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Regional Threat Classification System of Aotearoa New Zealand, manual 2026

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Department of Conservation
Te Papa Atawhai

Te Kāwanatanga o Aotearoa
New Zealand Government

Cover: Tīeke | South Island Saddleback *(Philesturnus carunculatus)* in Dusky Sound; At Risk-Recovering nationally. *Photo: Jake Osborne, Department of Conservation.*

The New Zealand Threat Classification System website can be accessed at nztcs.org.nz. For all enquiries, email threatstatus@doc.govt.nz.

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Abstract

The Regional Threat Classification System (RTCS) provides a tool for assessing the extinction risk for taxa within Aotearoa New Zealand's sixteen geopolitical regions. It is an extension of the New Zealand Threat Classification System (NZTCS), using the same categories, status rankings and criteria, adjusted to account for smaller regional scales. The present manual provides guidelines on how to use the RTCS and outlines the processes by which candidate taxa and informal entities must be listed. This is the first version of the manual used for assigning a regional conservation status to taxa found in the wild in Aotearoa New Zealand. Taxa are assessed based on the estimated sizes of and forecasted changes to their populations. The use of a consistent regional system will refine our understanding of the status and trends affecting indigenous biodiversity in Aotearoa New Zealand.

Keywords: assessment criteria, regional conservation status, regionally endangered taxa, technical guide, rarity, regional councils, RTCS categories, unitary authority, threat classification system, regionally threatened taxa, threat listing process

1. Background

1.1 Introduction

The Regional Threat Classification System (RTCS) is designed for assessing the conservation status of organisms within Aotearoa New Zealand's sixteen geopolitical regions. It is an extension of the New Zealand Threat Classification System (NZTCS), using the same categories, status rankings and criteria, adjusted to account for smaller regional scales.

1.2 History of threat classification in Aotearoa New Zealand

International conservation threat lists (International Union for Conservation of Nature (IUCN) Red List of Threatened Species) were first published in 1994 to provide objectivity and transparency in assessing the global conservation status of species (IUCN Standards and Petitions Committee 2022). The Department of Conservation – Te Papa Atawhai (DOC) published Aotearoa New Zealand's first threat classification system in 2002 (Molloy et al. 2002), having previously used a system to rank species according to their priority for recovery action (Molloy and Davis 1992). The technical manual for the NZTCS was first published in 2008 (Townsend et al. 2008), following a review of the methodology used in Molloy et al. (2002). A subsequent review of the methodology was undertaken in 2019 and resulted in several changes to the 2008 manual. These changes included new qualifiers and a structural readjustment. A fully revised version of the manual has recently been completed (Rolfe et al. 2022). The NZTCS manual is reviewed on a 10-year cycle.

The approach to conservation status ranking in Aotearoa New Zealand differs from that of the IUCN Red List system to take into account the particular geographic and ecological circumstances of this country. The NZTCS is a more sensitive classification for taxa with naturally restricted distributions and small numbers resulting from this country's small size, islands and mountainous geography (Molloy et al. 2002). Conservation status assessments for multiple species groups have been published by DOC since 2002 (New Zealand Threat Classification System Lists: Conservation Publications (doc.govt.nz)). This information is used to inform the national prioritisation of conservation management actions, research and monitoring, and natural resource management decisions (Townsend et al. 2008).

1.3 Rationale for the development of regional conservation status assessments

DOC is the agency tasked with managing select indigenous species under the Wildlife Act 1953, Reserves Act 1977, Conservation Act 1987 and Native Plants Protection Act 1934, but regional and district councils have a statutory obligation to manage the habitats of threatened species under the Resource Management Act 1991. Note that the term 'regional council' will be considered to include unitary authorities in the context of this document. Having a good understanding of regional population sizes and knowledge of where declines are occurring is key to managing the habitats of threatened species and supporting their recovery. That knowledge is particularly important for informing assessments of environmental effects conducted through Resource Management Act consenting processes. The information can also feed into the prioritisation of conservation activities undertaken by regional and district councils, such as monitoring, pest animal and plant control, and restoration programmes. While the NZTCS is effective at the national level, it can overlook situations where taxa are under greater pressure locally. This information is essential to prioritise conservation actions at smaller scales, such as within regions or districts. To address these

needs, some regional councils have previously developed conservation status lists; however, these have used different systems and criteria. The use of a consistent regional system can contribute significantly to the understanding of the status and trends affecting indigenous biodiversity in Aotearoa New Zealand. Potential benefits from assessing threats to indigenous species at a regional scale as well as the national scale include:

- Improved knowledge of the status of species across the landscape,
- Direction for local government and community groups to prioritise conservation actions that complement and support DOC's work,
- An improved ability to protect species through regulatory processes, and
- Improved national conservation assessments of species through greater local input.

1.4 Process for developing regional conservation status assessments

The need for a consistent regional conservation threat status system provided the impetus for a workshop that was held in March 2014 and attended by representatives from DOC, Manaaki Whenua – Landcare Research, regional councils and a local territorial authority (Wellington City Council). Issues discussed included appropriate regional boundaries, the use of the NZTCS as a basis for regional assessments, and components of significance. It was decided that regional council boundaries would be used rather than those of districts, as the regional council areas were large enough to fit the purpose of such assessments (Nelson Region was an exception and so was combined with Tasman Region as they share a unitary plan), and funding for completing the assessments was more likely to be available at the regional level. The NZTCS was considered an appropriate system to use for the regional assessments, but it was noted that scaling would be needed to take into account the size of each region relative to the national extent. Other decisions made were that national conservation status should take precedence over regional status and that regional qualifiers such as type localities, national strongholds, regional endemism and geographical limits should be used in addition to the national qualifiers. The next steps involved trialling the regional conservation status listing process for birds and vascular plants in the Wellington Region, vascular plants in the Waikato Region and birds in the Hawke's Bay Region. Following those trials, the regional conservation listing process was revised and the design completed in 2016.

The information from the regional conservation status assessment trials were held in spreadsheets since 2015, but the first publication of a regional conservation status assessment (on lizards in the Wellington Region) was in 2020 (Crisp 2020a). Since that time, there have been a number of regional conservation status lists published, some of which have been revised following the publication of new national status assessments:

- Vascular plants, freshwater fish, reptiles, bats and birds in the Wellington Region (Crisp 2020b; Crisp et al. 2022, 2023a, b, c; Enright et al. 2025)
- Reptiles, amphibians, vascular plants, bats and fish in the Auckland Region (Melzer et al. 2022a, b; Woolly et al. 2023; Bloxham et al. 2024; Simpkins et al. 2025)
- Reptiles, bats, vascular plants, birds and amphibians in the Otago Region (Jarvie et al. 2023a, b; Jarvie 2024; Jarvie et al. 2024; Jarvie et al. 2025a, b).

Several regional councils are currently in the process of preparing regional conservation status assessments for various groups of taxa.

2. Assessment process

2.1 Dependency on the NZTCS list

As much as possible, the NZTCS assesses all known taxa that are found in the wild in Aotearoa New Zealand. This includes taxa that are described and named as well as taxa for which taxonomic definition remains to be confirmed (see taxonomic criteria in Townsend et al. (2008)). The NZTCS has been developed to apply equally to terrestrial, freshwater and marine biota. All regional species lists should be sourced from the NZTCS lists to ensure absolute scientific consistency in scientific nomenclature across regional and national assessments. Differences in nomenclature such as spelling of names and authorities can be problematic for data compilation and analysis. The NZTCS nomenclature is linked to the New Zealand Organisms Register (NZOR) database, which provides the mechanism to track synonymy.

The RTCS structure follows that of the NZTCS (Fig. 2.1); the main difference being the NZTCS category Extinct, which was renamed Regionally Extirpated in the RTCS. A taxon is assessed as Extinct in the context of the NZTCS when there is no doubt that the last individual has died in Aotearoa New Zealand. It could still exist elsewhere in the world. In contrast, a taxon is Regionally Extirpated when the last individual has died or disappeared within a region but still occurs elsewhere (i.e. in other parts of the country). All category names have been adjusted to reflect the regional extent of the assessment (e.g. the NZTCS category Declining becomes Regionally Declining in the RTCS).

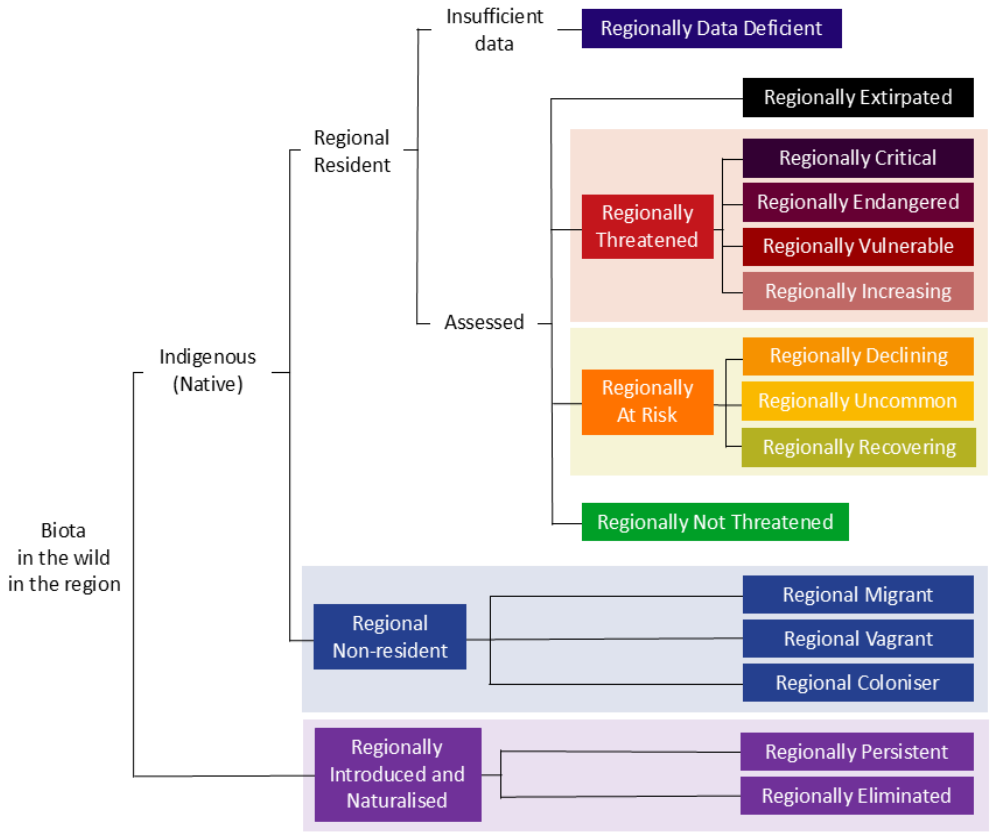

Figure 2.1. Regional Threat Classification System structure adapted from Rolfe et al. (2022).

2.2 Steps to classification of taxa

Steps to assess taxa in the region are shown in the flow diagram in Fig. 2.2 and are described below:

1. **Download the relevant group of taxa from the NZTCS database**

   On the NZTCS website (nztcs.org.nz), select Assessments from the menu on the left. In the Conservation Status Assessments – Search page, enter the relevant group (e.g. Reptiles) in the Report Name box to upload the latest report (e.g. Hitchmough et al. 2021). Click the green Export button on the right-hand side. When the data export is completed, click on the green Download button to access the Excel spreadsheet that contains the NZTCS assessment of each taxon in that group. Alternatively, all data can be downloaded through the Export All Data button in the Data Export section on the home page.

2. **Identify all taxa that are occurring or have occurred in the region**

   From the NZTCS list, identify all taxa that have been observed in the region or whose presence is unconfirmed. Assign taxa not in this category to Not Observed in Region.

   Identify all indigenous taxa that are absent from the region and for which there is evidence of former presence (e.g. fossil records of the taxa from the region). Assign these taxa to the category Regionally Extirpated. This category is assigned to taxa that exist in the wild within Aotearoa New Zealand but are no longer present in the wild in the region. Nationally Extinct taxa (as assessed in the NZTCS) are not included in regional assessments, though a region may wish to add those as an option to their report to highlight past loss (see section 5.4).

3. **Identify any taxa for which there is inadequate data to complete the assessment**

   As much as possible, assessors should assign each taxon to the appropriate regional conservation status based on all available data. It is possible to have taxa that are Regionally Data Deficient, but not nationally and vice versa (i.e. more is known regionally about a species than is the case for a national assessment). When there are insufficient data to make an assessment at the regional level, the taxon should be assessed as Regionally Data Deficient. All attempts should be made to assign a conservation status. Qualifiers can be used to indicate where data is poor for recognition (DPR), population size (DPS) or population trend (DPT).

4. **Identify all taxa that are non-indigenous to the region, but are found in the wild**

   Taxa that are *not* indigenous to the region, and that have become naturalised in the wild after being deliberately or accidently introduced into the region by human agency, are assigned to the category Regionally Introduced and Naturalised. This includes both taxa that are non-indigenous to Aotearoa New Zealand and indigenous taxa that are not native to the region. In the second case, the qualifier Introduced Native (IN) is to be used. Two new statuses have been established within this category in the NZTCS – Persistent for extant naturalised taxa and Eliminated for naturalised taxa that have been deliberately removed.

   When taxa that are indigenous to Aotearoa New Zealand have been introduced into the region for conservation purposes, but the region is outside their natural range, these taxa are assessed using the population criteria and identified as introduced to the region using the regional qualifier Conservation Introduction (CInt). For example, Newman's speckled skink (*Oligosoma newmani*) is nationally assessed as At Risk – Declining (Hitchmough et al. 2021). This species was not known to occur naturally in the Wellington Region and was translocated to Mana Island for conservation purposes – it meets the criteria to be assessed as At Risk – Regionally Declining and has the qualifier CInt. Two types of Conservation Introductions are recognised: a) Assisted migration is the intentional movement and release of an organism outside its indigenous range to avoid extinction of populations of the focal species, and b) Ecological replacement is the intentional movement and release of an organism outside its indigenous range to perform a specific ecological function.

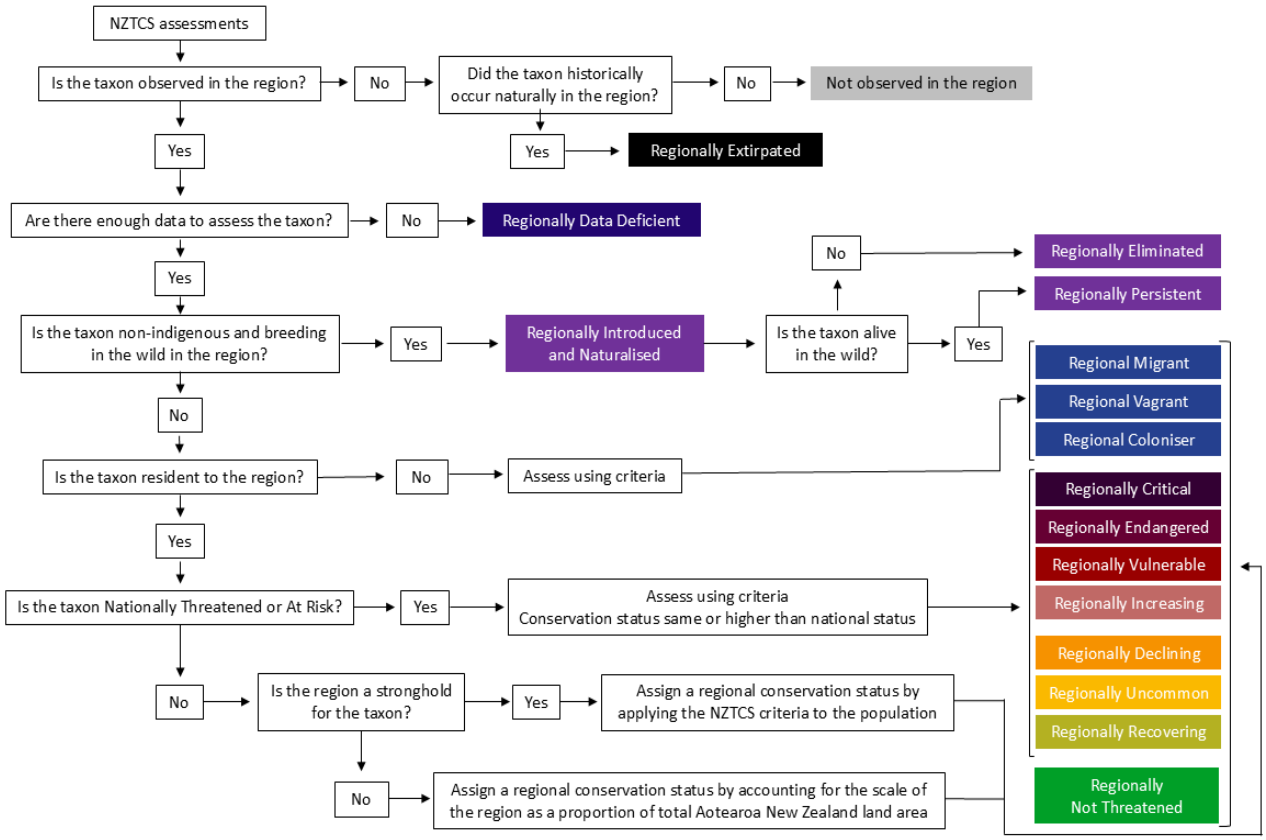

Figure 2.2. Flow chart for regionally assessing taxa that are found in the wild in Aotearoa New Zealand.

Regions may choose to add a separate list of native species that have been introduced for non-conservation reasons (e.g. plants that have naturalised in the region after being planted in gardens). 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. Some councils may wish to note new species incursions that have not naturalised in the region to date by discussing these incursions in the text and/or table of a regional report or maintaining a watchlist.

5. **Identify all nationally Non-resident native taxa found in the region**

   Identify all taxa that are assessed nationally as Non-resident natives and that are observed in the region. Non-resident natives are taxa whose natural presence is either discontinuous (Migrant) or temporary (Vagrant) or which have succeeded in recently (since 1950) establishing a breeding population (Coloniser). Assign these taxa to the appropriate Non-resident regional status – Regional Migrant, Regional Vagrant or Regional Coloniser. Regions should include a separate table in the report that highlights nationally Threatened or At Risk Non-resident taxa that are Regional Migrants. This is to ensure that there is an awareness of the importance of the regional habitat to the life cycle of those taxa. Note also that the National Policy Statement for Indigenous Biodiversity (MfE 2023) requires local authorities to gather and provide information regarding highly mobile fauna in their region.

6. **Identify all taxa assessed as nationally Threatened**

   Identify taxa that breed or are resident for more than half their life cycle in the region and assign a regional conservation status by applying the NZTCS criteria to the regional population.

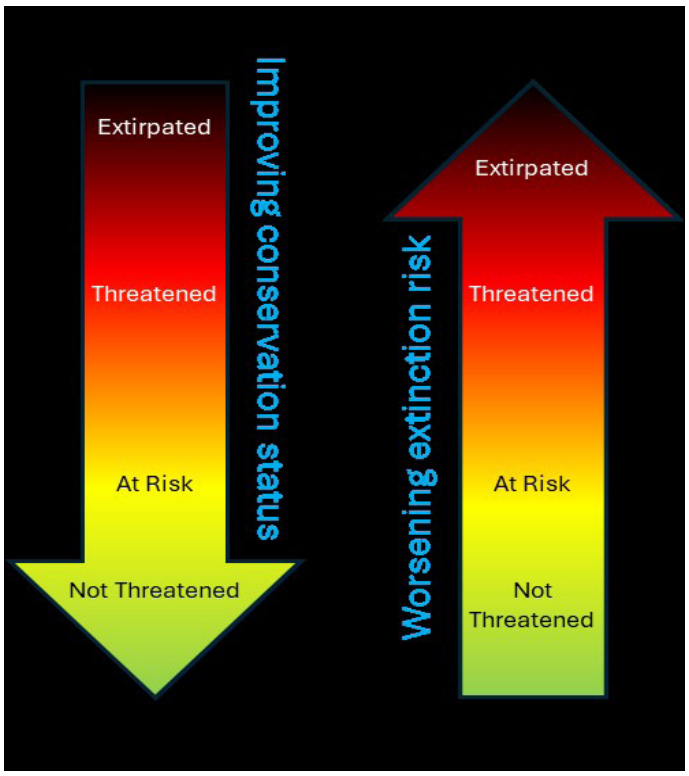

Figure 2.3: Relationship of conservation status to extinction risk.

Note: A taxon assessed nationally in the NZTCS category Threatened cannot be assigned a regional conservation status that is less threatened (Fig. 2.3) than its national status. It may, however, be assigned to a regional Non-resident native category (i.e. Migrant, Vagrant or Coloniser). For example, a Nationally Endangered taxon can be assessed as Regionally Critical (i.e. higher threat) or assigned to one of the Non-resident categories, but it cannot be assessed as Regionally Vulnerable, At Risk or Not Threatened (lower threat). The hierarchy within the Threatened category is Critical > Endangered > Vulnerable > Increasing in terms of threat of extinction.

The national scale (in terms of population size or area of occupancy) is used for nationally Threatened taxa because a subset of the population cannot be of lower conservation concern than the entire population. In rare cases, more information may become available in a region following the national conservation assessment. For example, the Burgan skink (*Oligosoma burganae*) was assessed as Threatened – Nationally Endangered in 2021 by Hitchmough et al. In 2023, Jarvie et al. assessed this species as Regionally Vulnerable in the Otago Region, because new populations were then discovered, extending the species' range (Wildlands Consultants 2022; Jarvie et al. 2023a). In such cases, the qualifier **Benchmarked Against National Status** (BNS) is used and a detailed explanation must be provided in the regional assessment report. The regional panel must report on the new data to the Chair of the national panel and to the NZTCS Administrator prior to the regional assessment being published.

Taxa that are nationally Threatened are assessed in one of the four conservation statuses: Nationally Critical, Nationally Endangered, Nationally Vulnerable or Nationally Increasing. The classification of a Threatened taxon as Regionally Critical, Regionally Endangered, Regionally Vulnerable or Regionally Increasing is completed using the population size (number of mature individuals or area of occupancy) as detailed in the NZTCS manual and amendment (Townsend et al. 2008; Michel 2021). Summary tables and descriptions of each category are provided in Section 3.1.

7. **Identify all taxa assessed as nationally At Risk**

   Taxa that are nationally At Risk are assessed in one of three conservation statuses: Declining, Recovering and Uncommon. The classification of an At Risk taxon as either Regionally Declining, Regionally Recovering or Regionally Uncommon is determined using criteria defined in the NZTCS manual (Rolfe et al. 2022). There is no hierarchy between statuses in the At Risk category. Each nationally At Risk taxon should be assessed using the tables in section 3.1, and considered using descriptions of each category as detailed in section 3. Nationally At Risk taxa may be determined to be regionally Threatened, regionally At Risk, or regionally Not Threatened.

   Assess whether the qualifier **National Stronghold** applies to each taxon. A region qualifies as a national stronghold for a taxon when more than 20% of the national population of this taxon is breeding or resident in the region for more than half the taxon's life cycle. There could be up to five regions classified as national strongholds in the country for each applicable taxon.

   Assess whether each of the national and regional qualifiers, listed in section 4, applies to each taxon. It is possible to have differences in national and regional qualifiers, but several such as SO – Secure Overseas will not change.

8. **Identify all regional endemic taxa**

   Regional endemic taxa (species that are known to breed only in the region) should have the same conservation statuses as those determined nationally.

9. **Assess all nationally Not Threatened taxa**

   Regional scaling thresholds may be applied at this step, so the matter of whether the region is a national stronghold must first be determined:

   Is the region a stronghold for the species (i.e. > 20% of the national population breeding or resident for more than half the taxon's life cycle there)?

   If YES, assign a regional conservation status by applying the NZTCS criteria, as defined in the NZTCS manual and amendment (Townsend et al. 2008; Michel 2021), to the regional population.

   If NO, assign a regional conservation status by accounting for the scale of the region as a proportion of total Aotearoa New Zealand land area (Table 2.1), as shown below.

Regional weightings

Regional scaling thresholds were calculated by measuring the size of each region as a percentage of the total Aotearoa New Zealand land area. The resultant scale was applied to the minimum threshold for nationally Not Threatened in the NZTCS. The calculated values were grouped into categories to simplify the assessment process. While it may be argued that categorisation could lead to rounding biases for regions close to the thresholds, experience from the NZTCS has shown that population size and trend estimates are approximate for all but the rarest and most intensively managed species. Therefore, the ideal of a precise scaling threshold is negated by the imprecision of the other values used to assess the conservation status. Using precise scaling thresholds would introduce complexity for no real benefit to the quality of the assessment.

Table 2.1. Regional scaling thresholds.

SCALING THRESHOLD	REGION
500 mature individuals / 300 ha	Chatham Islands
750 mature individuals / 2,000 ha	Auckland
1,000 mature individuals / 500 ha	Auckland, Northland, Bay of Plenty, Gisborne, Hawke's Bay, Taranaki, Wellington, Nelson/Tasman, Marlborough
2,000 mature individuals / 1,000 ha	Waikato, Manawatū-Whanganui, West Coast, Otago, Southland
3,000 mature individuals / 1,500 ha	Canterbury

Using the scaling thresholds above, does the region hold more than 500, 750, 1000, 2000 or 3000 mature individuals or does the taxon occupy more than 300, 2000, 5000, 10000 or 15000 ha (3, 20, 50, 100 or 150 km^2)?

If NO, assign a Regional Conservation Status by applying the NZTCS criteria to the regional population.

If YES, **is the population ± 10% stable or increasing?**

If YES, assign as Regionally Not Threatened, noting that both the population size *and* area of occupancy must be above the regional thresholds. Note also that this applies to Unnatural populations only. It is accepted that it is difficult to estimate both population size and area of occupancy for some species.

If NO, assign a regional conservation status by applying the NZTCS criteria to the regional population.

2.3 Population state, size and trend

The assessments of population state, size and trend are key to completing regional conservation status assessments. It is often possible to assess a taxon using more than one criterion of population size (e.g. number of mature individuals versus area of occupancy). The assessment should be based on criteria that assign the taxon to the higher (more threatened) status.

2.3.1 Population state

The population state assessment takes into account whether the population is 'Natural' or 'Unnatural'. A population is deemed to be 'Unnatural' if its current size or area of occupancy is smaller than it would have been in the absence of human-induced influences. If the population state is unknown, 'Unnatural' is to be used as a precautionary measure. The population state is provided by the national assessments, and regions can provide further distinctions within those designations. 'Natural' populations include taxa that have arrived in Aotearoa New Zealand relatively recently and are expanding in range (e.g. kōtuku ngutupapa / royal spoonbill (*Platalea regia*)).

2.3.2 Population size

Population size is estimated using either:

- The total number of mature individuals that contribute to the breeding population,
- The area of occupancy of the total population, or the total area of breeding habitat, or
- The total number of subpopulations *and* the number of mature individuals in the largest subpopulation.

Note that estimates of area of occupancy should be based on the smallest area that is essential at any stage in the life cycle of the taxon (e.g. the area of colonial nesting, rather than the area occupied during non-breeding times).

Note that the category Regionally Not Threatened is based on the number of individuals *and* the total area of occupancy.

The level of confidence by which population size is estimated is recorded as 'Low', 'Medium' or 'High', depending on the data and knowledge available to the expert panel (see section 5).

2.3.3 Population trend

Population trend is an estimate of the change in population size over the longest of 10 years or three generations, up to a maximum of 100 years. Generation time is often expressed as the average age of parents (usually breeding females) in the current cohort, and is provided for use in the regional

assessments by the national assessments (when known). The trend estimates take into account known historical changes in population size and existing ongoing pressures that are expected to affect the size of the population in the future. The level of confidence by which population trend is estimated is recorded as 'Low', 'Medium' or 'High', depending on data and knowledge available to the expert panel.

2.4 Regional reintroductions and other conservation translocations

Many regions have had taxa reintroduced (or introduced) into their areas. These can be taxa that have been indigenous to the region, or conservation introductions where species have been deliberately translocated to the region (but are outside their indigenous range) for conservation purposes (e.g. moved to predator-free islands where populations can be re-established in the absence of predator threats). Introductions of indigenous and regionally non-indigenous taxa can be classified in the appropriate threat category (Regionally Threatened, At Risk or Not Threatened), but different qualifiers are to be used. For introductions that are reintroductions, RN – Reintroduction is applied, while PR – Population Reinforcements is used where there have been reintroductions to bolster population numbers. For non-indigenous introductions, CInt – Conservation Introductions is to be used as the qualifier. This can cover both assisted migration and ecological replacements (see section 4.2).

Reintroductions or conservation introductions to the region can only be included in the conservation status assessments if the population is:

- Expanding or has reached a stable state through natural replenishment and at least half the breeding adults are products of the natural replenishment, and
- It has been at least 10 years since reintroduction.

Where these criteria are not met at the time of the assessment, taxa should be assessed as either Regionally Extirpated (taxa that were indigenous to the region) or absent (taxa are outside their indigenous range). A separate table should list these species for use by the regions, as some reintroductions / conservation introductions will ultimately result in a change of conservation status for these species. The reintroduction categories for different stages of population growth in introduced populations are summarised in section 5.4.

3. Categories and Criteria

3.1 Regional criteria and categories

The RTCS classifies organisms using a set of categories derived from the NZTCS as shown in Fig. 2.1. Three categories are used in the regional system only, Not Observed in Region, Regionally Introduced and Naturalised, and Regionally Extirpated (see Table 3.1). The NZTCS category Extinct is assigned to a taxon that is extinct nationally and the RTCS category Regionally Extirpated is assigned to a taxon that is extinct regionally because regionally extinct taxa could be reintroduced to the region.

All NZTCS criteria and definitions apply to the regional assessments when the region is the stronghold for the assessed taxon. Regional scaling thresholds are used when the region is *not* the national stronghold of the assessed taxon as explained in section 2.2. Criteria requirements for each category for taxa with Unnatural or Unknown population states are provided below in Tables 3.1, 3.2 and 3.3 and for taxa with Natural population states in Tables 3.4, 3.5 and 3.6. Population trend is

estimated from ongoing and forecasted changes in population size (number of mature individuals or area of occupancy / area of breeding habitat) over the longest of three generations or 10 years, up to a maximum of 100 years.

For NZTCS definitions and criteria, refer to Rolfe et al. (2022).

Table 3.1. Regional Status Categories

NATIONAL UMBRELLA CATEGORY	NATIONAL STATUS	REGIONAL STATUS
Extinct	Extinct	Regionally Extirpated Not Observed in Region
Data Deficient	Data Deficient	Regionally Data Deficient
Threatened	Nationally Critical	Regionally Critical
Threatened	Nationally Endangered	Regionally Endangered
Threatened	Nationally Vulnerable	Regionally Vulnerable
Threatened	Nationally Increasing	Regionally Increasing
At Risk	Declining	Regionally Declining
At Risk	Recovering	Regionally Recovering
At Risk	Uncommon	Regionally Uncommon
Non-resident Native	Migrant	Regional Migrant
Non-resident Native	Vagrant	Regional Vagrant
Non-resident Native	Coloniser	Regional Coloniser
Introduced and Naturalised	Introduced and Naturalised	Regionally Introduced and Naturalised
Not Threatened	Not Threatened	Regionally Not Threatened

The regional definitions and criteria at present are:

EXTINCT

The NZTCS category Extinct differs from the category Regionally Extirpated, as taxa assigned nationally as Extinct no longer exist in the wild within Aotearoa New Zealand, while those assigned as Regionally Extirpated are extinct in a particular region but are still present in other parts of the country. RTCS assessments can report on taxa that are nationally assessed as Extinct if there is evidence of their past presence in the region. These taxa should be detailed separately in the text and/or table to the taxa assessed as Regionally Extirpated. A full definition of the Extinct category can be found in Townsend et al. (2008).

REGIONALLY EXTIRPATED

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 indigenous range—that the last individual has died *in the region* (within the last 1,000 years). These taxa are surviving in Aotearoa New Zealand but have been lost from the region. This conservation category only applies where there is evidence that the taxa were formerly present in the region.

REGIONALLY DATA DEFICIENT

The same definition applies as for Nationally Data Deficient. As noted previously, it is possible to have taxa that are Regionally Data Deficient, but not nationally and vice versa (i.e. more is known regionally about a species than is the case for a national assessment). Expert panels should avoid listing taxa as Data Deficient whenever possible, making the best possible estimate of the likely status based on expert knowledge. Data qualifiers are available to indicate low confidence in the accuracy of assessments of taxon identity, population size and population trend (see section 4).

Table 3.1. Conservation statuses assigned to each combination of population size and trend for population states that are Unnatural or Unknown – size based on number of mature individuals.

Population size is estimated based on the number of mature individuals in the population (mature individuals = individuals at the age of breeding, see Glossary in section 8 for definition). Population trends are calculated over the longest of 10 years or three generations (up to 100 years) and are based on ongoing and predicted changes due to existing threats. Abbreviations: CRI = Regionally Threatened – Critical, DEC = Regionally At Risk – Declining, DECR = population trend – decreasing, END = Regionally Threatened – Endangered, INC = Regionally Threatened – Increasing, INCR = population trend – increasing, REC = Regionally At Risk – Recovering, NT = Regionally Not Threatened, UNC = Regionally At Risk – Uncommon, VUL = Regionally Threatened – Vulnerable. The letter 'K' represents thousands.

POPULATION		TOTAL NUMBER OF MATURE INDIVIDUALS							
		<250	250–1K	1K–5K	5K–20K	20K–100K	>100K	20K–100K	>100K
STATE	TREND							AREA <100K ha	
Unnatural/Unknown	INCR >10%	CRI	VUL	INC	REC	NT	NT	UNC	UNC
Unnatural/Unknown	STABLE (±10%)	CRI	END	VUL	UNC	NT	NT	UNC	UNC
Unnatural/Unknown	DECR 10–30%	CRI	END	VUL	DEC	DEC	DEC	DEC	DEC
Unnatural/Unknown	DECR 30–50%	CRI	END	VUL	VUL	DEC	DEC	DEC	DEC
Unnatural/Unknown	DECR 50–70%	CRI	CRI	END	VUL	VUL	DEC	VUL	DEC
Unnatural/Unknown	DECR >70%	CRI	CRI	CRI	CRI	CRI	CRI	CRI	CRI

Table 3.2. Conservation statuses assigned to each combination of population size and trend for population states that are Unnatural or Unknown – size based on total area of occupancy / area.

Population size is estimated based on the total area of occupancy / area of breeding habitat. Population trends are calculated over the longest of 10 years or three generations (up to 100 years) and are based on ongoing and predicted changes due to existing threats. Abbreviations: CRI = Regionally Threatened – Critical, DEC = Regionally At Risk – Declining, DECR = population trend – decreasing, END = Regionally Threatened – Endangered, INC = Regionally Threatened – Increasing, INCR = population trend – increasing, MATIND = number of mature individuals, REC = Regionally At Risk – Recovering, NT = Regionally Not Threatened, UNC = Regionally At Risk – Uncommon, VUL = Regionally Threatened – Vulnerable. An asterisk (*) indicates that for an increasing population, the status is either one of the threatened statuses or At Risk – Recovering, as based on the number of mature individuals (refer to Table 3.1 and definitions in section 3). The letter 'K' represents thousands.

POPULATION		AREA OF OCCUPANCY (ha)							
		<1	1–10	10–100	100–1K	1K–10K	10K–100K	>100K	>100K
STATE	TREND								MATIND <20K
Unnatural/Unknown	INCR >10%	CRI	VUL	INC	REC	UNC	UNC	NT	*
Unnatural/Unknown	STABLE (±10%)	CRI	END	VUL	UNC	UNC	UNC	NT	UNC
Unnatural/Unknown	DECR 10–30%	CRI	END	VUL	DEC	DEC	DEC	DEC	DEC
Unnatural/Unknown	DECR 30–50%	CRI	END	VUL	VUL	DEC	DEC	DEC	DEC
Unnatural/Unknown	DECR 50–70%	CRI	CRI	END	VUL	VUL	DEC	DEC	DEC
Unnatural/Unknown	DECR >70%	CRI	CRI	CRI	CRI	CRI	CRI	CRI	CRI

Table 3.3. Conservation statuses assigned to each combination of population size and trend for population states that are Unnatural or Unknown – size based on sub-populations and number of mature individuals in the largest sub-population.

Population size is estimated based on the total number of sub-populations (SUBPOP) in a population *and* the total number of mature individuals (MATIND) in the largest sub-population. Population trends are calculated over the longest of 10 years or three generations (up to 100 years) and are based on ongoing and predicted changes due to existing threats. Abbreviations: CRI = Regionally Threatened – Critical, DEC = Regionally At Risk – Declining, DECR = population trend – decreasing, END = Regionally Threatened – Endangered, INC = Regionally Threatened – Increasing, INCR = population trend – increasing, REC = Regionally At Risk – Recovering, UNC = Regionally At Risk – Uncommon, VUL = Regionally Threatened – Vulnerable. The letter 'K' in MATIND values represents thousands.

POPULATION		SUBPOP, MATIND			
NUMBER OF SUB-POPULATIONS		2	3–5	6–15	6–15
NUMBER OF MATURE INDIVIDUALS IN THE LARGEST SUB-POPULATION		200	≤300	≤500	500–1K
STATE	TREND				
Unnatural/Unknown	INCR >10%	CRI	VUL	INC	REC
Unnatural/Unknown	STABLE (±10%)	CRI	END	VUL	UNC
Unnatural/Unknown	DECR 10–30%	CRI	END	VUL	DEC
Unnatural/Unknown	DECR 30–50%	CRI	END	VUL	VUL
Unnatural/Unknown	DECR 50–70%	CRI	CRI	END	VUL
Unnatural/Unknown	DECR >70%	CRI	CRI	CRI	CRI

Table 3.4. Conservation statuses assigned to each combination of population size and trend for population states that are Natural – size based on number of mature individuals.

Population size is estimated based on the number of mature individuals in the population (mature individuals = individuals at the age of breeding, see Glossary in section 8 for definition). Population trends are calculated over the longest of 10 years or three generations (up to 100 years) and are based on ongoing and predicted changes due to existing threats. Abbreviations: CRI = Regionally Threatened – Critical, INCR = population trend – increasing, UNC = Regionally At Risk – Uncommon, NT = Regionally Not Threatened. The letter 'K' represents thousands.

		TOTAL NUMBER OF MATURE INDIVIDUALS							
POPULATION		<250	250–1K	1K–5K	5K–20K	20K–100K	>100K	20K–100K	>100K
STATE	TREND							AREA <100K	
Natural	INCR >10%	CRI	UNC	UNC	UNC	NT	NT	UNC	UNC
Natural	STABLE (±10%)	CRI	UNC	UNC	UNC	NT	NT	UNC	UNC

Table 3.5. Conservation statuses assigned to each combination of population size and trend for population states that are Natural – size based on total area of occupancy.

Population size is estimated based on the number of mature individuals in the population (mature individuals = individuals at the age of breeding, see Glossary in section 8 for definition). Population trends are calculated over the longest of 10 years or three generations (up to 100 years) and are based on ongoing and predicted changes due to existing threats. Abbreviations: CRI = Regionally Threatened – Critical, INCR = population trend – increasing, MATIND = number of mature individuals, NU = Regionally At Risk – Uncommon, NT = Regionally Not Threatened. The letter 'K' represents thousands.

		AREA OF OCCUPANCY (ha)							
POPULATION		<1	1–10	10–100	100–1K	1K–10K	10K–100K	>100K	>100K
STATE	TREND								MATIND <20K
Natural	INCR >10%	CRI	UNC	UNC	UNC	UNC	UNC	NT	UNC
Natural	STABLE (±10%)	CRI	UNC	UNC	UNC	UNC	UNC	NT	UNC

Table 3.6. Conservation statuses assigned to each combination of population size and trend for population states that are Natural – size based on sub-populations and number of mature individuals in the largest sub-population.

Population size is estimated based on the total number of sub-populations (SUBPOP) in a population and the total number of mature individuals (MATIND) in the largest sub-population. Population trends are calculated over the longest of 10 years or three generations (up to 100 years) and are based on ongoing and predicted changes due to existing threats. Abbreviations: CRI = Regionally Threatened – Critical, INCR = population trend – increasing, UNC = Regionally At Risk – Uncommon. The letter 'K' represents thousands.

POPULATION		SUBPOP, MATIND			
Number of sub-populations		2	3–5	6–15	6–15
Number of mature individuals in the largest sub-population		200	≤300	≤500	500–1K
STATE	TREND				
Natural	INCR >10%	CRI	UNC	UNC	UNC
Natural	STABLE (±10%)	CRI	UNC	UNC	UNC

REGIONALLY THREATENED

Regionally threatened taxa have small populations *in the region*, which makes them highly susceptible to stochastic (unpredictable) events, and/or have decline rates that mean the population(s) may be lost if the current trends are not arrested.

Regionally Critical

A taxon is classified as Regionally Critical when evidence indicates that the breeding population *in the region* fits one or more of the criteria below:

- **Very small population (population state natural, unnatural or unknown) 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 two sub-populations *and* fewer than 200 mature individuals in the larger sub-population

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

Regionally Endangered

A taxon is classified as Regionally Endangered when evidence indicates that the breeding population *in the region* fits the criteria below:

- **Small population (unnatural or unknown) that is forecast to be stable ± 10%**
  - The total population size is 250–1,000 mature individuals; or
- The total area of occupancy is 1–10 ha (0.1 km^2); or
  - There are 3–5 sub-populations *and* 200–300 mature individuals in the largest sub-population
- **Small population that is forecast to decline 10–50% over the longer of three generations or 10 years (maximum 100 years)**
  - The total population is 250–1,000 mature individuals; or
  - The total area of occupancy is 1–10 ha (0.1–1 km^2); or
  - There are 3–5 sub-populations *and* 200–300 mature individuals in the largest sub-population
- **Moderate population that is forecast to decline 50–70% over the longer of three generations or 10 years (maximum 100 years)**
  - The total population 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* 300–500 mature individuals in the largest sub-population

Regionally Vulnerable

A taxon is classified as Regionally Vulnerable when evidence indicates that the breeding population *in the region* fits the criteria below:

- **Small population (unnatural or unknown) that is forecast to increase by 10% or more over the longer of 10 years or three generations (maximum 100 years)**
  - The 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* 200–300 mature individuals in the largest sub-population
- **Moderate population (unnatural or unknown) that is forecast to remain stable ± 10% over the longer of the next 10 years or three generations (maximum 100 years)**
  - The population 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* 300–500 mature individuals in the largest sub-population

- **Moderate population that is forecast to decline 10–50% over the longer of three generations or 10 years (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 300–500 mature individuals in the largest sub-population
- **Moderate to large population that is forecast to decline 30–70% over the longer of three generations or 10 years (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 50–70% over the longer of three generations or 10 years (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)

Regionally Increasing

Note that nationally this category name replaces At Risk – Recovering (criterion A) of Townsend et al. (2008). A taxon is classified as Regionally Increasing when evidence indicates that the breeding population *in the region* fits the criteria below:

- **Small population that has experienced a previous decline (within the last 1,000 years) *and* is or is forecast to increase > 10% over the longest of three generations or 10 years (maximum 100 years)**
  - The total population size is 1,000–5,000 mature individuals; or
  - The total area of occupancy is 10–100 ha (1–10 km^2) *and* ongoing or predicted population increase > 10% over the longest of three generations or 10 years

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

REGIONALLY AT RISK

Taxa in the Regionally At Risk categories are declining *in the region* (but are buffered by a large total population size and/or a slow rate of decline), or are biologically scarce or recovering from a previously Threatened status.

Regionally Declining

A taxon is classified as Regionally Declining when evidence indicates that the breeding population *in the region* fits the criteria below:

- **Moderate to large population that is forecast to decline 10–30% over the longer of three generations or 10 years (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)

- **Large population that is forecast to decline 10–50% over the longer of three generations or 10 years (maximum 100 years)**
  - The total population 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 three generations or 10 years (maximum 100 years)**
  - The total population is > 100,000 mature individuals; or
  - The total area of occupancy is > 10,000 ha (100 km^2)

Regionally Recovering

A taxon is classified as Regionally Recovering when evidence indicates that the breeding population *in the region* fits the criteria below:

- **Moderate to large population that has (or may have) experienced a previous decline (within the last 1,000 years) and is forecast to increase > 10% over the longest of three generations or 10 years (maximum 100 years)**
  - The total population is 5,000–20,000 mature individuals; or
  - The total area of occupancy is 100–1,000 ha (1–10 km^2)

Note: Taxa that have an increasing trend after a previous decline but whose populations are smaller than the size criteria listed above should be classified in one of the Threatened categories. Taxa that have an increasing trend after a previous decline but whose populations are larger than the size criteria listed here should be classified as either At Risk – Uncommon or Not Threatened.

Regionally Uncommon

Taxa whose distribution *in the region* is confined to a specific geographical area or which occur within naturally small and widely scattered populations. The distribution may be natural or unnatural (as a result of human disturbance) and populations may be stable or increasing.

- **Naturally small population that is forecast to increase > 10% over the longer of three generations or 10 years (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 three generations or 10 years (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 be stable ± 10% over the longer of three generations or 10 years (maximum 100 years)**
  - The total population 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 population that is forecast to be stable ± 10% over the longer of three generations or 10 years (maximum 100 years)**
  - The population 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 *and* is forecast to increase > 10% or remain stable over the longer of three generations or 10 years (maximum 100 years)**

- The total population size is 20,000–100,000 mature individuals *and* the area of occupancy is less than 100,000 ha (1,000 km^2)
- The total population size is more than 100,000 mature individuals *and* the area of occupancy is less than 100,000 ha (1,000 km^2)

Note: Minimum occupancy limits apply. If the area of occupancy is lower than the minimum limits listed below, then the taxon should be classified as Threatened or At Risk – Recovering.

- Natural, stable or increasing: minimum 1 ha (0.01 km^2)
- Unnatural, stable: minimum 100 ha (1 km^2)
- 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 ± 10% over the longer of three generations or 10 years (maximum 100 years)**
  - The total population is more than 20,000 mature individuals *and* the area of occupancy is more than 100,000 ha (1,000 km^2)

Note: Minimum population size limits apply. If the population size is lower than the minimum limits listed below, then the taxon will be assessed as Threatened.

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

REGIONAL NON-RESIDENT NATIVE

Indigenous taxa that do not breed or are not resident *in the region* for more than half their life cycle are assessed as Regionally Non-Resident Native**.** These include taxa whose natural presence is either discontinuous (Regional Migrant) or temporary (Regional Vagrant), or that have succeeded in recently (since 1950) establishing a breeding population (Regional Coloniser).

Regional Non-resident Native taxa that are assessed nationally as Threatened or At Risk are assigned the national conservation status with the qualifiers **Benchmarked against National Status** (BNS) and one of the Regionally Non-resident Native qualifiers (Regional Migrant – MR, Regional Vagrant – RV or Regional Coloniser – RC) (see definitions for qualifiers in section 4 below).

For example, the kōtuku / white heron (*Ardea modesta*) in the Hawke's Bay Region should be assessed as Threatened – Regionally Critical with the qualifiers BNS and RM.

Regional Migrant

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

Regional Vagrant

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

Regional Coloniser

Taxa that otherwise trigger Threatened categories because of small population size but have arrived in the region without direct or indirect help from humans and have been successfully reproducing in the wild only since 1950.

REGIONALLY NOT THREATENED

A taxon is classified as Regionally Not Threatened when evidence indicates that it has a large population *in the region* that is stable ± 10% or increasing > 10% *and* it does not meet the definitions and criteria for any of the other categories. Such taxa must meet the following criteria:

- The total regional population is stable or increasing over the longest of three generations or 10 years ***and*** occupies more than 10% of its pre-human range ***and*** the population is greater than 20,000 mature individuals (or refer to regional scaling thresholds, Table 2.1) ***and*** the area of occupancy is greater than 100,000 hectares (or refer to regional scaling thresholds, Table 2.1). It is acknowledged that either the number of mature individuals or area of occupancy may not be known, but estimates can be qualified using the qualifier Data Poor Size (DPS).
- The regional population state is natural or unnatural (stabilised after historical decline).

REGIONALLY INTRODUCED AND NATURALISED

Taxa that are non-indigenous to both Aotearoa New Zealand and the region and 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.

4. Qualifiers

Qualifiers provide critical additional information about a taxon's listing, status and management. When a taxon is listed, all of the qualifiers that apply to it are recorded in alphabetical order as subscripts after the threat category. For regional assessments, both national and regional qualifiers are applied. It is possible to have differences in national and regional qualifiers, but several such as SO – Secure Overseas will not change.

4.1 National qualifiers

Detailed definitions of NZTCS qualifiers can be found in Rolfe et al. (2022). The complete list of NZTCS qualifiers is 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**
EW	**Extinct in the Wild**
IE	**Island Endemic**
Inc	**Increasing**
NS	**Natural State**
NO	**Naturalised Overseas**
OL	**One Location**
PD	**Partial Decline**

PE	Possibly Extinct
PF	Population Fragmentation
RF	Recruitment Failure
Rel	Relict
RR	Range Restricted
SO	Secure Overseas
S?O	Secure? Overseas
SO?	Secure Overseas?
Sp	Biologically Sparse
TO	Threatened Overseas
T?O	Threatened? Overseas
TO?	Threatened Overseas?

4.2 Regional qualifiers

Additional qualifiers were developed to provide context about the regional occurrences of taxa.

BNS Benchmarked Against National Status
The regional data for population size / area of occupancy and trend indicate that the taxon has a less threatened conservation status than its national status.

CInt Conservation Introduction
Establishment of a taxon for the purposes of conservation outside its recorded distribution but within an appropriate habitat and ecogeographical area. Two types of Conservation Introductions are recognised: a) Assisted migration is the intentional movement and release of an organism outside its indigenous range to avoid extinction of populations of the focal species, and b) Ecological replacement is the intentional movement and release of organism outside its indigenous range to perform a specific ecological function.

FR Former Resident
Breeding population (existed for more than 50 years) extirpated from the region but continues to arrive as a regional vagrant or migrant.

IN Introduced Native
The taxon was introduced to the region, though is not known to have previously occurred in it.

IR Indigenous Range Limit
The inferred range (extending in any direction) of the taxon in pre-human times meets its natural limit in the region. The range limit can be north/south and/or east/west, depending on the regional council boundaries.

NR Natural Range Limit
The known range (extending in any direction) of the taxon meets it natural limit in the region. The range limit can be north/south and/or east/west, depending on the regional council boundaries.

NStr National Stronghold
More than 20% of the national population breeds or is resident for more than half the taxon's life cycle in the region.

PR Population Reinforcement
Translocations from other regions have been carried out to boost the population numbers of the taxon.

RC Regional Coloniser
Taxa that have arrived in the region without human assistance and have been successfully breeding in the wild since 1950.

RE Regional Endemic

Taxa known to breed only in the region.

RM **Regional Migrant**
A minimum of 15 individuals of a New Zealand native taxon are known to visit the region as part of their normal life cycle, but do not breed in the region.

RN **Reintroduction**
Taxa that have been reintroduced to the region after having previously gone extinct there.

RR **Range Restricted**
To be Range Restricted, a taxon must be naturally confined to a specific substrate, habitat or geographical area less than the regional threshold areas detailed in Table 2.1 in section 2, e.g. 500 ha for the Wellington Region.

RV **Regional Vagrant**
Aotearoa New Zealand native taxa that have sporadic or transitory occurrences in the region with fewer than 15 individuals visiting per annum.

TL **Type Localities**
The type locality of the taxon is within the region. (Ignore if the taxon is or has ever been regionally extinct).

TLH **Holotype**
A holotype is the one specimen on which a species name is based.

TLI **Isotype**
An isotype is a duplicate specimen of the holotype.

TLL **Lectotype**
A lectotype is a specimen later selected to serve as the single type specimen for species originally described from a set of syntypes. In zoology, a lectotype is a kind of name-bearing type.

TLN **Neotype**
A neotype is a specimen later selected to serve as the single type specimen when an original holotype has been lost or destroyed or where the original author never cited a specimen.

TLS **Syntype**
A syntype is any one of two or more specimens that is listed in a species description where no holotype was designated.

5. Implementation of regional threat assessments

5.1 Roles and responsibilities

DOC administers the NZTCS, which includes the appointment of expert panels who conduct assessments. DOC also administers the maintenance and development of the NZTCS database (nztcs.org.nz) and publication of national assessment reports.

It is intended that regional councils, working with DOC, will take the lead in conducting regional assessments, but DOC may provide advice on relevant experts to be appointed to the regional expert panels. The formation and conduct of regional panels are modelled on the NZTCS. Anyone with relevant knowledge can participate in an expert panel, and people may be chosen to

contribute expertise on all species or a subset of them in a report. Membership in an expert panel is voluntary, although costs associated with participation may be reimbursed by the organisers of the assessment. Each RTCS administrator will provide a channel between the regional council, expert panel members, DOC and the NZTCS data. The administrators will also be responsible for: maintaining the NZTCS data in RTCS databases, establishing the regional expert panel, scheduling and arranging meetings, briefing expert panel members and ensuring that the RTCS criteria are applied consistently and without bias by each expert panel.

5.2 RTCS assessment process

Groups of taxa are assessed on an approximately five-year cycle nationally. Regional councils should aim to complete their reviews within the same timeframe. At present, the timing of regional assessments should follow the national assessment to ensure that the most up-to-date information is included. However, in future, the regional assessments could be completed ahead of the national conservation assessments for the data to be fed into the national conservation assessment decision-making. The steps required in the regional assessment process are:

- Expert panel establishment – agreements about participation, reimbursements established.
- Pre-meeting preparation – the RTCS administrators should prepare the draft spreadsheet and provide information about the assessment process to the expert panel at least one month prior to the assessment meeting to allow the panel members time to gather relevant data or information.
- Assessment meeting(s) – assessments of population state, size and trend for each regional taxon are made during the meeting(s), as well as assessments of the presence/absence of taxa in the region and the identification of Regional Non-residents. A consensus should be reached by the expert panel for these decisions and any points of contention (or highlighted need for data from a separate source) should be left until a later date to resolve. It is noted that it may take a number of days to complete these assessment meetings, depending on the number of taxa to consider. In the case of vascular plant species where the number of taxa is very large, it is considered worthwhile separating the taxa into different groups for assessment (e.g. ferns could be assessed separately). Ideally, the assessment groupings should be consistent with national assessments.
- Post-meeting analyses – any outstanding decisions can be made through online discussions, and the finalised spreadsheet circulated amongst expert panel members for comment.
- Assessment report – covered in section 5.4 below.

5.3 Data management

The national database infrastructure is administered by DOC in the NZTCS environment. It is envisaged that the RTCS database will be built within that infrastructure at some time in the future, but data that are collected by regions will not feed electronically into the NZTCS assessments. It is important that the region manages the regional data in a manner that is consistent with that of the DOC system. The downloaded national tables from nztcs.org.nz contain multiple columns of information, but the large size of these files means that it will be easier for regions to work with those columns of most relevance to the regional information. It is important that the 'Current Name and Authority' remains consistent with that listed in the national data, as this column is linked to the NZOR, which will provide the national source of updated species names.

The columns from the national datasheet to include in the regional spreadsheet are:

- Preferred Common Name
- Preferred Māori Name

- Current Name and Authority
- National Status
- Population State
- Time Span
- National Qualifiers
- Status Change

Additional columns required for the regional assessments are:

- Regional Status
- National Stronghold
- Regional Population Size (includes number of mature individuals, area of occupancy and sub-population options)
- Regional Size Confidence
- Regional Population Trend
- Regional Trend Confidence
- Regional Qualifiers (relevant national qualifiers should be included)
- Notes

In future, regions may wish to include a Regional Status Change column when a review of the taxa group is completed, though this information may also be provided in a separate table or text in the report.

The national spreadsheet for the particular taxa to be assessed does not provide information about whether or not those taxa are present in the region. Sources of spatial distribution datasets and how to request them are included in Appendix 1.

Gathering of narrative information from expert panel members about each taxon is very useful and should be included in a Notes column. Councils should provide a summary of this information in the report.

5.4 RTCS reports

RTCS assessment reports should contain summary statistics about the conservation status of taxa in the region, as well as a table that includes the columns:

- Common name
- Māori Name
- Name and Authority
- Regional Conservation Status
- National Conservation Status
- National Stronghold (Yes/No)
- Regional Population Size / Area Regional Confidence Population Size
- Regional Trend
- Regional Confidence Trend
- Regional Qualifiers and Notes
- Additional columns could include Regional Criteria and Taxonomic Family

Examples of tables used for RTCS assessment reports can be found in Woolly et al. (2023) and Simpkins et al. (2025). Regions may also wish to report on conservation status on the mainland in comparison with predator-free sanctuaries (e.g. Crisp et al. 2023a, c). Additionally, regions may wish to use the codes detailed in Rolfe et al. (2022) to describe the conservation status, population state, population trend and size.

Assessments are listed from the most threatened to the least, starting with the categories Regionally Extirpated and Regionally Data Deficient, followed by Regionally Threatened and At Risk

categories. Regional Non-resident Natives (with sub-groups Regional Migrant, Regional Vagrant and Regional Coloniser), and Regionally Introduced and Naturalised are listed last (see Fig. 2.1).

Reports should be published on the relevant regional council website or other openly accessible websites to ensure that the information is available to the public.

The report may also include the following information:

- *Translocations:* Translocations are used across Aotearoa New Zealand to improve conservation outcomes for a particular taxon or to return a species to a region where the taxon was extirpated. The contribution of translocations to the survival of a taxon is considered in RTCS and NZTCS assessments only when there is evidence that the translocated populations have successfully established. For a species to meet the criteria required for inclusion in the conservation status lists, the population must be expanding or in a stable state through natural replenishment, **and** at least half the breeding adults are products of the natural replenishment **and** it has been at least 10 years or three generations since reintroduction.

Taxa that have not yet established in the region are listed as Regionally Extirpated with the qualifier 'Extinct in the Wild'. Regions may wish to document the translocation status in the report (e.g. number of individuals and dates). They may also wish to provide the stage of population growth, based on those described in Miller et al. (2014):

  - Stage 1: survival of individuals
  - Stage 2: evidence of reproduction
  - Stage 3: population growth
  - Stage 4: viable population – the population is likely to have reached the criteria required to be assessed in the conservation status lists.

Translocations are also recorded during regional assessments using the following regional qualifiers:

  - Reintroduction (RN), when a taxon has been translocated within its indigenous range where it was previously extirpated.
  - Population Reinforcement (PR), when a taxon has been translocated within its indigenous range where it is still naturally present.
  - Conservation introductions (CInt), when a taxon has been translocated outside its indigenous range. These translocations can involve assisted migration (e.g. moving a highly threatened species to a predator-free island to maintain population viability) or introducing ecological replacements (e.g. replacing an extirpated taxon with one that may provide the same ecological function).

- *Mainland conservation status:* Some regions may wish to highlight the conservation status of a taxon on the mainland, as the number of mature individuals or trend information in 'sanctuaries', such as on islands or fenced sanctuaries, can mask the conservation status of the taxon on the wider mainland. The conservation status of a taxon's mainland population can be assessed by the expert panel and documented in the report. However, the taxon's regional conservation status must include all populations in the region.
- *Extinct species:* Regions are encouraged to report on taxa that are assessed nationally as Extinct and are known to have been present in the region, as it shows past lost.
- *Conservation recommendations*: Regions may also wish to include recommendations of conservation actions, such as management or monitoring priorities, making use of the expert knowledge of the panel. It is to be noted, however, that a conservation status assessment itself does not determine conservation priorities or actions, but only provides an unbiased assessment of risks faced by a taxon based on its population size and trend as observed in the region.

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7. References

Bloxham M, Woolly J, Dunn N, Chaffe A, Tutt C, Melzer S. 2024. Conservation status of freshwater fishes in Tāmaki Makaurau / Auckland. Auckland: Auckland Council. Auckland Council Technical Report TR2023/13. https://knowledgeauckland.org.nz/media/1lmfeidy/tr2023-13-conservation-status-of-freshwater-fishes-in-auckland.pdf

Crisp P. 2020a. Conservation status of lizard species in the Wellington region. Wellington: Greater Wellington Regional Council. Greater Wellington Regional Council Publication No. WRC/ESCI-G-20/2. https://www.gw.govt.nz/document/1112/conservation-status-of-indigenous-lizard-species-in-the-wellington-region/

Crisp P. 2020b. Conservation status of indigenous vascular plant species in the Wellington region. Wellington: Greater Wellington Regional Council. Greater Wellington Regional Council Publication No. GW/ESCI-G-20/20. https://www.gw.govt.nz/document/1132/conservation-status-of-indigenous-vascular-plant-species-in-the-wellington-region/

Crisp P, Perrie A, Morar A, Royal C. 2022. Conservation status of indigenous freshwater fish in the Wellington region. Wellington: Greater Wellington Regional Council. Greater Wellington Regional Council Publication No. GW/ESCI-T-22/02. https://www.gw.govt.nz/document/17043/conservation-status-of-indigenous-freshwater-fish-in-the-wellington-region/

Crisp P, Hitchmough R, Newman D, Adams L, Lennon O, Woolley C, Hulme-Moir A, Bell T, Herbert S, Spearpoint O, Nelson N. 2023a. Conservation status of reptile species in the Wellington region. Wellington: Greater Wellington Regional Council. Greater Wellington Regional Council Publication No. GW/ESCI-G-23/03. https://www.gw.govt.nz/document/20691/conservation-status-of-reptile-species-in-the-wellington-region/

Crisp P, O'Donnell C, Pryde M, Ryan J, Spearpoint O. 2023b. Conservation status of bat species in the Wellington region. Wellington: Greater Wellington Regional Council. Greater Wellington Regional Council Publication No. GW/ESCI-G-23/01. https://www.gw.govt.nz/document/20631/conservation-status-of-bat-species-in-the-wellington-region/

Crisp P, Robertson H, McArthur N, Cotter S. 2023c. Conservation status of bird species in the Wellington region. Wellington: Greater Wellington Regional Council. Greater Wellington Regional Council Publication No. GW/KI-G-23/21. https://www.gw.govt.nz/document/22266/conservation-status-of-birds-in-the-wellington-region-2023/

Enright P, Benbrook A, Crisp P, Dillon J, Park T, Perrie L, Rolfe J, Shepherd L, Smith R, Spearpoint O, Uys R, Ward M. 2025. Conservation status of indigenous vascular plants in the Wellington region. Wellington: Greater Wellington Regional Council. Publication No. GW/KI-T-25-31. https://www.gw.govt.nz/document/23939/conservation-status-of-indigenous-vascular-plants-in-the-wellington-region/

Hitchmough RA, Barr B, Knox C, Lettink M, Monks JM., Patterson GB, Reardon JT, van Winkel D, Rolfe J, Michel P. 2021. Conservation status of New Zealand reptiles, 2021. Wellington: Department of Conservation. New Zealand Threat Classification Series 35. https://www.gw.govt.nz/document/1112/conservation-status-of-indigenous-lizard-species-in-the-wellington-region/

IUCN Standards and Petitions Committee. 2022. Guidelines for Using the IUCN Red List Categories and Criteria. Version 15.1. Prepared by the Standards and Petitions Committee. https://www.iucnredlist.org/resources/redlistguidelines

Jarvie S. 2024. Regional conservation status of Otago's amphibians. Dunedin: Otago Regional Council. Otago Threat Classification Series 4. https://www.orc.govt.nz/media/mjxlljs1/conservation-status-of-otagos-amphibians-2024.pdf

Jarvie S, Knox C, Monks JM, Reardon J, Campbell C. 2023a. Regional conservation status of reptile species in Otago. Dunedin: Otago Regional Council. Otago Threat Classification Series 2023/1. https://ourarchive.otago.ac.nz/esploro/outputs/report/Regional-conservation-status-of-reptile-species/9926564682601891

Jarvie S, Davidson-Watts I, Dennis G, Gower C, Pryde M. 2023b. Regional conservation status of bat species in Otago. Dunedin: Otago Regional Council. Otago Threat Classification Series 2023/2. https://www.orc.govt.nz/media/15328/conservation-status-of-bat-species-in-otago.pdf

Jarvie S, Barkla J, Rance B, Rogers G, Ewans R, Thorsen M. 2024. Regional conservation status of indigenous vascular plants in Otago. Dunedin: Otago Regional Council. Otago Threat Classification Series 3. https://www.orc.govt.nz/media/vmupm045/conservation-status-of-indigenous-vascular-plant-species-in-otago-october-2025.pdf

Jarvie S, Knox C, Monks JM, Purdie S, Reardon J, Campbell C. 2025a. Regional conservation status of reptile species in Otago. Dunedin: Otago Regional Council. Otago Threat Classification Series, 2025/3. https://www.orc.govt.nz/media/wlhg04lm/conservation-status-of-reptiles-in-otago-2025.pdf

Jarvie S, McKinlay B, Palmer D, Rawlence NJ, Thomas O. 2025b. Regional conservation status of birds in Otago. Dunedin: Otago Regional Council. Otago Threat Classification Series, 2025/4. https://www.orc.govt.nz/media/zz5lxiki/regional-conservation-status-of-birds-in-otago-2025.pdf

Melzer S, Hitchmough R, van Winkel D, Wedding C, Chapman S, Rixon M. 2022a. Conservation status of reptile species in Tāmaki Makaurau / Auckland. Auckland: Auckland Council. Auckland Council Technical Report TR2022/3. https://knowledgeauckland.org.nz/media/2324/tr2022-03-conservation-status-reptile-species-auckland.pdf

Melzer S, Hitchmough R, van Winkel D, Wedding C, Chapman S, Rixon M, Moreno V, Germano J. 2022b. Conservation status of amphibian species in Tāmaki Makaurau / Auckland. Auckland: Auckland Council. Auckland Council Technical Report TR2022/4. https://knowledgeauckland.org.nz/media/2327/tr2022-04-conservation-status-amphibian-species-auckland.pdf

MfE (Ministry for the Environment). 2023. National Policy Statement for Indigenous Biodiversity 2023. Wellington: Ministry for the Environment. https://environment.govt.nz/acts-and-regulations/national-policy-statements/national-policy-statement-for-indigenous-biodiversity/

Michel P. 2021. Amendment to the New Zealand Threat Classification System manual 2008: revised categories 2021. Wellington: Department of Conservation. https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs-amendment-revised-categories-2021.pdf

Miller KA, Bell T, Germano JM. 2014. Understanding publication bias in reintroduction biology by assessing translocations of New Zealand's herpetofauna. Conservation Biology. 28(4):1045–1056. https://www.researchgate.net/publication/260606974_Understanding_Publication_Bias_in_Reintroduction_Biology_by_Assessing_Translocations_of_New_Zealand's_Herpetofauna

Molloy J, Bell B, Clout M, de Lange P, Gibbs G, Given D, Norton D, Smith N, Stephens T. 2002. Classifying species according to threat of extinction: A system for New Zealand. Wellington: Department of Conservation. Threatened Species Occasional Publication 22. https://www.doc.govt.nz/Documents/science-and-technical/TSOP22.pdf

Molloy J, Davis A. 1992. Setting priorities for the conservation of New Zealand's threatened plants and animals. Wellington: Department of Conservation (revised in 1994).

Redford KH, Amato G, Baillie J, Beldomenico P, Bennett EL, Clum N, Cook R, Fonseca G, Hedges S, Launay F, Lieberman S, Mace GM, Murayama A, Putnam A, Robinson JG, Rosenbaum H, Sanderson EW, Stuart SN, Thomas P and Thorbjarnarson J. 2011. What does it mean to successfully conserve a (vertebrate) species? BioScience. 61:39–48. https://doi.org/10.1525/bio.2011.61.1.9

Rolfe J, Hitchmough R, Mitchel P, Makan T, Cooper J, de Lange PJ, Townsend AJ, Miskelly CM, Molloy J. 2022. New Zealand Threat Classification System manual 2022. Part 1: Assessments. Wellington: Department of Conservation. https://www.doc.govt.nz/globalassets/documents/about-doc/oia/2023/december/new-zealand-threat-classification-part-1.pdf

Simpkins E, Woolly J, de Lange P, Kilgour C, Cameron E, Melzer S. 2025. Conservation status of vascular plant species in Tāmaki Makaurau / Auckland. Revised March 2025. Auckland: Auckland Council. Auckland Council technical report, TR2025/6. https://www.knowledgeauckland.org.nz/publications/conservation-status-of-vascular-plant-species-in-tamaki-makaurau-auckland-revised-march-2025-species-list/

Townsend AJ, de Lange PJ, Duffy CAJ, Miskelly CM, Molloy J, Norton DA. 2008. New Zealand Threat Classification System manual. Wellington: Department of Conservation. https://www.doc.govt.nz/globalassets/documents/science-and-technical/sap244.pdf

Wildlands Consultants. 2022. Monitoring of Burgan skinks at Deep Creek, Lammermoor Range. Wildland Consultants Ltd Contract Report No. 5961.

Woolly J, Paris B, Borkin K, Davidson-Watts I, Clarke D, Davies F, Burton C, Melzer S. 2023. Conservation status of bat species in Tāmaki Makaurau / Auckland. Auckland: Auckland Council. Auckland Council Technical Report TR2023/4. https://knowledgeauckland.org.nz/media/zmilqh2l/tr2024-05-conservation-status-of-birds-in-t%C4%81maki-makaurau-auckland.pdf

8. Glossary

Definitions of terms used to define categories and criteria are listed in Townsend et al. (2008). Some terms that have not been detailed in the text of this report are included here. Those derived from IUCN definitions are marked with an asterisk.

Area of occupancy* The area occupied by the taxon, taking into account the fact that a taxon may not occupy all areas throughout its range because of unsuitable habitat. The smallest area that is essential at any stage in the life cycle of the taxon will be used (e.g. colonial nesting sites).

Determinate taxa Taxa at the rank of species and below for which there is reasonable certainty that they are distinct and for which names have been validly published under the respective international codes of nomenclature.

Unresolved taxa Taxa at the rank of species or below whose taxonomic status is uncertain, requiring further investigation, or that are distinct entities whose taxonomic status has yet to be formally determined.

Mature individuals* Individuals that are capable of reproduction. The number of mature individuals is defined as the number of individuals that are known, estimated or inferred to be capable of reproduction. When estimating this quantity, the following points should be kept in mind:

- Where the population is characterised by natural fluctuations, the minimum number will be used
- This measure is intended to count individuals that are capable of reproduction and will therefore exclude those whose reproductive capacity is suppressed in the wild through environmental, behavioural or other factors
- 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 that take this into account (i.e. the estimated effective population size)
- Reproducing units within a clone will be counted as individuals, except where such units are unable to survive alone (e.g. corals)
- In the case of taxa that naturally lose all or a subset of mature individuals at some point in their life cycle, the estimate will be made at the time when mature individuals are available for breeding.

Natural Taxa with populations, sizes, distributions and abundances that are the result of natural characteristics peculiar to these taxa and not the result of direct or indirect human activity (the converse is 'Unnatural').

Sub-population Geographically or otherwise distinct groups in the population between which there is little exchange. Re-introduced wild populations must be self-sustaining before they are included as a sub-population. Populations held in captive institutions or grown in nurseries or gardens are not considered to be within the definition of sub-population, unless they are the only remaining individuals of the taxon.

Taxon (plural taxa) Any taxonomic entity that has been acknowledged by relevant experts (see definitions for determinate and indeterminate taxa). Note that 'taxa' or 'taxon' is used throughout the text to cover entities that are designated as species, as well as indeterminate taxa.

Wild Taxa occurring in an unconstrained state outside of cultivation or captivity and not requiring intensive management to persist as defined by Redford et al. (2011). Unconstrained sub-populations subject to conservation measures that are largely directed at mitigating human impacts are generally considered 'wild' (e.g. control measures against non-native competitors or predators,

including the establishment of exclusion fences, such as those used to keep out pest predators). Sub-populations dependent on direct intervention are not considered 'wild' if they would go extinct within 10 years without intensive management such as:

- Providing most of the food needs of most individuals in the sub-population,
- Regularly supplementing the population from captive stock to prevent imminent extinction (occasional supplementation to increase genetic variability is appropriate for 'wild' sub-populations),
- Breeding manipulations, such as cross-fostering and down-brooding (i.e. removing extra chicks from large broods and giving to foster parents), or
- Providing ongoing intensive veterinary care to most individuals.

Appendix 1

Data sources for conservation assessments

TAXA	NAME	WHERE TO ACCESS	DATA TYPE
Amphibians and reptiles	DOC BioWeb Herpetofauna Database	Send request to DOC	Occurrence records
Amphibians and reptiles	New Zealand Herpetological Society website	Homepage | NZHS (reptiles.org.nz)	Species descriptions and maps
Amphibians and reptiles	Atlas of the amphibians and reptiles of New Zealand	Atlas of the amphibians and reptiles of New Zealand: Atlas (doc.govt.nz)	Occurrence records
Amphibians and reptiles	Reptiles and Amphibians of New Zealand	Field guide	Species descriptions and maps
Amphibians and reptiles	A Naturalist's Guide to the Reptiles & Amphibians of New Zealand	Field guide	Species descriptions and maps
Reptiles	The Reptile Database	The Reptile Database	Type locality
Bats	DOC National Bat Database	Send request to DOC	Occurrence records
Birds	DOC National Bittern Database	Send request to DOC	Occurrence records
Birds	eBird New Zealand	New Zealand eBird data request	Occurrence records
Birds	New Zealand Birds Online	Home page | New Zealand Birds Online (nzbirdsonline.org.nz)	Species descriptions and checklist of birds, including information on type locality
Birds	Avibase	Avibase	Species lists and type locality
Birds	Checklist of the Birds of New Zealand	Checklist of the Birds of New Zealand	Species lists and type locality
Fish	NIWA Freshwater Fish Database	NZ Freshwater Fish Database | NIWA	Occurrence records
Fish	MPI Protected species bycatch in New Zealand fisheries	Send request to MPI	Occurrence records
Freshwater invertebrates	DOC New Zealand Trichoptera Database	Send request to DOC	Occurrence records
Freshwater invertebrates	DOC Threatened Stonefly Database	Send request to DOC	Occurrence records
Freshwater invertebrates	Cawthron Institute Freshwater Invertebrate Database	Send request to Cawthron	Occurrence records
Invertebrates	NIWA Invertebrate Type Collection	Send request to NIWA	Type locality
Marine invertebrates	NIWA Marine Invertebrate Collection	NIWA Invertebrate Collection – Ocean Biodiversity Information System (obis.org)	Occurrence records

Mammals	DOC Marine Mammal Database	Send request to DOC	Occurrence records
Plants	New Zealand Virtual Herbarium	New Zealand National Herbarium Network	Occurrence records
Plants	Australian Virtual Herbarium	The Australian Virtual Herbarium	Occurrence records
Plants	New Zealand Plant Conservation Network	New Zealand Plant Conservation Network (nzpcn.org.nz)	Species descriptions and plant lists
Plants	New Zealand National Vegetation Survey Databank	National Vegetation Survey Databank	Occurrence records
Plants	Flora of New Zealand Series	Flora of New Zealand	Species lists
Plants	Botanical Information and Ecology Network	BIEN	Occurrence records
Plants, fungi, arthropods, plant microorganisms	Systematics Collection Data (Allan Herbarium, International Collection of Microorganisms from Plants, National New Zealand Flax Collection, New Zealand Arthropod Collection, New Zealand Fungarium)	Systematics Collections Data	Type locality
Plants, fungi	Otago Herbarium Type Specimens	Otago Herbarium Type Specimens	Type locality
Plants, bacteria, fungi and land invertebrates	Biota of New Zealand (Manaaki Whenua – Landcare Research)	Biota of NZ (landcareresearch.co.nz)	Occurrence records
Various organisms	Global Biodiversity Information Facility (GBIF) databases	Dataset search (gbif.org)	Occurrence records and type locality
Various organisms	iNaturalist NZ	A Community for Naturalists – iNaturalist NZ	Occurrence records
Various organisms	Wilderlab eDNA Database	www.wilderlab.co.nz/explore	Occurrence records
Various organisms	Atlas of Living Australia	ALA	Occurrence records and type locality
Various organisms	Auckland Museum (Marine Collection, Herbarium, Entomology Collection, Land Vertebrates Collection, Marine Collection)	Collections Online	Type locality
Various organisms	Te Papa Tongarewa – Museum of New Zealand	Collections Online	Type locality
Various organisms	Protected Natural Area Programme reports	Send request to DOC	Species lists
Various organisms	Marine Biodiversity Information System (MBIS) Marine fauna and flora observations around New Zealand	MBIS	Occurrence records