SO	New listing
<i>Wiseana cervinata</i> (Walker, 1865)	Hepialidae			New listing
<i>Wiseana copularis</i> (Meyrick, 1912)	Hepialidae			New listing
<i>Wiseana signata</i> (Walker, 1856)	Hepialidae			New listing
<i>Wiseana umbraculata</i> (Guenée, 1868)	Hepialidae			New listing
<i>Zealandopterix zonodoxa</i> (Meyrick, 1888)	Micropterigidae	NTu2m		New listing
<i>Zizina otis labradus</i> (Godart, 1824)	Lycaenidae	NTu2m	SO	New listing
<i>Zizina oxleyi</i> (Felder & Felder, 1865)	Lycaenidae			No change

Taxonomically Unresolved (5)

NAME AND AUTHORITY	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE
<i>Lycaena caerulea</i> Salmon, 1946	Lycaenidae			New listing
<i>Lycaena edna</i> Doubleday, 1843	Lycaenidae			New listing
<i>Lycaena enysii</i> (Butler, 1876)	Lycaenidae			New listing
<i>Lycaena tama</i> (Fereday, 1878)	Lycaenidae			New listing
<i>Pyrgotis pyramidias s.l.</i> Meyrick, 1901	Tortricidae			New listing
NON-RESIDENT NATIVE (8)				
VAGRANT (6)				
Taxonomically Determinate (6)				
<i>Delias nigrina</i> (Fabricius, 1775)	Pieridae			New listing
<i>Hypolimnas bolina</i> (Linnaeus, 1758)	Nymphalidae			New listing
<i>Junonia villida</i> (Fabricius, 1787)	Nymphalidae			New listing
<i>Melanitis leda bankia</i> (Fabricius, 1775)	Nymphalidae			New listing
<i>Tirumala hamata</i> (Macleay, 1826)	Nymphalidae			New listing
<i>Vanessa kershawi</i> (McCoy, 1868)	Nymphalidae		SO	New listing
COLONISER (2)				
Taxonomically Determinate (2)				
<i>Danaus petilia</i> (Stoll, 1790)	Nymphalidae			New listing
<i>Peripyrus sanguinipuncta</i> (Guenée, 1852)	Noctuidae			New listing
INTRODUCED AND NATURALISED (5)				
Taxonomically Determinate (5)				
<i>Ephesia kuehniella</i> Zeller, 1879	Pyralidae		SO	Neutral
<i>Nyctemera amica</i> (White, 1841)	Erebidae			New listing
<i>Opodiphthera eucalypti</i> (Scott, 1864)	Saturniidae			New listing
<i>Pieris rapae</i> (Linnaeus, 1758)	Pieridae			New listing
<i>Tyria jacobaeae</i> (Linnaeus, 1758)	Erebidae			New listing

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Appendix 1.

Regional assessment and naming opportunities for *Notoreas perornata*

New science has unified many previously named local populations of *Notoreas perornata* into a single species (Hoare et al. 2023), now assessed nationally as At Risk – Declining (this report). Although some populations are relatively secure, many isolated populations – particularly coastal ones – have persisted for thousands of years and now face the risk of extinction due to a range of human-induced pressures. We encourage regional and local stewardship to consider these subpopulations in biodiversity planning. Each has a technical museum reference (Table A1.1), but there is also an opportunity for mana whenua, community groups or councils to provide their own locally meaningful common names.

Table A1.1 List of criteria relevant for a regional assessment of *Notoreas perornata* sub-populations.

NAME AND AUTHORITY IN HOARE ET AL. (2017)	RECOMMENDED REFERENCE TO SUB-POPULATIONS	REGION	ESTIMATED POPULATION SIZE	ESTIMATED POPULATION TREND
<i>Notoreas perornata</i> “Cape Campbell”	<i>Notoreas perornata</i> A (NZAC04226312; Cape Campbell)	Marlborough	Area = 1–10 ha	DECR 30–50%
<i>Notoreas perornata</i> “Cape Turnagain”	<i>Notoreas perornata</i> B (NZAC04255163; Cape Turnagain)	Manawatu-Wanganui	Area ≤ 1 ha	DECR 30–50%
<i>Notoreas perornata</i> “Castlepoint”	<i>Notoreas perornata</i> C (NZAC04167369; Castlepoint)	Wellington	Area ≤ 1 ha	DECR 30–50%
<i>Notoreas perornata</i> “ND/AK”	<i>Notoreas perornata</i> D (NZAC04193369; ND/AK)	Auckland	Area = 1–10 ha	DECR 50–70%
N/A	<i>Notoreas perornata</i> E (NZAC04203952; North Nelson)	Nelson	Area = 1–10 ha	DECR 30–50%
<i>Notoreas perornata</i> “TK/NN”	<i>Notoreas perornata</i> F (NZAC04255162; Taranaki)	Taranaki	Area = 1–10 ha	DECR 30–50%
<i>Notoreas perornata</i> “WA/WN”	<i>Notoreas perornata</i> G (NZAC04195325; WA/WN)	Wellington	Area = 10–100 ha	DECR 30–50%
<i>Notoreas perornata</i> “Waiho Flats”	<i>Notoreas perornata</i> H (NZAC04192392; Waiho Flats)	West Coast	Area ≤ 1 ha	DECR > 70%

Appendix 2

Minor changes to NZTCS categories, criteria and qualifiers affecting the assessment of Lepidoptera

Minor changes to the categories, criteria and qualifiers from the previous assessment are as follows:

- The statuses At Risk - Naturally Uncommon and At Risk - Relict did not allow for taxa that had declined and then stabilised at a level greater than 10% of their former range. To address this, these statuses have been combined and renamed At Risk - Uncommon, with the population state value (Natural, Unnatural or Unknown) indicating whether the population size is a natural or induced state. For taxa with stable populations that occupy less than 10% of their former ranges, the status At Risk - Relict has been replaced by the qualifier Relict.
- The qualifier Climate Impact (CI) has been added to reflect new pressures from changing environments and to acknowledge taxa that are or will be adversely affected by long-term climate trends and/or extreme events. Adverse effects of climate change may be direct (e.g. extreme weather) or indirect (e.g. a change in predator pressure following masting events).
- The qualifier Conservation Research Needed (CR) has been added to indicate the need for research to better understand the cause of decline and/or a solution for recovery.
- The qualifier Data Poor (DP) has been replaced by the qualifiers Data Poor Recognition (DPR), Data Poor Size (DPS) and Data Poor Trend (DPT) to indicate whether the low confidence in the assessment is due to difficulty in determining the identity of the taxon in the field and/or laboratory, a lack of data on population size, or a lack of data on population trend.
- The qualifier Population Fragmentation (PF) has been added to indicate that gene flow between sub-populations is hampered as a direct or indirect result of human activity.
- The qualifier Possibly Extinct (PE) has been added to indicate that a taxon has not been observed for more than 50 years and may be extinct but there has been insufficient search effort to formally declare it extinct.

Appendix 3

NZTCS criteria and categories

Full details of the criteria and categories included in Table 6 can be found in Rolfe et al. (2022).

Criteria codes

Resident native taxa are assessed for their conservation status, based on population state, size and trend criteria. These criteria are coded as shown in Table A1.1 to provide a short-hand summary of each assessment.

Table A1.1. Codes used in NZTCS assessments. INC = increasing, DEC = decreasing, MATIND = number of mature individuals, AREA = area of occupancy, SUBPOP = total number of sub-populations. This table is sourced from Rolfe et al. (2022, p. 20).

CONSERVATION STATUS		POPULATION STATE		POPULATION TREND		POPULATION SIZE	
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
NC	Nationally Critical	n	Natural	1	INC >10%	a	MATIND < 250
NE	Nationally Endangered	u	Unnatural	2	STABLE (±10%)	b	MATIND 250–1,000
NV	Nationally Vulnerable	x	Unknown	3	DEC 10–30%	c	MATIND 1,000–5,000
NI	Nationally Increasing			4	DEC 30–50%	d	MATIND 5,000–20,000
DEC	Declining			5	DEC 50–70%	e	MATIND 20,000–100,000 ^a
REC	Recovering			6	DEC >70%	f	MATIND >100,000 ^b
UNC	Uncommon					g	AREA <1 ha
NT	Not Threatened					h	AREA 1–10 ha
						i	AREA 10–100 ha
						j	AREA 100–1,000 ha
						k	AREA 1,000–10,000 ha
						l	AREA 10,000–100,000 ha
						m	AREA >100,000 ha ^c
						n	SUBPOP 2, MATIND < 200 in largest sub-population
						o	SUBPOP 3–5, MATIND 200–300 in largest sub-population
						p	SUBPOP 6–15, MATIND 300–500 in largest sub-population
						q	SUBPOP 6–15, MATIND 500–1,000 in largest sub-population
						For stable and increasing populations only	
						r	MATIND 20,000 – 100,000 and AREA <100,000ha
						s	MATIND > 100,000 and AREA <100,000ha
						t	AREA > 100,000ha and MATIND 250–20,000

a Size code 'e' presumes that stable and increasing populations occupy more than 100 000 ha; otherwise use size code 'r'.

b Size code 'f' presumes that stable and increasing populations occupy more than 100 000 ha; otherwise use size code 's'.

c Size code 'm' presumes that stable and increasing populations are > 20 000 MATIND; otherwise use size code 't'.

Assessment code example

Acroclita discariana was assessed as Threatened – Nationally Vulnerable in 2025, based on an unnatural population state, a decline of 10–30% over 10 years and having 6–15 sub-populations with less than 500 mature individuals in the largest sub-population. Thus, its assessment code is **NVu3p**.

Categories

Summary definitions for the categories are presented below.

DATA DEFICIENT

Taxa that cannot be assessed 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 Rolfe et al. (2022).

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 range – that the last individual has died.

THREATENED

Taxa that meet the criteria specified by Rolfe et al. (2022) for the conservation statuses Nationally Critical, Nationally Endangered and Nationally Vulnerable, and Nationally Increasing.

Nationally Critical

Criteria for Nationally Critical:

- Very small population (natural or unnatural) regardless of the trend
 - The total population size is fewer than 250 mature individuals; or
 - The total area of occupancy is less than 1 ha (0.01 km²); or
 - There are 2 sub-populations *and* fewer than 200 mature individuals in the largest sub-population
- Small population that is forecast to decline 50–70% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 250–1,000 mature individuals; or
 - The total area of occupancy is 1–10 ha (0.01–0.1 km²); or
 - There are 3–5 sub-populations *and* ≤ 300 mature individuals in the largest sub-population
- Population that is forecast to decline > 70% over the longer of 10 years or three generations (maximum 100 years), irrespective of the size or number of sub-populations

Nationally Endangered

Criteria for Nationally Endangered:

- Small population that is forecast to remain stable ± 10% (unnatural or unknown)
 - The total population size is 250–1,000 mature individuals; or
 - The total area of occupancy is 1–10 ha (0.01–0.1 km²); or
 - There are 3–5 sub-populations *and* ≤ 300 mature individuals in the largest sub-population
- Small population that is forecast to decline 10–50% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 250–1,000 mature individuals; or
 - The total area of occupancy is 1–10 ha (0.01–0.1 km²); or
 - There are 3–5 sub-populations *and* ≤ 300 mature individuals in the largest sub-population

- Moderate population that is forecast to decline 50–70% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 1,000–5,000 mature individuals; or
 - The total area of occupancy is 10–100 ha (0.1–1 km²); or
 - There are 6–15 sub-populations *and* ≤ 500 mature individuals in the largest sub-population

Nationally Vulnerable

Criteria for Nationally Vulnerable:

- Small population (unnatural) that is forecast to increase by 10% or more, over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 250–1,000 mature individuals; or
 - The total area of occupancy is 1–10 ha (0.01–0.1 km²); or
 - There are 3–5 sub-populations *and* ≤ 300 mature individuals in the largest sub-population
- Moderate population (unnatural) that is forecast to remain stable ± 10% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 1,000–5,000 mature individuals; or
 - The total area of occupancy is 10–100 ha (0.1–1 km²); or
 - There are ≤ 15 sub-populations *and* ≤ 500 mature individuals in the largest sub-population
- Moderate population that is forecast to decline of 10–50% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 1,000–5,000 mature individuals; or
 - The total area of occupancy is 10–100 ha (0.1–1 km²); or
 - There are 6–15 sub-populations *and* ≤ 500 mature individuals in the largest sub-population
- Moderate to large population that is forecast to decline 30–70% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 5,000–20,000 mature individuals; or
 - The total area of occupancy is 100–1,000 ha (1–10 km²); or
 - There are 6–15 sub-populations *and* ≤ 1,000 mature individuals in the largest sub-population
- Large population that is forecast to decline 50–70% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 20,000–100,000 mature individuals; or
 - The total area of occupancy is 1,000–10,000 ha (10–100 km²)

Nationally Increasing

This is a new name and category for At Risk - Recovering (criterion A) of Townsend et al. (2008).

- Small population that has experienced previous decline (or for which it is unknown whether it has experienced a previous decline) *and* that is forecast to increase > 10% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 1,000–5,000 mature individuals; or
 - The total area of occupancy 10–100 ha (1–10 km²); or
 - There are 6–15 sub-populations *and* 300–500 mature individuals in the largest sub-population.

Note: Taxa that have an increasing trend but whose populations are smaller than the size criteria listed here should be classified as Threatened – Nationally Critical or Threatened – Nationally Vulnerable.

AT RISK

Taxa that meet the criteria specified by Rolfe et al. (2022) for Declining, Recovering and Uncommon.

Declining

This conservation status replaces Chronically Threatened – Serious Decline and Chronically Threatened – Gradual Decline of Molloy et al. (2002).

- Moderate to large population that is forecast to decline 10–30% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 5,000–20,000 mature individuals; or
 - The total area of occupancy is 100–1,000 ha (1–10 km²); or
 - There are 6–15 sub-populations *and* 500–1,000 mature individuals in the largest sub-population
- Large population that is forecast to decline of 10–50% over the longer of 10 years or three generations (maximum 100 years)
 - The total populations size is 20,000–100,000 mature individuals; or
 - The total area of occupancy is 1,000–10,000 ha (10–100 km²)
- Very large population that is forecast to decline 10–70% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is > 100,000 mature individuals; or
 - The total area of occupancy > 10,000 ha (100 km²)

Uncommon

This conservation status combines the conservations statuses At Risk – Naturally Uncommon and At Risk – Relict of Townsend et al. (2008), and replaces the conservation statuses At Risk – Range Restricted and At Risk – Sparse of Molloy et al. (2022).

Any taxon with a distribution that is confined to a specific substrate (e.g. ultramafic rock), habitat (e.g. high alpine fellfields, hydrothermal vents) or geographic area (e.g. subantarctic islands, seamounts) or that occurs within small and widely scattered populations is classified as Uncommon. The distribution may be natural or unnatural (i.e. the result of human-induced change) and populations may be stable or increasing.

- Naturally small population that is forecast to increase > 10% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 250–20,000 mature individuals; or
 - The total area of occupancy is 1–100,000 ha (0.01–1,000 km²)
- Unnaturally small area of occupancy that is forecast to increase > 10% over the longer of 10 years or three generations (maximum 100 years)
 - The total area of occupancy is 1,000–100,000 ha (10–1,000 km²)
- Naturally small population that is forecast to remain stable \pm 10% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 250–20,000 mature individuals; or

- The total area of occupancy is 1-100,000 ha (0.01-1,000 km²)
- Unnaturally small population that is forecast to remain stable \pm 10% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 250-20,000 mature individuals; or
 - The total area of occupancy is 100-100,000 ha (1-1,000 km²)
- Naturally or unnaturally moderate to large population that has a small to moderate area of occupancy that is forecast to increase > 10% or remain stable over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is 20,000-100,000 mature individuals *and* the area of occupancy is < 100,000 ha (1,000 km²); or
 - The total population size is > 100,000 mature individuals and the area of occupancy is < 100,000 ha (1,000 km²)

Minimum area of occupancy limits apply, which vary according to the state and trend of the population. If the area of occupancy is lower than the minimum limits listed below, the taxon should be classified as Threatened or At Risk - Recovering:

- Natural, stable or increasing: minimum 1 ha (0.01 km²); or
- Unnatural, stable: minimum 100 ha (1 km²); or
- Unnatural, increasing: minimum 1,000 ha (10 km²)
- Naturally or unnaturally small to moderate population that has a large area of occupancy that is forecast to remain stable over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is < 20,000 mature individuals and the area of occupancy is > 100,000 ha (1,000 km²)

Minimum population size limits apply, which vary according to the state of the population. If the population size is lower than the minimum limits listed below, the taxon will be assessed as Threatened:

- Natural: minimum 250 mature individuals; or
- Unnatural: minimum 5,000 mature individuals

Recovering

- Moderate to large population that has (or may have) experienced a previous decline (within the last 1,000 years) and that is forecast to increase by \geq 10% over the longest of the next 10 years or three generations (maximum 100 years)
 - The total population size is 5,000-20,000 mature individuals; or
 - The total area of occupancy is 100-1,000 ha (1-10 km²); or
 - There are 6-15 sub-populations *and* 500-1,000 mature individuals in the largest sub-population.

NOT THREATENED

- Naturally or unnaturally large population that is forecast to increase > 10% or remain stable \pm 10% over the longer of 10 years or three generations (maximum 100 years)
 - The total population size is greater than 20,000 mature individuals; *and*
 - The total area of occupancy is greater than 100,000 ha (1,000 km²)

NON-RESIDENT NATIVE

Taxa whose natural presence in Aotearoa 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).

Migrant

Taxa that predictably and cyclically visit Aotearoa New Zealand as part of their normal life cycle (a minimum of 15 individuals known or presumed to visit per annum) but do not breed here.

Vagrant

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

INTRODUCED AND NATURALISED

Taxa that have become naturalised in the wild after being deliberately or accidentally introduced into Aotearoa New Zealand by human agency. To be considered naturalised, a taxon must have established a self-sustaining population in the wild over at least three generations and must have spread beyond the site of initial establishment.

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