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Conservation status of marine mammals in Aotearoa New Zealand, 2024

Dave Lundquist, Laura Boren, Simon Childerhouse, Rochelle Constantine, Anton van Helden, Rod Hitchmough, Pascale Michel, Will Rayment and C. Scott Baker

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Te Papa Atawhai

Te Kāwanatanga o Aotearoa
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Cover: Sperm whale (*Physeter macrocephalus*), At Risk – Declining, Kaikōura. *Photo: Will Rayment.*

New Zealand Threat Classification Series is a scientific monograph series presenting publications related to the New Zealand Threat Classification System (NZTCS). Most will be lists providing the NZTCS status of members of a group (e.g. algae, birds, spiders, fungi). There are currently 23 groups, each assessed once approximately every 5 years. From time to time the manual that defines the categories, criteria and process for the NZTCS will be reviewed. Publications in this series are considered part of the formal international scientific literature.

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Abstract

The conservation status of all 57 known taxa of marine mammals in Aotearoa New Zealand was reassessed using the New Zealand Threat Classification System (NZTCS). A list of these taxa is presented, along with a statistical summary and brief notes on the most important changes. This list replaces all previous NZTCS lists for marine mammals. Nine taxa are assessed here as being Threatened, five are At Risk, five are Not Threatened and 17 are Non-resident Native. Twenty-one taxa are considered Data Deficient, indicating that insufficient information is available to assess their conservation status. Only five of the 57 known taxa of marine mammals in Aotearoa New Zealand have not been formally described and named.

Keywords: New Zealand Threat Classification System, NZTCS, New Zealand, Aotearoa, conservation status, marine mammal, whale, dolphin, seal, sea lion, Delphinidae, Phocoenidae, Ziphiidae, Physeteridae, Kogiidae, Neobalaenidae, Balaenopteridae, Balaenidae, Otariidae, Phocidae.

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1. Background

The New Zealand Threat Classification System (NZTCS) was established to complement the International Union for Conservation of Nature (IUCN) Red List system. Categories and criteria were defined to reflect Aotearoa New Zealand's (hereafter New Zealand) unique environments, accounting for the country's relatively small size and diversity of ecosystems, and 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).

Marine mammals were first assessed in 2001 (Hitchmough 2002) and again in 2005 (Hitchmough et al. 2007). The NZTCS's methodology was refined in 2007 following a rigorous review by a team of experts, to ensure that all possible combinations of status and trend were covered within the different categories. The resulting manual (Townsend et al. 2008) was used to reassess the conservation status of marine mammals in 2009 (Baker et al. 2010), 2013 (Baker et al. 2016), and 2019 (Baker et al. 2019).

Minor changes to the categories, criteria and qualifiers of Townsend et al. (2008) were introduced by Rolfe et al. (2022) and were used in the re-assessed conservation status of marine mammals in 2024 (this report). Changes to the previous assessment include:

- The status At Risk – Recovering (criterion A) for taxa with increasing populations that have 1,000–5,000 mature individuals or occupy less than 100 ha, has been moved into the Threatened category and renamed Threatened – Nationally Increasing, with no change to the population criteria. This was done to address the fact that when the growth of a population assessed as At Risk – Recovering (criterion A) stabilised, the taxon met the criteria for the status Threatened – Nationally Vulnerable, despite there being no deterioration in the taxon's population. The term Nationally Increasing does not imply that the population is increasing consistently across its entire geographical range but rather that the total population of the taxon in New Zealand is predicted to increase at > 10% in three generations.
- 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) was added to reflect new pressures from changing environment and acknowledge taxa that are or will be adversely affected by long-term climate trend/or extreme events. Adverse effects of climate change may be direct (e.g. extreme weather) or indirect (e.g. change in prey availability following anomalous oceanographic events).
- The qualifier Conservation Research Needed (CR) indicates a need for research to better understand the cause of decline and/or solution for recovery.
- The qualifier Data Poor (DP) was replaced by three 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 in the laboratory, because of a lack of data on population size, or because of a lack of data on population trend.
- The qualifier Population Fragmentation (PF) indicates that gene flow between sub-populations is hampered as a direct or indirect result of human activity.

A call for information was advertised through the Department of Conservation – Te Papa Atawhai (DOC) 'Have your say' process, the NZTCS website and expert networks. A total of seven submissions covering seven species, as well as published journal articles relevant to this assessment, were received through this process.

When making their assessment, experts consider the previously published assessment as the starting point and evaluate any new information available, both published and unpublished. Taxa are assessed according to the reported population size and trend since the last assessment (usually the past five years) and predicted future changes over the next 10 years or three generations, whichever is the longest.

Taxa are assigned to the category Data Deficient when insufficient data are available to assess their conservation status. Expert panels should use Data Deficient only when there is extreme uncertainty about the abundance and population trend of an organism, i.e. the possible categories it truly occupies cover most or all of the range from Nationally Critical to Not Threatened. If the expert panel is confident that the population is greater than 250 mature individuals or occupies more than one hectare (i.e. the population size is greater than the threshold for Threatened – Nationally Critical), an assessment should be made. The qualifiers DPS and DPT should be used when assessments are made but with low confidence due to limited data being available.

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/order (e.g. natural population fluctuations). The NZTCS requires that a precautionary approach is applied where a taxon is on the border of two possible threat categories, resulting in the higher threat category being chosen. Notes from the expert panel meeting and the rationale 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/1165).

2. Summary

This report presents the conservation status of all known native marine mammal taxa in New Zealand, including migrant and vagrant. It is the latest update in a regular series of assessments (Baker et al. 2010, 2016, 2019). Here, we report on a new assessment of the 57 taxa previously assessed in Baker et al. (2019), using the NZTCS manual (Rolfe et al. 2022).

2.1 Changes to the list of taxa

One taxon, *Mesoplodon mirus*, changed name due to a genomic and morphological re-evaluation of specimens of this species from around the world (Carroll et al. 2021). This analysis provided evidence for the divergence of the Northern and Southern Hemisphere populations, with a new species, *Mesoplodon eueu*, described in the Southern Hemisphere and assessed here. Four other taxa have changed names since the last evaluation in 2019 to reflect the sub-species present in New Zealand waters (Table 1). These revisions in nomenclature do not change the total number of taxa recognised in New Zealand, which remains at 57.

The genus *Orcinus* (orca/killer whales) is now considered to be a complex of multiple undescribed species, with multiple sympatric, reproductively isolated taxa in both Antarctic waters and the eastern North Pacific. The phylogenetic position and wider relationships of the resident New Zealand population are less well understood. However, there is a strong possibility that it is not conspecific with the *Orcinus orca* type specimen, which was from the North Pacific. It is therefore included here as a taxonomically unresolved entity, *Orcinus* aff. *orca*.

Table 2 compares the number of taxa in each conservation status in the previous assessments with the numbers in this report.

As in previous assessments, the panel notes with concern that 21 of the 57 species listed in this report are Data Deficient because a lack of data prevents them from being assessed. A lack of

knowledge does not, however, denote uncertainty about their presence in New Zealand waters. In many instances they are species we are very familiar with, but for which key life history and/or demographic information is unknown. The abundance of a species may be naturally low and sightings of them rare, or they may be cryptic in behaviour, making it difficult to estimate their numbers or determine population trends. It is likely that many of these species are, in fact, threatened due to low numbers, fragmented populations or restricted habitat. In many instances their presence is inferred through information from individual and mass stranding events, but also from at sea (often opportunistic) sightings. Species may range widely, or specific areas may be critical to them in different parts of their lives. While presence of a species in New Zealand waters may be certain, obtaining sufficient data to assign conservation status can be difficult. The status of species is often used for prioritising conservation actions. A presumption of threat for these taxa should be a major incentive for policy makers and developers seeking resource consents to commit resources to their evaluation.

Table 1. Name changes affecting New Zealand marine mammal species between the publication of Baker et al. (2019) and this document.

NAME AND AUTHORITY IN BAKER ET AL. 2019	NAME AND AUTHORITY IN THIS REPORT	COMMON NAME
Balaenoptera borealis Lesson, 1828	*Balaenoptera borealis schlegelii* (Flower, 1865)	Southern sei whale
Balaenoptera physalus (Linnaeus, 1758)	*Balaenoptera physalus quoyi* (Fischer, 1829)	Southern fin whale
Globicephala melas (Traill, 1809)	*Globicephala melas edwardii* (A. Smith, 1834)	Southern long-finned pilot whale
Megaptera novaeangliae (Borowski, 1781)	*Megaptera novaeangliae australis* (Lesson, 1828)	Southern humpback whale
Mesoplodon mirus True, 1913	*Mesoplodon eueu* (Carroll et al. 2021)	Ramari's beaked whale
Orcinus orca (Linnaeus, 1758)	*Orcinus* aff. *orca*	orca

Table 2. Comparison of the status of New Zealand marine mammal taxa assessed in 2009 (Baker et al. 2010), 2013 (Baker et al. 2016), 2019 (Baker et al. 2019) and 2024 (this document).

CONSERVATION STATUS	2009	2013	2019	2024
Data Deficient	13	12	30	21
Threatened – Nationally Critical	5	5	4	4
Threatened – Nationally Endangered	3	2	1	1
Threatened – Nationally Vulnerable	-	1	2	3
Threatened – Nationally Increasing[a]	-	-	1	1
At Risk – Declining	-	-	-	1
At Risk – Uncommon[b]	-	-	2	4
Not Threatened	9	11	5	5
Non-resident Native – Migrant	6	7	1	7
Non-resident Native – Vagrant	20	19	11	10
Total	**56**	**57**	**57**	**57**

[a] The status At Risk – Recovering (criterion A) defined in Townsend et al. (2008) and used in 2019 has been renamed Threatened – Nationally Increasing in this assessment following Rolfe et al. (2022).

[b] The status At Risk – Naturally Uncommon defined in Townsend et al. (2008) and used in 2019 has been renamed At Risk – Uncommon in this assessment following Rolfe et al. (2022).

2.2 Trend

The conservation status of 13 taxa has changed in this assessment (Table 3), with one having an improved status, one having a worsened status, and 11 having neutral changes (Table 4). Six of these changes were due to increased knowledge, with the others due to reinterpretation of existing data or changes to the NZTCS.

Table 3. Summary of status changes of marine mammal taxa between 2019 (data in rows, Baker et al. 2019) and 2024 (data in columns, this report). Numbers in the green shaded cells indicate improved status (e.g.one taxon has moved from Threatened – Nationally Endangered in 2019 to Threatened – Nationally Vulnerable in 2024), numbers in the red shaded cells indicate poorer status, numbers on the diagonal (shaded black) have not changed, and numbers without shading are either taxa that have moved into or out of the categories Data Deficient or Non-resident Native.

		CONSERVATION STATUS 2024										
		Total	DD	NC	NE	NV	NI	DEC	UNC	NT	Mig	Vag
		57	**21**	**4**	**1**	**3**	**1**	**1**	**4**	**5**	**7**	**10**
CONSERVATION STATUS 2019	Data Deficient (DD)	**30**	21			1		1	3		4	
	Threatened – Nationally Critical (NC)	**4**		4								
	Threatened – Nationally Endangered (NE)	**1**				1						
	Threatened – Nationally Vulnerable (NV)	**2**			1	1						
	Threatened – Nationally Increasing (NI)[a]	**1**					1					
	At Risk – Declining (Dec)	**0**										
	At Risk – Naturally Uncommon (Unc)[b]	**2**							1		1	
	Not Threatened (NT)	**5**								5		
	Non-resident Native – Migrant (Mig)	**1**									1	
	Non-resident Native – Vagrant (Vag)	**11**									1	10

[a] Threatened – Nationally Increasing is a new name and category for what was previously named At Risk – Recovering (criterion A).

[b] At Risk – Uncommon is a new name and category for what was previously named At Risk – Naturally Uncommon.

Table 4. Summary of changes to the number of taxa in each conservation status between 2019 (Baker et al. 2019) and 2024 (this report). A 'neutral' change is any movement into or out of Data Deficient.

TYPE OF CHANGE, REASON, CONSERVATION STATUS	NUMBER OF TAXA
IMPROVED STATUS	**1**
More knowledge	**1**
Threatened – Nationally Vulnerable	1
WORSE STATUS	**1**
Reinterpretation of data	**1**
Threatened – Nationally Endangered	1
NEUTRAL CHANGE IN STATUS	**11**
More knowledge	**5**
Threatened – Nationally Vulnerable	1
At Risk – Uncommon	1
Non-resident Native – Migrant	3
Reinterpretation of data	**6**
At Risk – Declining	1
At Risk – Uncommon	2
Non-resident Native – Migrant	3
NO CHANGE IN STATUS	**44**
No change in status	**42**
Data Deficient	21
Threatened – Nationally Critical	4
Threatened – Nationally Vulnerable	1
Not Threatened	5
Non-resident Native – Migrant	1
Non-resident Native – Vagrant	10
Status name changed	**2**
Threatened – Nationally Increasing	1
At Risk – Uncommon	1
Total	**57**

2.2.1 Improved status

The status of common bottlenose dolphins (*Tursiops truncatus*) has changed from Threatened – Nationally Endangered to Threatened – Nationally Vulnerable. Rather than a genuine improvement in status, this change is due to new information demonstrating the population of offshore/oceanic bottlenose dolphins is greater than 1,000 individuals (Far Out Ocean Research Collective, unpublished data). Coastal populations are still exposed to a range of anthropogenic threats and in most cases remain dependent on conservation management measures.

2.2.2 Neutral status change

Moved into Threatened – Nationally Vulnerable

Pygmy blue whales (*Balaenoptera musculus brevicauda*) have moved from Data Deficient to Threatened – Nationally Vulnerable. There is a single abundance estimate available which is based on a small sample size of photo-identification data and has high uncertainty (Barlow et al. 2018). No estimate of the trend in abundance is available, though current estimates of 20th-century whaling activity suggest catch numbers were lower for whales in New Zealand and East Australian waters than other Southern Hemisphere populations of this sub-species (Branch et al. 2023). No estimates

of pre-whaling abundance are available, so it is unknown whether the lower catch numbers are indicative of less impact or simply a smaller overall population size. Taking a conservative approach and assuming the population has not yet fully recovered from whaling, pygmy blue whales have been assessed as Threatened – Nationally Vulnerable, rather than At Risk – Uncommon.

Moved into At Risk – Declining

Sperm whales (*Physeter macrocephalus*) have moved from Data Deficient to At Risk – Declining. No overall abundance estimate exists for this species in New Zealand waters even though they are widely distributed (e.g. Giorli and Goetz 2020; Palmer et al. 2022; Steidl 2024; Far Out Research Collective, unpublished data; New Zealand Cetacean Tissue Archive, unpublished data). A decline has been recorded in the summertime numbers of whales seen off Kaikōura since the active development of a long-term, photo-identification catalogue in 1991 (Somerford et al. 2022). Results suggest this decline in abundance is due to declines in recruitment to the population using the area. Sperm whales in Kaikōura waters represent only a small proportion of the total New Zealand population, so it is uncertain whether this local decline is indicative of a decline elsewhere. However, given that this is the only robust estimate of trend for any sperm whales in New Zealand and, taking a precautionary approach, it is considered the best available information and used as the default for sperm whale population trend in New Zealand. Stranding numbers around New Zealand seem to be consistent between years, and heterogeneity in the population indicates gene flow into the population (Palmer et al. 2022). The demography of stranded animals suggests some rebound since whaling consistent with global patterns (Whitehead and Shin 2022) but given the long generation time of this species it is considered unlikely to have fully recovered.

Moved into At Risk – Uncommon

Southern right whale dolphins (*Lissodelphis peronii*) have moved from Data Deficient to At Risk – Uncommon. Large pods of hundreds of animals have been sighted offshore in the past, but no data on abundance or trends in New Zealand waters are available. There are anecdotal reports of decreased sightings off Kaikōura. This species is not frequently sighted; therefore, the panel has designated them as At Risk – Uncommon.

Goose-beaked whales (*Ziphius cavirostris*) have moved from Data Deficient to At Risk – Uncommon. No estimates of abundance or trends exist for these whales in New Zealand waters. Most knowledge comes from stranded animals, found beachcast around all of mainland New Zealand and Rēkohu / Wharekauri / Chatham Island. No known substantial threats exist, so the population trend is considered likely to be stable. Genetic analysis has revealed no population structure for the species in New Zealand waters (Carroll et al. 2024). The panel considered it unlikely that there are more than 20,000 individuals in New Zealand waters, resulting in a status of At Risk – Uncommon.

Pygmy sperm whales (*Kogia breviceps*) have moved from Data Deficient to At Risk – Uncommon. No estimates of abundance or trends exist for these whales in New Zealand waters. Most knowledge comes from stranded animals, which occur frequently at 10+ animals per year. The panel considered it unlikely that there are more than 20,000 individuals in New Zealand waters, resulting in a status of At Risk – Uncommon.

Moved into Migrant

Antarctic minke whales (*Balaenoptera bonaerensis*), southern sei whales (*Balaenoptera borealis schlegelii*), Antarctic blue whales (*Balaenoptera musculus intermedia*), and southern fin whales (*Balaenoptera physalus quoyi*) have moved from Data Deficient to Non-resident Native – Migrant. Limited data are available about these species in New Zealand waters, but fin and Antarctic blue whales show temporal trends in sightings and acoustic detections (Constaratas et al. 2021; Warren et al. 2021; Barlow et al. 2023). There is no evidence of these species breeding in New Zealand, though it is considered possible some calving could occur.

Leopard seals (*Hydrurga leptonyx*) have moved from At Risk – Naturally Uncommon to Non-resident Native – Migrant. This change results from a re-evaluation against the updated NZTCS criteria for residency[1]. There is no evidence of successful breeding of these seals in New Zealand, nor is there a large proportion of the global population resident here, therefore, the species is not considered resident (van der Linde et al. 2022). The statuses available for non-resident species are Vagrant and Migrant, so the latter status was chosen based on evidence that more than 15 leopard seals visit New Zealand waters each year.

Type C orca/killer whales (*Orcinus orca*) have moved from Non-resident Native – Vagrant to Non-resident Native – Migrant. This change is based on evidence (photographic resighting of individuals and tracks from satellite tags; Eisert et al. 2015; Lauriano et al. 2020) demonstrating that this ecotype migrates from Antarctic waters into New Zealand waters and back again.

2.2.3 Worse status

Moved into Threatened – Nationally Endangered

New Zealand sea lions (*Phocarctos hookeri*) have moved from Threatened – Nationally Vulnerable to Threatened – Nationally Endangered. This is a result of changes in both the estimated number of mature individuals and the rate of decline.

Rate of decline: Roberts and Edwards (2023) calculated a rate of decline for the seven years from 2015 to 2022 of 4% which, when projected forward over three generations (approximately 30 years), provides an overall population decline of 69%. Using the full 29-year data set of annual pup production at the Auckland Islands/Motu Maha (the most robust long-term dataset and 68% of the breeding population of the species), an annual decline of 2.7% is estimated (Figure 1). This decline is estimated from pup production rather than the total number of mature individuals (as is used in the NZTCS) but is considered a useful proxy for total abundance (Hammond et al. 2021). This decline projected forward over three generations provides an overall population decline of 55%. Considering both these trend estimates, this puts the population decline in the category of 30–70% decline over three generations.

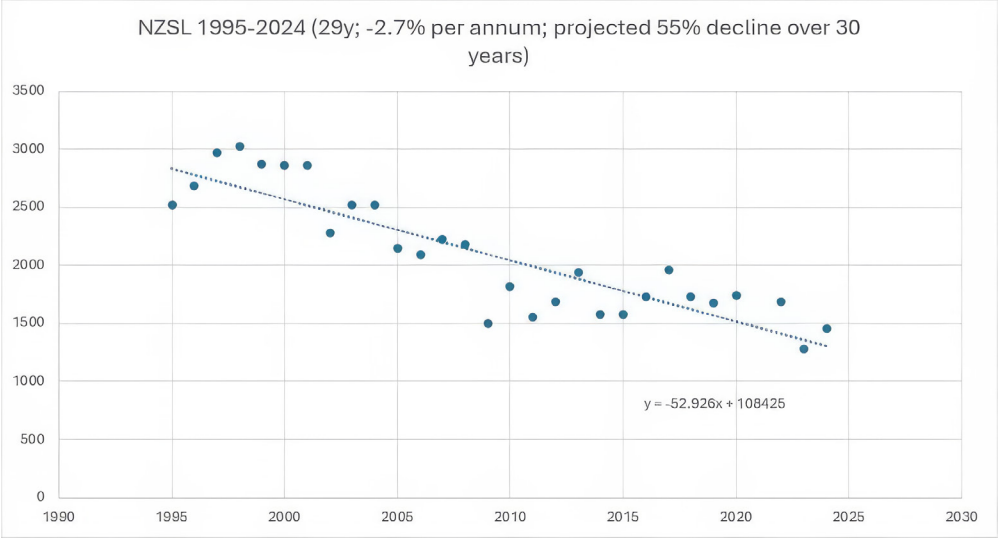

Figure 1. Trend in annual pup production estimates for the New Zealand sea lion population at the Auckland Islands from 1995 to 2024.

[1] Resident native taxa include those taxa that breed in New Zealand (regardless of whether they migrate to other countries during their non-breeding season), as well as migratory taxa that do not breed in New Zealand but for which more than 25% of the global population is resident in New Zealand for more than 50% of the life cycle.

Number of mature individuals: The definition of mature individuals under the NZTCS is the number of individuals capable of reproduction and excludes those whose reproductive capacity is suppressed in the wild through environmental, behavioural or other categories. In the case of populations with biased adult or breeding sex ratios, it is appropriate to use lower estimates for the number of mature individuals, which take this into account (i.e. the estimated effective population size).

Roberts and Edwards (2023) provide the most recent total population estimate for New Zealand sea lions. Their estimate uses pup counts for the most recent year available for each site, as well as site derived multipliers (see section 2.3 of Roberts and Edwards (2023) for details of this method) that enable an estimate of the non-pup portion of the population based on the number of pups born and other demographic variables. Non-pups are any animal greater than one year old. Roberts and Edwards (2023) also used a differential survival between males and females to estimate the population size, acknowledging that male population size is about 70% of the female population size. In addition, males become sexually mature later than females and do not sire pups until they're strong enough to hold their own territory in breeding areas, so only a small proportion of adult males successfully breed in any one year.

Using the pup counts available for 2024, or nearest estimates, we calculate approximately 4,158 non-pup females, and 2,578 non-pup males. This equates to approximately 6,735 non-pups in the population in 2024. This estimate will be a significant overestimate of the number of mature individuals in the population as it includes juvenile, sub-adult, and senescent stages of both males and females, and adult males excluded from breeding behaviourally.

Acknowledging that some non-pup females are not capable of reproduction (and therefore should not be considered as mature) and that only a small proportion of males are successfully breeding, we consider it likely that the actual number of mature individuals (using the NZTCS definition) is fewer than 5,000 animals. We consider this conservative approach in assessing the population size appropriate for a species facing significant anthropogenic threats.

A population decline of between 30–70% over three generations and fewer than 5,000 mature individuals moves the New Zealand sea lion into the Threatened – Nationally Endangered category. Given the considerable uncertainty in these estimates, it is strongly recommended that prior to the next threat classification review, data are collected to support updating future demographic models for New Zealand sea lions to include all breeding locations and estimates of the proportion of mature individuals in the population.

3. Conservation status of all known marine mammal taxa in Aotearoa New Zealand

Taxa are assessed according to the criteria of Rolfe et al. (2022), grouped by conservation status, then alphabetically by scientific name. 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. The Data Deficient list is inserted before the Threatened category. Although the true status of Data Deficient taxa will span the entire range of available categories, taxa are in that list mainly because they are very seldom seen, so most are likely to be threatened. The Data Deficient list is likely to include many of the most threatened species in New Zealand.

The full data for the assessments listed in Table 5 can be viewed and downloaded at https://nztcs.org.nz/reports/1165.

The definitions of criteria for assessments are summarised in Appendix 1. See Rolfe et al. (2022) for details (https://www.doc.govt.nz/globalassets/documents/science-and-technical/sap244.pdf).

Table 5. Conservation status of New Zealand marine mammals.

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, Inc = Increasing, NS = Natural State, OL = One Location, RR = Range Restricted, SO = Secure Overseas, S?O = Secure? Overseas, Sp = Biologically Sparse, TO = Threatened Overseas.

IUCN Red List categories are abbreviated as follows: CR = Critically Endangered, DD = Data Deficient, EN = Endangered, LC = Least Concern, NT = Near Threatened, VU = Vulnerable.

ASSESSMENT NAME AND AUTHORITY	PREFERRED COMMON NAME	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE	IUCN STATUS
DATA DEFICIENT (21)						
Taxonomically determinate (20)						
Berardius arnuxii Duvernoy, 1851	Arnoux's beaked whale	Ziphiidae		SO	No change	LC, ver 3.1, 2020
Caperea marginata (Gray, 1846)	pygmy right whale	Neobalaenidae		S?O	No change	LC, ver 3.1, 2018
Globicephala macrorhynchus Gray, 1846	short-finned pilot whale	Delphinidae		DPR, S?O	No change	LC, ver 3.1, 2018
Grampus griseus (G. Cuvier, 1812)	Risso's dolphin	Delphinidae		SO	No change	LC, ver 3.1, 2018
Hyperoodon planifrons Flower, 1882	southern bottlenose whale	Ziphiidae		SO	No change	LC, ver 3.1, 2018
Kogia sima (Owen, 1866)	dwarf sperm whale	Kogiidae		SO	No change	LC, ver 3.1, 2020
Lagenodelphis hosei Fraser, 1956	Fraser's dolphin	Delphinidae		SO	No change	LC, ver 3.1, 2018
Lagenorhynchus cruciger (Quoy & Gaimard, 1824)	hourglass dolphin	Delphinidae		SO	No change	LC, ver 3.1, 2018
Mesoplodon bowdoini Andrews, 1908	Andrews' beaked whale	Ziphiidae		S?O	No change	DD, ver 3.1, 2020
Mesoplodon densirostris (de Blainville in Desmarest, 1817)	dense-beaked whale	Ziphiidae		S?O	No change	LC, ver 3.1, 2020
Mesoplodon eueu Carroll et al., 2021	Ramari's beaked whale	Ziphiidae		S?O	No change	DD, ver 3.1, 2022
Mesoplodon ginkgodens Nishiwaki & Kamiya, 1958	ginkgo-toothed beaked whale	Ziphiidae		S?O	No change	DD, ver 3.1, 2020
Mesoplodon hectori (Gray, 1871)	Hector's beaked whale	Ziphiidae		S?O	No change	DD, ver 3.1, 2020
Mesoplodon layardii (Gray, 1865)	strap-toothed beaked whale	Ziphiidae		S?O	No change	LC, ver 3.1, 2020
Mesoplodon peruvianus Reyes, Mead & Van Waerebeek, 1991	pygmy beaked whale	Ziphiidae		S?O	No change	LC, ver 3.1, 2020
Mesoplodon traversii (Gray, 1874)	spade-toothed whale	Ziphiidae		S?O	No change	DD, ver 3.1, 2020
Phocoena dioptrica Lahille, 1912	spectacled porpoise	Phocoenidae		SO	No change	LC, ver 3.1, 2018
Stenella coeruleoalba (Meyen, 1833)	striped dolphin	Delphinidae		SO	No change	LC, ver 3.1, 2018
Steno bredanensis (G. Cuvier in Lesson, 1828)	rough-toothed dolphin	Delphinidae		SO	No change	LC, ver 3.1, 2018
Tasmacetus shepherdi Oliver, 1937	Shepherd's beaked whale	Ziphiidae		SO	No change	DD, ver 3.1, 2018
Taxonomically Unresolved (1)						
Balaenoptera acutorostrata "dwarf"	dwarf minke whale	Balaenopteridae		DPR, SO	No change	LC, ver 3.1, 2018 (common minke whale)

ASSESSMENT NAME AND AUTHORITY	PREFERRED COMMON NAME	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE	IUCN STATUS
THREATENED (9)						
NATIONALLY CRITICAL (4)						
Taxonomically Determinate (3)						
Balaenoptera edeni brydei Olsen, 1913	Bryde's whale	Balaenopteridae	NCu2a	CD, SO	No change	LC, ver 3.1, 2017
Cephalorhynchus hectori maui Baker, Smith & Pichler, 2002	Māui dolphin	Delphinidae	NCu5a	CD, CR, DPT, OL	No change	CR, A2cd+4cd; C2a(i,ii); D ver 3.1, 2023
Mirounga leonina (Linnaeus, 1758)	southern elephant seal	Phocidae	NCu3a	RR, S?O	No change	LC, ver 3.1, 2014
Taxonomically Unresolved (1)						
Orcinus aff. *orca*	Orca / killer whale	Delphinidae	NCu2a	CR, DPT, S?O	No change	DD, ver 3.1, 2017 (Orcinus orca)
NATIONALLY ENDANGERED (1)						
Taxonomically Determinate (1)						
Phocarctos hookeri (Gray, 1844)	New Zealand sea lion	Otariidae	NEu5c	CI, CD, PF, RR	Worse	EN, A4bd, ver 3.1, 2014
NATIONALLY VULNERABLE (3)						
Taxonomically Determinate (3)						
Balaenoptera musculus brevicauda Ischihara, 1966	pygmy blue whale	Balaenopteridae	NVu2c	DPS, DPT, S?O	Neutral	EN, A1abd, ver 3.1, 2018 (species level)
Cephalorhynchus hectori hectori (Van Bénéden, 1881)	Hector's dolphin	Delphinidae	NVu5d	Sp, CD, DPT, PF	No change	EN, A4d, ver 3.1, 2008
Tursiops truncatus (Montagu, 1821)	common bottlenose dolphin	Delphinidae	NVu3c	Sp, CD, CR, SO	Better	LC, ver 3.1, 2018 Fiordland: CR, A3bcd, C1, ver 3.1, 2010
NATIONALLY INCREASING (1)						
Taxonomically Determinate (1)						
Eubalaena australis (Desmoulins, 1822)	southern right whale	Balaenidae	NIu1c	CD, OL, RR, SO	No change	LC, ver 3.1, 2017
AT RISK (5)						
DECLINING (1)						
Taxonomically Determinate (1)						
Physeter macrocephalus Linnaeus, 1758	sperm whale	Physeteridae	DECu3d	DPS, DPT, TO	Neutral	VU, A1d, ver 3.1, 2008
UNCOMMON (4)						
Taxonomically Determinate (4)						
Kogia breviceps (Blainville, 1838)	pygmy sperm whale	Kogiidae	UNCn2d	SO	Neutral	LC, ver 3.1, 2019
Lissodelphis peronii (Lacépède,1804)	southern right-whale dolphin	Delphinidae	–	De, SO	Neutral	LC, ver 3.1, 2018
Pseudorca crassidens (Owen, 1846)	false killer whale	Delphinidae	UNCn2b	DPS, S?O	No change	NT, A2d, ver 3.1, 2018
Ziphius cavirostris G. Cuvier, 1823	goose-beaked whale	Ziphiidae	UNCn2d	DPS, DPT, SO	Neutral	LC, ver 3.1, 2018

ASSESSMENT NAME AND AUTHORITY	PREFERRED COMMON NAME	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE	IUCN STATUS
NOT THREATENED (5)						
Taxonomically Determinate (5)						
Arctocephalus forsteri (Lesson, 1828)	New Zealand fur seal	Otariidae	NTn2f	Inc, SO	No change	LC, ver 3.1, 2014
Delphinus delphis Linnaeus, 1758	common dolphin	Delphinidae	NTn2e	SO	No change	LC, ver 3.1, 2020
Globicephala melas edwardii (A. Smith, 1834)	southern long-finned pilot whale	Delphinidae	NTn2e	S?O	No change	LC, ver 3.1, 2018 (species level)
Lagenorhynchus obscurus unnamed subsp. Gray, 1828	dusky dolphin	Delphinidae	NTn2e	S?O	No change	LC, ver 3.1, 2018
Mesoplodon grayi von Haast, 1876	Gray's beaked whale	Ziphiidae	NTn2e	S?O	No change	LC, ver 3.1, 2020
NON-RESIDENT NATIVE (17)						
MIGRANT (7)						
Taxonomically Determinate (6)						
Balaenoptera bonaerensis Burmeister, 1867	Antarctic minke whale	Balaenopteridae		DPR, DPS, S?O	Neutral	NT, A2b, ver 3.1, 2018
Balaenoptera borealis schlegelii (Flower, 1865)	southern sei whale	Balaenopteridae		DPR, DPS, TO	Neutral	EN, A1abd, ver 3.1, 2018 (species level)
Balaenoptera musculus intermedia Burmeister, 1871	Antarctic blue whale	Balaenopteridae		TO	Neutral	CR, A1abd, ver 3.1, 2018
Balaenoptera physalus quoyi (Fischer, 1829)	southern fin whale	Balaenopteridae		TO	Neutral	VU, A1d, ver 3.1, 2018 (species level)
Hydrurga leptonyx (Blainville, 1820)	leopard seal	Phocidae		SO	Neutral	LC, ver 3.1, 2015
Megaptera novaeangliae australis (Lesson, 1828)	southern humpback whale	Balaenopteridae		SO	No change	LC, ver 3.1, 2018 (species level) EN, A1ad, ver 3.1, 2008 (Oceania sub-population)
Taxonomically Unresolved (1)						
Orcinus orca (Linnaeus, 1758) Type C	orca / killer whale	Delphinidae		DPS, S?O	Neutral	DD, ver 3.1, 2017 (species level)
VAGRANT (10)						
Taxonomically Determinate (8)						
Arctocephalus gazella (Peters, 1875)	Antarctic fur seal	Otariidae		SO	No change	LC, ver 3.1, 2014
Arctocephalus tropicalis (Gray, 1872)	subantarctic fur seal	Otariidae		SO	No change	LC, ver 3.1, 2014
Feresa attenuata Gray, 1874	pygmy killer whale	Delphinidae		S?O	No change	LC, ver 3.1, 2017
Leptonychotes weddellii (Lesson, 1826)	Weddell seal	Phocidae		SO	No change	LC, ver 3.1, 2014
Lobodon carcinophaga (Hombron & Jacquinot, 1842)	crabeater seal	Phocidae		SO	No change	LC, ver 3.1, 2014

ASSESSMENT NAME AND AUTHORITY	PREFERRED COMMON NAME	FAMILY	CRITERIA	QUALIFIERS	STATUS CHANGE	IUCN STATUS
Ommatophoca rossi Gray, 1844	Ross seal	Phocidae		SO	No change	LC, ver 3.1, 2014
Peponocephala electra (Gray, 1846)	melon-headed whale	Delphinidae		SO	No change	LC, ver 3.1, 2019
Stenella attenuata (Gray, 1846)	pantropical spotted dolphin	Delphinidae		SO	No change	LC, ver 3.1, 2018
Taxonomically Unresolved (2)						
Orcinus orca (Linnaeus, 1758) Type B	orca / killer whale	Delphinidae		S?O	No change	DD, ver 3.1, 2017 (species level)
Orcinus orca (Linnaeus, 1758) Type D	orca / killer whale	Delphinidae		S?O	No change	DD, ver 3.1, 2017 (species level)

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Appendix 1
NZTCS criteria and categories.

Full details of the criteria and categories included in Table 5 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

Mirounga leonina (Linnaeus, 1758) was assessed as Threatened – Nationally Critical in 2024, based on an unnatural population state, a decline of 10-30% over three generations and having a total population with less than 250 mature individuals. Thus, its assessment code is **NCu3a.**

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 km^2); 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 km^2); 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 km^2); 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 km^2); 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 km^2); 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 km^2); 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 km^2); 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 km^2); 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 km^2); 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 km^2)

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 km^2); 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 km^2); 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 km^2)
- 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 km^2)

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 km^2)
- 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 km^2)
- Naturally small population that is forecast to remain stable ± 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 ± 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 km^2)
- 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 km^2); or
  - The total population size is > 100,000 mature individuals and the area of occupancy is < 100,000 ha (1,000 km^2)

  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 km^2); or
  - Unnatural, stable: minimum 100 ha (1 km^2); or
  - Unnatural, increasing: minimum 1,000 ha (10 km^2)
- 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 km^2)

  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 ≥ 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 km^2); 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 ± 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 km^2)

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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