# Regionally Endemic Species in Otago

Scott Jarvie

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Salt pan cress, *Lepidium kirkii* Petrie. A regionally endemic vascular plant only known to occur on patches of saline/sodic soils (sometimes referred to as salt pans) in the semi-arid region of Central Otago. Photograph by John Barkla on the covers.

Burgan skink, *Oligosoma burganae* Chapple et al. 2011. A regionally endemic skink species restricted to the Rock and Pillar and Lammermoor Ranges in Otago. Photograph by Carey Knox on the frontispiece.



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# Executive Summary

This report provides an overview of regionally endemic species in the Otago Region, meaning they are not found elsewhere on Earth. A total of 359 species were identified as regionally endemic to Otago, with the species group mainly focused on being those found in the terrestrial realm. This includes birds, bryophytes, reptiles, select invertebrate groups, vascular plants, although freshwater fish and some freshwater invertebrates are included. Of the species assessed, 194 had been assessed nationally for their threat status, with 169 (87 percent) having elevated extinction risk (Threatened, At Risk, or Data Deficient). Other species groups should have their regional endemics identified. The report will support the Otago Regional Council, our iwi partners, territorial authorities in the region, stakeholders, landowners, and community groups to provide an evidence base to inform biodiversity management across the region. This includes highlighting the biota (flora, fauna, and fungi) in Otago that are regionally endemic, including those that are at risk or threatened with extinction, which the Council has statutory obligations to protect.

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# Introduction

This report provides an overview of species that are regionally endemic to Otago, meaning they are found nowhere else on Earth. A summary is provided of the number of regionally endemic species for select taxonomic groups, including birds, bryophytes (mosses, hornworts and liverworts), select invertebrates groups, reptiles, and vascular plants. The report will support the Otago Regional Council, iwi partners, territorial authorities in the region, stakeholders, landowners, and community groups to provide an evidence base to inform biodiversity management across the region. This includes highlighting the flora, fauna, and fungi in Otago that are regionally endemic and at risk or threatened with extinction, which the Council has statutory obligations to protect.

# Background

An endemic species is a species (or taxon) whose geographic range or distribution is confined to a single given area. Although the species may inhabit a small area, such as a single lake, or its range may extend across an entire region, it is considered endemic if it not found natively anywhere else in the world. Endemic species are often found in isolated areas, such as on island or on a mountain within a mountain range, and they often have specialised adaptations that allow them to survive only in unique habitats. Such specialisations often make them susceptible to the effects of environmental disturbances.

Our indigenous biodiversity in Aotearoa New Zealand makes a significant contribution to overall global diversity, with an estimated 80,000 species of native animals, plants and fungi. Our high level of endemism among these native species and large proportion of threatened species makes Aotearoa New Zealand an internationally recognised world ‘hotspot’ for biodiversity (Myers et al. 2000). The high endemism is largely the result of our long isolation from other land masses and diverse geography and climate, allowing unique flora, fauna and fungi to develop. For example, Aotearoa New Zealand’s endemic species include all our native frogs and reptiles, more than 90% of our insects, approximately 80% of vascular plants and a quarter of bird species. At regional scales in Aotearoa New Zealand, an area that has long been recognised to have extraordinary regional endemism is Otago.

In Aotearoa New Zealand the Department of Conservation – Te Papa Atawhai manages indigenous species nationally under the Wildlife Act (1953), but regional and district councils have statutory obligations to maintain indigenous biodiversity under the Resource Management Act 1991 (RMA), including to manage the habitats of threatened species. This report provides a preliminary list of regionally endemic, largely terrestrial taxonomic species found in Otago.

# Methods

## *Data sources*

### *1. Compilation of information from regional conservation status sources*

To compile information on regionally endemic species in Otago, initially sources were:

A. Recently completed regional conservation status reports for six taxonomic groups (bats, 2023b; indigenous vascular plants, 2024a; birds, 2024b; reptiles, Jarvie et al. 2024c; mushroom fungi, i.e., selected species of non-lichenised agarics, boletes and russuloid fungi, Jarvie and Cooper 2024; amphibians, Jarvie 2024; see website link for more information: www.orc.govt.nz/environment/biodiversity/regional-threat-assessments/).
B. Recently completed compilations of species lists for two groups (lichen and non-lichenised fungi; fungi from 2005 report by Hitchmough et al., excluding those taxa included in the de Lange et al. 2018 report).
C. Recently completed spreadsheets for five groups (hornworts and liverworts, Pritchard 2025a; mosses, Pritchard 2025b; freshwater fish, Campbell 2025; marine mammals, Jarvie 2024b; parasitic mites and ticks, Jarvie 2024c; Onychophora, Jarvie 2024d; see pages of the following website link for more information: www.orc.govt.nz/environment/biodiversity/otago-species/).

### *2. Collation of information from the Global Biodiversity Information Facility*

The Global Biodiversity Information Facility (GBIF, www.gbif.org/) was used as a secondary source, because it captures data from many institutions with standardised terminology. GBIF has become the 'go-to' aggregator for such information and has directly enabled a steady increase in scientific publications[1] and a 1:12 societal benefit[2]. To get data not available on GBIF, contact was made with the curators of Tūhura Otago Museum (OMNZ), Canterbury Museum (CMNZ), the Te Papa – Museum of New Zealand (MONZ) and Lincoln University (LUNZ), as these collections either don't publish, or have limited records, on GBIF. Responses were received from every institution. A geographical filter was then applied using the GIS layer for the Otago Regional Council's administrative boundary (https://datafinder.stats.govt.nz/layer/120946-regional-council-2025/).

To validate the preliminary list the following was also completed:

A. Each species was checked to see if specimens were from outside Otago.
B. Online searches were conducted for any indication that the species was not only from Otago. The taxonomic name was used in the search, and any information returned was typically a text-based description (e.g., 'species x is often in the Waikato

[1] More than 10,000 scientific papers enabled by GBIF-mediated data
[2] Report reveals return on investments in GBIF

and Auckland regions ...'). Online sources included Wikipedia, Wikispecies, iNaturalist, specialist taxonomic portals (World Spider Catalogue (https://wsc.nmbe.ch/), Scalenet (García Morales et al. 2016), Thysanoptera Aotearoa (Thrips of New Zealand) [Mound et al. 2017]), and published literature.

## *3. Additional sources of information*

To ensure backward and forward compatibility with changes in taxonomic nomenclatures to future proof the compilation, the New Zealand Organisms Register (NZOR, www.nzor.org.nz) 'matching' function was used to match the names of type species and return an NZOR identification number. NZOR is an actively maintained compilation of all organism names relevant to Aotearoa New Zealand: indigenous, endemic or exotic species or species not present in Aotearoa New Zealand but of national interest to our conservation and biosecurity agencies. NZOR is digitally and automatically assembled on a regular basis from several taxonomic data providers. It provides a consensus opinion on the preferred name for an organism, any alternative scientific names (synonyms), common and Māori names, relevant literature, and the data provider's view on the documented presence/absence in New Zealand.

Next, the database of the New Zealand Threat Classification System (NZTCS, https://nztcs.org.nz/) was used to match the names of type species with their conservation status (if it had been assessed) by 'marrying' with the Species ID. For each taxonomic group, the latest threat assessment information is provided: i.e., indigenous vascular plants (de Lange et al. 2024), rhytididae (carnivorous snails; Walker et al. 2024), bats (O'Donnell et al. 2023), mushroom fungi (selected species of Agaricales, Boletales, Russulales; Cooper et al. 2022), Orthoptera (wēta, crickets and grasshoppers; Trewick et al. 2022), parasitic mites and ticks (Acari; Heath et al. 2022), birds (Robertson et al. 2021), reptiles (Hitchmough et al. 2021), spiders (Sirvid et al. 2021), leaf-veined slugs and amber snails (Barker et al. 2021), pūpūharakeke/flax snails (Walker et al. 2021), hornworts and liverworts (de Lange et al. 2020), marine macroalgae (Nelson et al. 2019), marine mammals (Baker et al. 2019), amphibians (Burns et al. 2018), chimaeras, sharks and rays (Duffy et al. 2018), freshwater fishes (Dunn et al 2018), lichens (de Lange et al. 2018), Onychophora (Trewick et al. 2018), hymenoptera (Ward et al. 2017), lepidoptera (Hoare et al. 2017), mosses (Rolfe et al. 2016), stick insects (Buckley et al. 2016), earthworms (Buckley et al. 2015), fleas (Heath et al. 2015), aphids (Stringer et al. 2012), coleoptera (Leschen et al. 2012), diptera (Andrew et al. 2012), hemiptera (Stringer et al. 2012), small or less well-known terrestrial invertebrates (Buckley et al. 2012), nematodes (Yeates et al. 2012), micro-snails (Mahlfeld et al. 2012), and fungi excluding selected species of Agaricales, Boletales and Russulales (Hitchmough et al. 2007; other taxa were re-assessed by Cooper et al. 2022).

# Results

A total of 359 species are recorded as endemic to or occurring only in Otago (Table 1). The most speciose group was invertebrates with 301 taxa, followed by indigenous vascular plants with 40 taxa, freshwater fish with nine taxa, reptiles with six taxa, bryophytes (mosses and liverworts) with two taxa, and birds with one taxon.

***Table 1. The number of species that are endemic to Otago from different functional groups with different orders (listed initially by functional groups then the order with the most species)***

| Functional group | Order name | Common name | Number of species |
|---|---|---|---|
| Invertebrates (n = 301) | | | |
| | Araneae | Spiders | 73 |
| | Diptera | Flies | 64 |
| | Coleoptera | Beetles | 45 |
| | Lepidoptera | Moths | 32 |
| | Sarcoptiformes | Mites (feather, skin) | 20 |
| | Hymenoptera | Wasps, bees, ants | 17 |
| | Hemiptera | True bugs | 15 |
| | Plecoptera | Stoneflies | 8 |
| | Trichoptera | Caddisflies | 6 |
| | Orthoptera | Weta, grasshoppers | 5 |
| | Opilliones | Harvestmen | 5 |
| | Trombidiformes | Chiggers (mites) | 5 |
| | Entomobryomorpha | Springtails | 1 |
| | Diplostracha | Water fleas | 1 |
| | Dorylaimida | Roundworms (dorylaims) | 1 |
| | Isopoda | Crustaceans (pill bugs, woodlice, slaters, or sowbugs) | 1 |
| | Pseudoscorpiones | False scorpions | 1 |
| | Stylommatophora | Land snail, slugs | 1 |
| Vascular plants (n = 40) | | | |
| | Asterales | Daisies, sunflowers | 11 |
| | Boraginales | Borages, for-me-nots | 7 |
| | Poales | Grasses | 7 |
| | Capparales | Brassicales – mustard, capers | 3 |
| | Araliales | Ivy family | 2 |
| | Rosales | Roses | 2 |
| | Thymelaeales | Daphne | 2 |
| | Apiales | Umbellifers (celery, carrot or parsley) | 1 |
| | Caryophyllales | Inks, carnations | 1 |
| | Fabales | Legumes, peas, beans | 1 |
| | Oxalidales | Wood sorrel | 1 |
| | Ranunculales | Buttercups | 1 |
| | Violales | Violets | 1 |
| Freshwater fishes (n = 9) | | | |
| | Galaxiiformes | Galaxiids | 8 |
| Reptiles (n = 6) | | | |
| | Squamata | Lizards and snakes* | 6 |
| Bryophytes (n = 2) | | | |
| | Bartramiales | Mosses | 1 |
| | Jungermanniales | Liverworts | 1 |
| Birds (n = 1) | | | |
| | Suliformes | Gannets, cormorants, and allies | 1 |

*Note that terrestrial snakes are not resident indigenous species in Aotearoa New Zealand

Of the regional endemics, 194 taxa had their conservation status assessed nationally in the NZTCS (Table 2). This means only ~54 percent of regionally endemic taxa in the Region had been assessed nationally. Conservation statuses for these species from the NZTCS are as follows: 47 taxa in the Threatened category (Nationally Critical = 25; Nationally Endangered = 15; Nationally Vulnerable = 6; Nationally Increasing = 1), 55 taxa

in the At Risk category (Declining = 2; Naturally Uncommon = 51; Relict = 2) and 25 taxa in the Not Threatened category. Sixty-seven taxa were assessed as Data Deficient, meaning there was insufficient data to assign a conservation status, while 165 taxa have not been assessed yet.

***Table 2. Number of regionally endemic species in Otago assessed in the New Zealand Threat Classification System (NZTCS), with their threat category and status.***

| NZTCS threat category | NZTCS threat status | Taxon count |
|---|---|---|
| Threatened (n = 47) | | |
| | Nationally Critical | 25 |
| | Nationally Endangered | 15 |
| | Nationally Vulnerable | 6 |
| | Nationally Increasing | 1 |
| | | |
| At Risk (n = 55) | | |
| | Declining | 2 |
| | Naturally Uncommon | 51 |
| | Relict | 2 |
| | | |
| Not Threatened (n = 25) | Not Threatened | 25 |
| | | |
| Data Deficient (n = 67) | Data Deficient | 67 |
| | | |
| Total | | 194 |

In the Otago region the invertebrate species had the most regional endemics (Table 3). Of these, the orders with more than ten regional endemic taxa are Araneae, Diptera, Coleoptera, Lepidoptera, Sarcoptiformes, Hymenoptera and Hemiptera. Whereas the following taxonomic groups have eight taxa or less in their orders: Plecoptera, Orthoptera, Trombidiformes, Trichoptera, Opiliones, Dorylaimida, Entomobryomorpha, Isopoda, Pseudoscorpiones and Stylommatophora.

Many regionally endemic invertebrates have not had their conservation status assessed nationally (Table 3; 159 out of 301 or ~53 percent). Of the taxa that have a national conservation status, 18 were Threatened (Nationally Critical = 11; Nationally Endangered = 5; Nationally Vulnerable = 3), 37 were At Risk (Naturally Uncommon = 35; Relict = 2), 23 were Not Threatened, and 64 were Data Deficient.

**Table 3. Regionally endemic invertebrate species in Otago. The New Zealand Threat Classification System (NZTCS) categories and statuses are provided. The NZTCS reports are Andrew et al. 2012, Grainger et al. 2018, Hoare et al. 2017, Leschen et al. 2012, Marlfeld et al. 2012, Sirvid et al. 2021, Stringer et al. 2012, Trewick et al. 2022, Ward et al. 2016, and Yeates et al. 2012.**

| Name | Order | Family | NZTCS Category | NZTCS Status | Report Name |
|---|---|---|---|---|---|
| *Alistra centralis* | Araneae | Hahniidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Akatorea otagoensis* | Araneae | Desidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Amaurobioides maritima* | Araneae | Anyphaenidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Anoteropsis flavescens* | Araneae | Lycosidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Anoteropsis urquharti* | Araneae | Lycosidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Aorangia poppelwelli* | Araneae | Stiphidiidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Ascuta leith* | Araneae | Orsolobidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Cambridgea arboricola* | Araneae | Desidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Cambridgea secunda* | Araneae | Desidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria aperta* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria apica* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria assimilis* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria catlinensis* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria depressa* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria dunedinensis* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria kakanuiensis* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria lomasi* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria maxima* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria napua* | Araneae | Idiopidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria pilama* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria toddae* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cantuaria vellosa* | Araneae | Idiopidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Cycloctenus fugax* | Araneae | Cycloctenidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Dunedinia pullata* | Araneae | Linyphiidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Dunstanoides kochi* | Araneae | Desidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Duripelta otara* | Araneae | Orsolobidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Gasparia montana* | Araneae | Desidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Gasparia nava* | Araneae | Desidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Gohia parisolata* | Araneae | Desidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Goyenia multidentata* | Araneae | Desidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |

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*Endemic invertebrates*

| Name | Order | Family | NZTCS Category | NZTCS Status | Report Name |
|---|---|---|---|---|---|
| *Haplinis dunstani* | Araneae | Linyphiidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Haplinis marplesi* | Araneae | Linyphiidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Hapona otagoa* | Araneae | Desidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Hexathele waipa* | Araneae | Hexathelidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Huttonia palpimanoides* | Araneae | Huttoniidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Laestrygones otagoensis* | Araneae | Desidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Lamina minor* | Araneae | Toxopidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Makora mimica* | Araneae | Desidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Mamoea rufa* | Araneae | Desidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Mangareia maculata* | Araneae | Desidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Maniho centralis* | Araneae | Desidae | Threatened | Nationally Endangered | Spiders 2020 (Sirvid et al. 2021) |
| *Meringa leith* | Araneae | Physoglenidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Meringa otago* | Araneae | Physoglenidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Migas linburnensis* | Araneae | Migidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Migas lomasi* | Araneae | Migidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Migas taierii* | Araneae | Migidae | Threatened | Nationally Endangered | Spiders 2020 (Sirvid et al. 2021) |
| *Migas toddae* | Araneae | Migidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Neoramia alta* | Araneae | Stiphidiidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Neoramia matua* | Araneae | Stiphidiidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Neoramia nana* | Araneae | Stiphidiidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Neoramia otagoa* | Araneae | Stiphidiidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Otagoa wiltoni* | Araneae | Desidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Oramia littoralis* | Araneae | Agelenidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Pakeha protecta* | Araneae | Cycloctenidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Pakeha subtecta* | Araneae | Cycloctenidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Panoa tapanuiensis* | Araneae | Desidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Parafroneta monticola* | Araneae | Linyphiidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Paravoca otagoensis* | Araneae | Cycloctenidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Protoerigone otagoa* | Araneae | Linyphiidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Rayforstia antipoda* | Araneae | Anapidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Rinawa otagoensis* | Araneae | Hahniidae | Not Threatened | Not Threatened | Spiders 2020 (Sirvid et al. 2021) |
| *Subantarctia centralis* | Araneae | Orsolobidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Subantarctia trina* | Araneae | Orsolobidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |

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*Endemic invertebrates*

| Name | Order | Family | NZTCS Category | NZTCS Status | Report Name |
|---|---|---|---|---|---|
| *Tangata otago* | Araneae | Orsolobidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Tangata tautuku* | Araneae | Orsolobidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Tautukua isolata* | Araneae | Orsolobidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Viridictyna kikkawai* | Araneae | Dictynidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Waiporia hawea* | Araneae | Orsolobidae | At Risk | Relict | Spiders 2020 (Sirvid et al. 2021) |
| *Waiporia wiltoni* | Araneae | Orsolobidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Wiltonia graminicola* | Araneae | Orsolobidae | At Risk | Naturally Uncommon | Spiders 2020 (Sirvid et al. 2021) |
| *Wiltonia porina* | Araneae | Orsolobidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Zealoctenus cardronaensis* | Araneae | Miturgidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Zealanapis otago* | Araneae | Anapidae | Data Deficient | Data Deficient | Spiders 2020 (Sirvid et al. 2021) |
| *Asilis annulicornis* | Coleoptera | Cantharidae | | | |
| *Catoptes robustus* | Coleoptera | Curculionidae | | | |
| *Chalcolampra apicula* | Coleoptera | Chrysomelidae | | | |
| *Chalepistes curvus* | Coleoptera | Curculionidae | | | |
| *Chalepistes dugdalei* | Coleoptera | Curculionidae | | | |
| *Chalepistes patricki* | Coleoptera | Curculionidae | | | |
| *Duvaliomimus taieriensis* | Coleoptera | Carabidae | At Risk | Naturally Uncommon | Coleoptera 2010 (Leschen et al. 2012) |
| *Eugnomus alternans* | Coleoptera | Curculionidae | | | |
| *Inophloeus inuus* | Coleoptera | Curculionidae | | | |
| *Inophloeus praelatus* | Coleoptera | Curculionidae | | | |
| *Irenimus minimus* | Coleoptera | Curculionidae | | | |
| *Lithocia stictica* | Coleoptera | Curculionidae | | | |
| *Lyperobius cupiendus* | Coleoptera | Curculionidae | | | |
| *Maoritrechus nunni* | Coleoptera | Carabidae | At Risk | Naturally Uncommon | Coleoptera 2010 (Leschen et al. 2012) |
| *Mecodema laeviceps* | Coleoptera | Carabidae | Threatened | Nationally Critical | Coleoptera 2010 (Leschen et al. 2012) |
| *Mecyclothorax otagoensis* | Coleoptera | Carabidae | | | |
| *Megadromus fultoni* | Coleoptera | Carabidae | At Risk | Naturally Uncommon | Coleoptera 2010 (Leschen et al. 2012) |
| *Megadromus* sp. 8 "Omeo Hut" | Coleoptera | Carabidae | Threatened | Nationally Critical | Coleoptera 2010 (Leschen et al. 2012) |
| *Metacorneolabium zanotium* | Coleoptera | Staphylinidae | | | |
| *Mimopeus lewisianus* | Coleoptera | Tenebrionidae | | | |
| *Mimopeus rugosus* | Coleoptera | Tenebrionidae | At Risk | Naturally Uncommon | Coleoptera 2010 (Leschen et al. 2012) |
| *Nicaeana fraudator* | Coleoptera | Curculionidae | | | |
| *Oopterus monticola* | Coleoptera | Carabidae | | | |
| *Orchymontia otagensis* | Coleoptera | Hydraenidae | Data Deficient | Data Deficient | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Pedalopia novaezelandiae* | Coleoptera | Carabidae | | | |
| *Pentarthrum fultoni* | Coleoptera | Curculionidae | | | |
| *Pentarthrum subsericatum* | Coleoptera | Curculionidae | | | |
| *Prodontria capito* | Coleoptera | Scarabaeidae | | | |
| *Prodontria jenniferae* | Coleoptera | Scarabaeidae | At Risk | Naturally Uncommon | Coleoptera 2010 (Leschen et al. 2012) |
| *Prodontria lewisii* | Coleoptera | Scarabaeidae | Threatened | Nationally Endangered | Coleoptera 2010 (Leschen et al. 2012) |

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*Endemic invertebrates*

| Name | Order | Family | NZTCS Category | NZTCS Status | Report Name |
|---|---|---|---|---|---|
| *Prodontria modesta* | Coleoptera | Scarabaeidae | At Risk | Naturally Uncommon | Coleoptera 2010 (Leschen et al. 2012) |
| *Prodontria montis* | Coleoptera | Scarabaeidae | | | |
| *Prodontria patricki* | Coleoptera | Scarabaeidae | Data Deficient | Data Deficient | Coleoptera 2010 (Leschen et al. 2012) |
| *Prodontria pinguis* | Coleoptera | Scarabaeidae | At Risk | Naturally Uncommon | Coleoptera 2010 (Leschen et al. 2012) |
| *Prodontria regalis* | Coleoptera | Scarabaeidae | At Risk | Naturally Uncommon | Coleoptera 2010 (Leschen et al. 2012) |
| *Rygmodus opimus* | Coleoptera | Hydrophilidae | | | |
| *Sciacharis tautukuensis* | Coleoptera | Staphylinidae | | | |
| *Scopodes basalis* | Coleoptera | Carabidae | | | |
| *Syrphetodes cirrhopogon* | Coleoptera | Ulodidae | | | |
| *Taenarthrus capito* | Coleoptera | Carabidae | | | |
| *Trichopsida popei* | Coleoptera | Carabidae | | | |
| *Trichopsida propinqua* | Coleoptera | Carabidae | | | |
| *Waitatia bellicosa* | Coleoptera | Staphylinidae | | | |
| *Zeadelium senile* | Coleoptera | Tenebrionidae | At Risk | Naturally Uncommon | Coleoptera 2010 (Leschen et al. 2012) |
| *Zeolymma brachypterum* | Coleoptera | Staphylinidae | | | |
| *Eulimnadia marplesi* | Diplostracha | Limnadiidae | Threatened | Nationally Critical | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Amphineurus operculatus* | Diptera | Limoniidae | | | |
| *Amphineurus perarmatus* | Diptera | Limoniidae | | | |
| *Amphineurus senex* | Diptera | Limoniidae | | | |
| *Anabarhynchus castaneus* | Diptera | Therevidae | | | |
| *Anabarhynchus fuscofemoratus* | Diptera | Therevidae | Data Deficient | Data Deficient | Diptera 2010 (Andrew et al. 2012) |
| *Anabarhynchus indistinctus* | Diptera | Therevidae | Data Deficient | Data Deficient | Diptera 2010 (Andrew et al. 2012) |
| *Anabarhynchus spiniger* | Diptera | Therevidae | | | |
| *Anabarhynchus triangularis* | Diptera | Therevidae | At Risk | Naturally Uncommon | Diptera 2010 (Andrew et al. 2012) |
| *Anabarhynchus tricoloratus* | Diptera | Therevidae | | | |
| *Anabarhynchus wisei* | Diptera | Therevidae | Data Deficient | Data Deficient | Diptera 2010 (Andrew et al. 2012) |
| *Ceratomerus earlyi* | Diptera | Therevidae | | | |
| *Culiseta novaezealandiae* | Diptera | Culicidae | | | |
| *Dicranomyia acanthophallus* | Diptera | Limoniidae | | | |
| *Dicranomyia allani* | Diptera | Limoniidae | | | |
| *Dicranomyia circularis* | Diptera | Limoniidae | | | |
| *Dicranomyia huttoni* | Diptera | Limoniidae | | | |
| *Dicranomyia megastigmosa* | Diptera | Limoniidae | | | |
| *Dicranomyia otagensis* | Diptera | Limoniidae | | | |
| *Dicranomyia primaeva* | Diptera | Limoniidae | | | |
| *Discobola haetara* | Diptera | Limoniidae | Data Deficient | Data Deficient | Diptera 2010 (Andrew et al. 2012) |
| *Dolichopeza howesi* | Diptera | Tipulidae | | | |
| *Gonomyia oliveri* | Diptera | Limoniidae | | | |
| *Gynoplistia aculeata* | Diptera | Limoniidae | | | |
| *Gynoplistia aurantiopyga* | Diptera | Limoniidae | | | |

*Continued next page*

*Endemic invertebrates*

| Name | Order | Family | NZTCS Category | NZTCS Status | Report Name |
|---|---|---|---|---|---|
| *Gynoplistia hirsuticauda* | Diptera | Limoniidae | | | |
| *Gynoplistia laticosta* | Diptera | Limoniidae | | | |
| *Heteria flavibasis* | Diptera | Tachinidae | | | |
| *Hilara anisonychia* | Diptera | Empididae | | | |
| *Hilara philpotti* | Diptera | Empididae | | | |
| *Hilara vector* | Diptera | Empididae | | | |
| *Hilarempis kaiteriensis* | Diptera | Empididae | | | |
| *Libnotes falcata* | Diptera | Limoniidae | | | |
| *Limnophila oliveri* | Diptera | Limoniidae | | | |
| *Liriomyza vicina* | Diptera | Agromyzidae | Data Deficient | Data Deficient | Diptera 2010 (Andrew et al. 2012) |
| *Metalimnophila penicillata* | Diptera | Limoniidae | | | |
| *Metalimnophila simplicis* | Diptera | Limoniidae | | | |
| *Molophilus analis* | Diptera | Limoniidae | | | |
| *Molophilus pictipleura* | Diptera | Limoniidae | | | |
| *Neolimnia ura* | Diptera | Sciomyzidae | At Risk | Naturally Uncommon | Diptera 2010 (Andrew et al. 2012) |
| *Neolimnia vittata* | Diptera | Sciomyzidae | | | |
| *Nothodixa otagensis* | Diptera | Dixidae | | | |
| *Oropezella nigra* | Diptera | Hybotidae | Data Deficient | Data Deficient | Diptera 2010 (Andrew et al. 2012) |
| *Pales exitiosa* | Diptera | Tachinidae | | | |
| *Paracladura lyrifera* | Diptera | Trichoceridae | | | |
| *Parahyadina angusta* | Diptera | Ephydridae | | | |
| *Parentia defecta* | Diptera | Dolichopodidae | Data Deficient | Data Deficient | Diptera 2010 (Andrew et al. 2012) |
| *Pericoma barbata* | Diptera | Psychodidae | | | |
| *Pollenia hispida* | Diptera | Polleniidae | | | |
| *Pollenia immanis* | Diptera | Polleniidae | | | |
| *Pollenia uniseta* | Diptera | Polleniidae | | | |
| *Pseudolycoriella hauta* | Diptera | Sciaridae | | | |
| *Pseudolycoriella plicitegmenta* | Diptera | Sciaridae | | | |
| *Pseudolycoriella porehu* | Diptera | Sciaridae | | | |
| *Psychoda pulchrima* | Diptera | Psychodidae | | | |
| *Psychoda tridens* | Diptera | Psychodidae | | | |
| *Rhabdomastix neozelandiae* | Diptera | Limoniidae | | | |
| *Scatella subvittata* | Diptera | Ephydridae | | | |
| *Spilogona argentifrons* | Diptera | Muscidae | | | |
| *Spilogona dolosa* | Diptera | Muscidae | | | |
| *Tasiocera bituberculata* | Diptera | Limoniidae | | | |
| *Tephritis marginata* | Diptera | Tephritidae | | | |
| *Thinempis otakouensis* | Diptera | Empididae | | | |
| *Tricimba dugdalei* | Diptera | Chloropidae | At Risk | Naturally Uncommon | Diptera 2010 (Andrew et al. 2012) |
| *Zelandomyia otagensis* | Diptera | Limoniidae | | | |
| *Longidorus waikouaitii* | Dorylaimida | Longidoridae | Threatened | Nationally Critical | Nematodes 2010 (Yeates et al. 2012) |
| *Entomobrya promontorium* | Entomobryomorpha | Entomobryidae | | | |
| *Aneurus brevipennis* | Hemiptera | Aradidae | | | |
| *Anzygina barrattae* | Hemiptera | Cicadellidae | Data Deficient | Data Deficient | Hemiptera 2010 (Stringer et al. 2012) |
| *Chinamiris zygotus* | Hemiptera | Miridae | At Risk | Naturally Uncommon | Hemiptera 2010 (Stringer et al. 2012) |
| *Eriococcus argentifagi* | Hemiptera | Eriococcidae | | | |
| *Eriococcus crenilobatus* | Hemiptera | Eriococcidae | | | |
| *Eriococcus latilobatus* | Hemiptera | Eriococcidae | | | |

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*Endemic invertebrates*

| Name | Order | Family | NZTCS Category | NZTCS Status | Report Name |
|---|---|---|---|---|---|
| *Forsterocoris salmoni* | Hemiptera | Rhyparochromidae | Data Deficient | Data Deficient | Hemiptera 2010 (Stringer et al. 2012) |
| *Hypsithocus hudsonae* | Hemiptera | Pentatomidae | At Risk | Naturally Uncommon | Hemiptera 2010 (Stringer et al. 2012) |
| *Kiwisaldula laelaps* | Hemiptera | Saldidae | Threatened | Nationally Endangered | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Kiwisaldula yangae* | Hemiptera | Saldidae | | | |
| *Montanococcus thriaticus* | Hemiptera | Eriococcidae | | | |
| *Paradorydium sertum* | Hemiptera | Cicadellidae | | | |
| *Romna oculata* | Hemiptera | Miridae | Not Threatened | Not Threatened | Hemiptera 2010 (Stringer et al. 2012) |
| *Trioza gourlayi* | Hemiptera | Triozidae | | | |
| *Ventrispina dugdalei* | Hemiptera | Pseudococcidae | | | |
| *Adelencyrtoides tridens* | Hymenoptera | Encyrtidae | Data Deficient | Data Deficient | Hymenoptera 2014 (Ward et al. 2017) |
| *Amblyaspis breviscutellaris* | Hymenoptera | Platygastridae | Data Deficient | Data Deficient | Hymenoptera 2014 (Ward et al. 2017) |
| *Ceratanaphes monticola* | Hymenoptera | Mymaridae | | | |
| *Chorebus paranigricapitis* | Hymenoptera | Braconidae | Data Deficient | Data Deficient | Hymenoptera 2014 (Ward et al. 2017) |
| *Leptacis arcuata* | Hymenoptera | Platygastridae | Data Deficient | Data Deficient | Hymenoptera 2014 (Ward et al. 2017) |
| *Leptacis fuscalata* | Hymenoptera | Platygastridae | Data Deficient | Data Deficient | Hymenoptera 2014 (Ward et al. 2017) |
| *Platygaster novaezealandiae* | Hymenoptera | Platygastridae | Data Deficient | Data Deficient | Hymenoptera 2014 (Ward et al. 2017) |
| *Prosynopeas notaulicum* | Hymenoptera | Platygastridae | | | |
| *Shireplitis frodoi* | Hymenoptera | Braconidae | Data Deficient | Data Deficient | Hymenoptera 2014 (Ward et al. 2017) |
| *Shireplitis tolkieni* | Hymenoptera | Braconidae | Data Deficient | Data Deficient | Hymenoptera 2014 (Ward et al. 2017) |
| *Woldstedtius gauldius* | Hymenoptera | Ichneumonidae | Not Threatened | Not Threatened | Hymenoptera 2014 (Ward et al. 2017) |
| *Zelandonota rufiscutum* | Hymenoptera | Platygastridae | Data Deficient | Data Deficient | Hymenoptera 2014 (Ward et al. 2017) |
| *Zelostemma longipedicellatum* | Hymenoptera | Platygastridae | | | |
| *Zelostemma medionitens* | Hymenoptera | Platygastridae | | | |
| *Zelostemma brevistriatum* | Hymenoptera | Platygastridae | | | |
| *Zelostemma laevicornu* | Hymenoptera | Platygastridae | | | |
| *Zelostemma popovicii* | Hymenoptera | Platygastridae | | | |
| *Austridotea benhami* | Isopoda | Idoteidae | At Risk | Naturally Uncommon | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Aoraia oreobolae* | Lepidoptera | Hepialidae | At Risk | Naturally Uncommon | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Aoraia orientalis* | Lepidoptera | Hepialidae | | | |
| *Arctesthes siris* | Lepidoptera | Geometridae | | | |
| *Arctesthes titanica* | Lepidoptera | Geometridae | Threatened | Nationally Vulnerable | Lepidoptera 2015 (Hoare et al. 2017) |
| *Atomotricha lewisi* | Lepidoptera | Oecophoridae | | | |
| *Dichromodes gypsotis* | Lepidoptera | Geometridae | | | |
| *Dichromodes ida* | Lepidoptera | Geometridae | | | |
| *Dichromodes simulans* | Lepidoptera | Geometridae | | | |
| *Epichorista tenebrosa* | Lepidoptera | Tortricidae | | | |
| *Gelophaula palliata* | Lepidoptera | Tortricidae | | | |
| *Hierodoris gerontion* | Lepidoptera | Oecophoridae | | | |
| *Hydriomena clarkei* | Lepidoptera | Geometridae | | | |

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*Endemic invertebrates*

| Name | Order | Family | NZTCS Category | NZTCS Status | Report Name |
|---|---|---|---|---|---|
| *Lycaena sp. "Chrystalls Beach"* | Lepidoptera | Lycaenidae | Threatened | Nationally Critical | Lepidoptera 2015 (Hoare et al. 2017) |
| *Loxostege* sp. "salt pan" | Lepidoptera | Crambidae | At Risk | Relict | Lepidoptera 2015 (Hoare et al. 2017) |
| *Mallobathra cataclysma* | Lepidoptera | Psychidae | | | |
| *Mallobathra memotuina* | Lepidoptera | Psychidae | | | |
| *Mallobathra perisseuta* | Lepidoptera | Psychidae | | | |
| *Notoreas* "South Shag River" | Lepidoptera | Geometridae | | | |
| *Orocrambus cultus* | Lepidoptera | Crambidae | | | |
| *Orocrambus geminus* | Lepidoptera | Crambidae | | | |
| *Orocrambus lindsayi* | Lepidoptera | Crambidae | | | |
| *Orocrambus punctellus* | Lepidoptera | Crambidae | Data Deficient | Data Deficient | Lepidoptera 2015 (Hoare et al. 2017) |
| *Phylacodes cauta* | Lepidoptera | Plutellidae | | | |
| *Pyrgotis humilis* | Lepidoptera | Tortricidae | | | |
| *Scoparia caliginosa* | Lepidoptera | Crambidae | | | |
| *Scoparia pascoella* | Lepidoptera | Crambidae | | | |
| *Scoparia tuicana* | Lepidoptera | Crambidae | | | |
| *Scoriodyta suttonensis* | Lepidoptera | Psychidae | | | |
| *Tinea furcillata* | Lepidoptera | Tineidae | | | |
| *Tingena terrena* | Lepidoptera | Oecophoridae | | | |
| *Archyala culta* | Lepidoptera | Tineidae | Data Deficient | Data Deficient | Lepidoptera 2015 (Hoare et al. 2017) |
| *Hierodoris polita* | Lepidoptera | Xyloryctidae | At Risk | Naturally Uncommon | Lepidoptera 2015 (Hoare et al. 2017) |
| *Americovibone remota* | Opiliones | Neopilionidae | | | |
| *Cenefia sorenseni* | Opiliones | Triaenonychidae | | | |
| *Nuncia* (Corinuncia) *sublaevis* (Pocock, 1903) | Opiliones | Triaenonychidae | | | |
| *Rakaia macra* | Opiliones | Pettalidae | | | |
| *Prasma sorenseni regalia* | Opiliones | Triaenonychidae | | | |
| *Pharmacus notabilis* | Orthoptera | Rhaphidophoridae | Not Threatened | Not Threatened | Orthoptera 2022 (Trewick et al. 2022) |
| *Pharmacus senex* | Orthoptera | Rhaphidophoridae | Not Threatened | Not Threatened | Orthoptera 2022 (Trewick et al. 2022) |
| *Pharmacus vallestris* | Orthoptera | Rhaphidophoridae | Data Deficient | Data Deficient | Orthoptera 2022 (Trewick et al. 2022) |
| *Setascutum pallidum* | Orthoptera | Rhaphidophoridae | Not Threatened | Not Threatened | Orthoptera 2022 (Trewick et al. 2022) |
| *Sigaus childi* | Orthoptera | Acrididae | Threatened | Nationally Vulnerable | Orthoptera 2022 (Trewick et al. 2022) |
| *Nesoperla patricki* | Plecoptera | Gripopterygidae | Threatened | Nationally Critical | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Zelandobius auratus* | Plecoptera | Gripopterygidae | Data Deficient | Data Deficient | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Zelandobius crawfordi* | Plecoptera | Gripopterygidae | Threatened | Nationally Critical | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Zelandobius edwardsi* | Plecoptera | Gripopterygidae | Threatened | Nationally Critical | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Zelandobius inversus* | Plecoptera | Gripopterygidae | Data Deficient | Data Deficient | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Zelandobius mariae* | Plecoptera | Gripopterygidae | Threatened | Nationally Critical | Freshwater invertebrates 2018 (Grainger et al. 2018) |

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*Endemic invertebrates*

| Name | Order | Family | NZTCS Category | NZTCS Status | Report Name |
|---|---|---|---|---|---|
| *Zelandobius montanus* | Plecoptera | Gripopterygidae | Data Deficient | Data Deficient | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Zelandoperla maungatuaensis* | Plecoptera | Gripopterygidae | | | |
| *Synsphyronus lineatus* | Pseudoscorpiones | Garypidae | | | |
| *Austrachipteria novazealandica* | Sarcoptiformes | Achipteriidae | | | |
| *Cultroribula otagoensis* | Sarcoptiformes | Astegistidae | | | |
| *Dicrotegaeus incurvus* | Sarcoptiformes | Cerocepheidae | | | |
| *Dicrotegaeus mariehammerae* | Sarcoptiformes | Cerocepheidae | | | |
| *Lanceoppia trapezoides* | Sarcoptiformes | Oppiidae | | | |
| *Macrogena abbreviata* | Sarcoptiformes | Ceratozetidae | | | |
| *Macrogena brevisensilla* | Sarcoptiformes | Ceratozetidae | | | |
| *Macrogena hexasetosa* | Sarcoptiformes | Ceratozetidae | | | |
| *Magellozetes crassisetosus* | Sarcoptiformes | Ceratozetidae | | | |
| *Microlamellarea minuta* | Sarcoptiformes | Lamellareidae | | | |
| *Pedunculozetes ovatum* | Sarcoptiformes | Chamobatidae | | | |
| *Porallozetes badamdorji* | Sarcoptiformes | Punctoribatidae | | | |
| *Pterochthonius roynortoni* | Sarcoptiformes | Atopochthoniidae | | | |
| *Safrobates gerdi* | Sarcoptiformes | Oribatellidae | | | |
| *Safrobates insignis* | Sarcoptiformes | Oribatellidae | | | |
| *Scapheremaeus gibbus* | Sarcoptiformes | Cymbaeremaeidae | | | |
| *Scapheremaeus luxtoni* | Sarcoptiformes | Cymbaeremaeidae | | | |
| *Tripiloppia alpina* | Sarcoptiformes | Oppiidae | | | |
| *Tripiloppia frigida* | Sarcoptiformes | Oppiidae | | | |
| *Zealandozetes southensis* | Sarcoptiformes | Maudheimiidae | | | |
| *Alsolemia cresswelli* | Stylommatophora | Charopidae | Threatened | Nationally Critical | Land Snails 2010: (Mahlfeld et al. 2012) |
| *Costachorema hebdomon* | Trichoptera | Hydrobiosidae | At Risk | Naturally Uncommon | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Oeconesus angustus* | Trichoptera | Oeconesidae | Threatened | Nationally Critical | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Olinga christinae* | Trichoptera | Conoesucidae | Data Deficient | Data Deficient | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Philorheithrus harunae* | Trichoptera | Philorheithridae | At Risk | Naturally Uncommon | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Pseudoeconesus paludis* | Trichoptera | Oeconesidae | Threatened | Nationally Endangered | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Tiphobiosis quadrifurca* | Trichoptera | Hydrobiosidae | Data Deficient | Data Deficient | Freshwater invertebrates 2018 (Grainger et al. 2018) |
| *Aceria microphyllae* | Trombidiformes | Eriophyidae | | | |
| *Diversipes laticaudatus* | Trombidiformes | Scutacaridae | | | |
| *Pedaculops propinquae* | Trombidiformes | Eriophyidae | | | |
| *Scutacarus cornutus* | Trombidiformes | Scutacaridae | | | |
| *Scutacarus incisus* | Trombidiformes | Scutacaridae | | | |

Forty vascular plant taxa are endemic to Otago (Table 4). The most speciose order was Asterales with 11 taxa, then Boraginales and Poales with seven taxa, Capparales with three taxa, Araliales, Rosales, and Thymelaeales with two taxa, and Apiales, Caryophyllales, Fabales, Oxalidales, Ranunculales and Violales all with one taxon.

Thirty-four regionally endemic vascular plants have had their conservation status assessed nationally (Table 4; de Lange et al. 2024), while all 40 taxa had their conservation status assessed regionally (Table 4; Jarvie et al. 2025). In the recent regional threatened classification 20 species were assessed as Regionally Threatened (Regionally Critical = 13; Regionally Endangered = 4; Regionally Vulnerable = 3), 16 species were Regionally At Risk (Regionally Declining = 3; Regionally Naturally Uncommon = 13) and four taxa were Regionally Data Deficient.

**Table 4. Regionally endemic vascular plants species in Otago. The New Zealand Threat Classification System (NZTCS) and Regional Threat Classification System (RTCS) categories and statuses are provided from de Lange et al. 2024 and Jarvie et al. 2025, respectively.**

| Name and authority | Common name | Order | Family | NZTCS category | NZTCS status | RTCS category | RTCS status |
|---|---|---|---|---|---|---|---|
| *Abrotanella patearoa* Heads | | Asterales | Asteraceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Naturally Uncommon |
| *Acaena* aff. *rorida* (OTA 59561; Pool Burn) | bidibidi | Rosales | Rosaceae | Threatened | Nationally Critical | Regionally Threatened | Regionally Critical |
| *Acaena tesca* B.H.Macmill. | bidibidi | Rosales | Rosaceae | Not Threatened | Not Threatened | Regionally At Risk | Regionally Naturally Uncommon |
| *Anisotome* (b) (CHR 511716); "Otago bog") | | Araliales | Apiaceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Naturally Uncommon |
| *Anthosachne aprica* (Á.Löve & Connor) C.Yen & J.L.Yang | blue wheat grass | Poales | Poaceae | At Risk | Naturally Uncommon | Regionally Threatened | Regionally Vulnerable |
| *Apium* "inland saline" | | Apiales | Apiaceae | | | Regionally Threatened | Regionally Critical |
| *Brachyscome humilis* G.Simpson & J.S.Thomson | daisy | Asterales | Asteraceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Naturally Uncommon |
| *Brachyscome* "Taiari" | | Asterales | Asteraceae | | | Regionally Threatened | Regionally Critical |
| *Cardamine sciaphila* Heenan | cress | Capparales | Brassicaceae | Threatened | Nationally Critical | Regionally Threatened | Regionally Critical |
| *Carex applanata* Thorsen & de Lange | | Poales | Cyperaceae | At Risk | Naturally Uncommon | Regionally Threatened | Regionally Endangered |
| *Carex* aff. *aucklandica* "Dunstan" | | Poales | Cyperaceae | | | Regionally Data Deficient | Regionally Data Deficient |
| *Carex* aff. *wakatipu* (e) (CHR 472041; Bendigo) | | Poales | Cyperaceae | | | Regionally Data Deficient | Regionally Data Deficient |
| *Carmichaelia compacta* Petrie | Cromwell broom | Fabales | Fabaceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Declining |
| *Celmisia haastii* var. *tomentosa* G.Simpson & J.S.Thomson | daisy | Asterales | Asteraceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Naturally Uncommon |
| *Celmisia lindsayi* Hook.f. | Lindsay's daisy | Asterales | Asteraceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Naturally Uncommon |
| *Craspedia argentea* Breitw. & K.A.Ford, sp. nov. | | Asterales | Asteraceae | Threatened | Nationally Critical | Regionally Threatened | Regionally Critical |
| *Craspedia* (ll) (CHR 629757; Otago) | | Asterales | Asteraceae | Not Threatened | Not Threatened | Regionally Data Deficient | Regionally Data Deficient |
| *Craspedia* (y) (CHR 516260; Cape Saunders) | | Asterales | Asteraceae | Threatened | Nationally Critical | Regionally Threatened | Regionally Critical |
| *Festuca matthewsii* subsp. *pisamontis* Connor | | Poales | Poaceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Naturally Uncommon |
| *Gingidia grisea* Heenan | | Araliales | Apiaceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Declining |
| *Helichrysum simpsonii subsp. tumidum (Cheeseman) de Lange & Blanchon* | | Asterales | Asteraceae | Threatened | Nationally Vulnerable | Regionally Threatened | Regionally Vulnerable |
| *Kelleria villosa* var. *barbata* Heads | | Thymelaeales | Thymelaeaceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Naturally Uncommon |
| *Leptinella* aff. *pectinata* (a) (CHR 580894; Nevis) | | Asterales | Asteraceae | Threatened | Nationally Vulnerable | Regionally Threatened | Regionally Vulnerable |
| *Lepidium crassum* Heenan & de Lange | thick-leaved scurvy grass | Capparales | Brassicaceae | Threatened | Nationally Endangered | Regionally Threatened | Regionally Endangered |
| *Lepidium kirkii* Petrie | salt-pan cress | Capparales | Brassicaceae | Threatened | Nationally Critical | Regionally Threatened | Regionally Critical |
| *Luzula traversii* var. *tenuis* Edgar | wood-rush | Poales | Juncaceae | At Risk | Naturally Uncommon | Regionally Threatened | Regionally Endangered |
| *Melicytus* aff. *crassifolius* (b) (CHR 616706; Cape Saunders) | | Violales | Violaceae | Threatened | Nationally Critical | Regionally Threatened | Regionally Critical |
| *Montia* aff. *fontana* (CHR 681612; "Otago alpine flush") | | Caryophyllales | Montiaceae | | | Regionally At Risk | Regionally Naturally Uncommon |
| *Myosotis albosericea* Hook.f. | | Boraginales | Boraginaceae | Threatened | Nationally Critical | Regionally Threatened | Regionally Critical |
| *Myosotis bryonoma* Meudt, Prebble & Thorsen | forget-me-not | Boraginales | Boraginaceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Naturally Uncommon |

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*Endemic vascular plants*

| Name and authority | Common name | Order | Family | NZTCS category | NZTCS status | RTCS category | RTCS status |
|---|---|---|---|---|---|---|---|
| *Myosotis goyenii* Petrie subsp. *goyenii* | | Boraginales | Boraginaceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Declining |
| *Myosotis hikuwai* Meudt et al. 2022. | | Boraginales | Boraginaceae | Threatened | Nationally Endangered | Regionally Threatened | Regionally Endangered |
| *Myosotis oreophila* Petrie | | Boraginales | Boraginaceae | Threatened | Nationally Critical | Regionally Threatened | Regionally Critical |
| *Myosotis umbrosa* Meudt, Prebble & Thorsen | | Boraginales | Boraginaceae | Threatened | Nationally Critical | Regionally Threatened | Regionally Critical |
| *Oxalis* aff. *magellanica* (CHR 472028: "Otago alpine flush") | | Oxalidales | Oxalidaceae | | | Regionally At Risk | Regionally Naturally Uncommon |
| *Pimelea sericeovillosa* subsp. *alta* C.J.Burrows | | Thymelaeales | Thymelaeaceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Naturally Uncommon |
| *Poa pygmaea* Buchanan | | Poales | Poaceae | At Risk | Naturally Uncommon | Regionally At Risk | Regionally Naturally Uncommon |
| *Solenogyne christensenii* (Petrie) de Lange, Jian Wang ter & Barkla, comb. nov. | | Asterales | Asteraceae | Threatened | Nationally Critical | Regionally Threatened | Regionally Critical |
| *Ranunculus* (c) (CHR 472008; Garvie Range) | | Ranunculales | Ranunculaceae | Data Deficient | Data Deficient | Regionally At Risk | Regionally Naturally Uncommon |

In Otago six lizard species are regional endemics (Table 5). Of these six, three are skinks and three are geckos. Two of the largest, most colourful species of skinks in Aotearoa New Zealand are the regionally endemic Otago skink (*O. otagense*) and grand skink (*O. grande*). Shiny black with bold blotches of gold, the Otago skink can reach 30 cm in length on a heavy-set body and is a true giant among the country's endemic skinks. The grand skink is a little smaller and more svelte than the Otago skink, and its black skin is peppered with tiny golden flecks. A small alpine skink is the third regionally endemic skink and is restricted to two populations in inland Otago; it is known as the Burgan skink (*O. burganae*). The three gecko species that are endemic to Otago belong to the *Woodworthia* species complex: Raggedy Range gecko (*W.* "Raggedy"), schist gecko (*W.* "Central Otago"), and the Kawarau gecko (*W.* "Cromwell"). These three gecko species are medium-sized, with diurno-noctural activity patterns, and typically occur in rocky habitats. All six regionally endemic lizards are at risk or threatened with extinction as assessed in the national and regional threat classifications (Hitchmough et al. 2021; Jarvie et al. 2024).

**Table 5. Regionally endemic reptile species in Otago. The New Zealand Threat Classification System (NZTCS) and Regional Threat Classification System (RTCS) categories and statuses are provided from Hitchmough et al. 2021 and Jarvie et al. 2024, respectively.**

| Name and authority | Common name | NZTCS Category | NZTCS Status | RTCS Category | RTCS Status |
|---|---|---|---|---|---|
| *Oligosoma burganae* Chapple et al., 2011 | Burgan skink | Threatened | Nationally Endangered | Regionally Threatened | Regionally Vulnerable |
| *Oligosoma grande* (Gray, 1845) | grand skink | Threatened | Nationally Endangered | Regionally Threatened | Regionally Endangered |
| *Oligosoma otagense* (McCann, 1955) | Otago skink | Threatened | Nationally Endangered | Regionally Threatened | Regionally Endangered |
| *Woodworthia* "Central Otago" | schist gecko | At Risk | Declining | Regionally At Risk | Regionally Declining |
| *Woodworthia* "Cromwell" | Kawarau gecko | At Risk | Declining | Regionally At Risk | Regionally Declining |
| *Woodworthia* "Raggedy" | Raggedy Range gecko | Threatened | Nationally Vulnerable | Regionally Threatened | Regionally Vulnerable |

In Otago two bryophytes are regionally endemic (Table 6). One of these species is a liverwort (*Neolepidozia patentissima* var. *ampliata*, with a national threat assessment of Data Deficient), while the other is a moss (*Conostomum pusillum* var. *otagoensis*, whose threat status has not yet been nationally assessed).

**Table 6. Regionally endemic bryophyte species in Otago. The New Zealand Threat Classification System (NZTCS) category and status for the liverwort is from de Lange et al. 2020.**

| Name and authority | Order | NZTCS category | NZTCS status | Functional group |
|---|---|---|---|---|
| *Neolepidozia patentissima* var. *ampliata* (J.J. Engel & G.L.Sm.) E.D. Cooper | Jungermanniales | Data Deficient | Data Deficient | liverwort |
| *Conostomum pusillum* var. *otagoensis* Fife | Bartramiales | | | moss |

The only regionally endemic bird species is the Otago shag/matapo, i.e., known to currently exclusively breed in the region (Table 7). Although a Holocene fossil and archaeological midden assemblages indicate a former wider distribution across the eastern Te Waipounamu/South Island, following human arrival the species became

restricted to rocky cliffs and islands off Otago. The Otago shag has recently extended their range northwards and southwards, and now occur from the southern Catlins north towards the Waitaki River. Using updated information released since national assessment, research suggests the species is not having a population increase > 10% but would have a stable count of ±10 % between 2007 and 2021 (Parker & Rexer-Huber 2022). This is why there is a difference between the national status and the regional status.

**Table 7. Regionally endemic bird species in Otago. The New Zealand Threat Classification System (NZTCS) category and status is from Robertson et al. 2021 and the Regional Threat Classification (RTCS) category and status is from Jarvie et al. 2025.**

| Name and authority | Common Name | Māori Name | NZTCS category | NZTCS status | RTCS category | NZTCS status |
|---|---|---|---|---|---|---|
| *Leucocarbo chalconotus* G.R. Gray, 1845 | Otago shag | matapo | Threatened | Nationally Increasing | Regionally Threatened | Regionally Vulnerable |

Nine freshwater fishes are endemic to the Otago region, all of which are Galaxiid species (Table 8). There are two slim and slender species from the pencil galaxias group – lowland longjaw galaxias (*Galaxias cobitinis*) and alpine galaxias (Manuherikia River) (*G.* aff. *paucispondylus* "Manuherikia"), and seven belong to the cigar-shaped *Galaxias vulgaris* species complex: central Otago roundhead galaxias (*G. anomalus*), Taieri flathead galaxias *(G. depressiceps*), Eldon's galaxias (*G. eldoni*), dusky galaxias (*G. pullus*), Teviot flathead galaxias (*G.* "Teviot"), Clutha flathead galaxias (*G.* "species D"), and Nevis galaxias (*G.* "Nevis"). All of Otago's endemic freshwater fishes are threatened with extinction (Dunn et al. 2018).

**Table 8. Regionally endemic freshwater fishes in Otago. The New Zealand Threat Classification System (NZTCS) categories and statuses are provided from Dunn et al. 2018.**

| Name and authority | Common name | NZTCS Category | NZTCS Status |
|---|---|---|---|
| *Galaxias anomalus* Stokell, 1959 | central Otago roundhead galaxias | Threatened | Nationally Endangered |
| *Galaxias cobitinis* McDowall & Waters, 2002 | lowland longjaw galaxias (Kakanui River) | Threatened | Nationally Critical |
| *Galaxias depressiceps* McDowall & Wallis, 1996 | Taieri flathead galaxias | Threatened | Nationally Vulnerable |
| *Galaxias eldoni* McDowall, 1997 | Eldon's galaxias | Threatened | Nationally Endangered |
| *Galaxias pullus* McDowall, 1997 | dusky galaxias | Threatened | Nationally Endangered |
| *Galaxias* "Teviot" | Teviot flathead galaxias (Teviot River) | Threatened | Nationally Critical |
| *Galaxias* aff. *paucispondylus* "Manuherikia" | alpine galaxias (Manuherikia River) | Threatened | Nationally Endangered |
| *Galaxias* "Nevis" | Nevis galaxias (Nevis River) | Threatened | Nationally Endangered |
| *Galaxias* "species D" | Clutha flathead galaxias | Threatened | Nationally Critical |

# Summary and conclusions

The Otago Region has a diverse biota (fauna, flora and fungi) reflecting the region's contemporary landscapes, geological past and climatic history. Alpine areas, river valleys, dryland ecosystems and coastal landscapes are among the many ecosystems that contribute to this biodiversity.

For most taxonomic groups, the process of obtaining data and verifying regional endemics within the Otago region worked well, particularly with the data-driven approach trialled. However, it would be highly valuable to have all institutions in Aotearoa New Zealand provide data to GBIF as a central aggregator of biodiversity information. This would enhance access to data and provide better taxonomic and geographical coverage.

## *Endemic species*

A total of 359 species were identified as regionally endemic to Otago. Although it is often difficult to create lists of endemic species for a region, with the traditional approach being to create a list by sifting through published literature, examining specimens in collections, and/or conducting new sampling. However, these are time consuming tasks, typically done by a researcher with a restricted taxonomic focus. The combination of the data-driven and traditional approaches has made regionally endemic lists of species feasible.

Because of the increasing number of digital records now makes such a task much easier and taxonomically more comprehensive, the data-driven approach used in this report to generate a preliminary regional list of endemic species worked well. For example, it returned several well-known endemic species, such as the Cromwell chafer beetle (*Prodontria lewisi*), speargrass weevil (*Lyperobius cupiendus*), Maungatua stonefly (*Zelandoperla maungatuaensis*), salt pan cress (*Lepidium kirkii*), Cromwell broom (*Carmichaelia compacta*), Otago skink (*Oligsoma otagense*), grand skink (*O. grande*), among many others.

Despite this, the endemic list should be considered preliminary. The biggest issue is that the list has been created with incomplete digital information about almost all the species. Consequently, the extent of the geographical distribution is also likely to be incomplete (although there are some exceptions; for example, the Cromwell chafer beetle, the Maungatua stonefly, salt pan cress and the grand skink).

Greater confidence could be obtained by:

A. Digitising all specimens that already exist in taxonomic collections

B. Undertaking new field surveys to better delimit a species distribution (e.g., it is likely that some of the regionally endemic species listed in this report will also be present in the Southland and Canterbury regions).

Taxa that are potentially regionally endemic that do not appear in this report should be reported to the Otago Regional Council for future assessment and inclusion in subsequent reports. Future reports intend to also focus on regional endemic lists for species from lesser-known taxonomic groups, e.g., fungi, freshwater invertebrates, spiders.

## *Recommendations*

- Complete compilation of regional endemic lists for species from lesser-known taxonomic groups.
- Support initiatives to digitise all specimens and samples of endemic species in the Otago Region. This will give important information on their geographical distributions.
- Encourage institutions to become data providers to GBIF as a central aggregator of biodiversity information. This will enhance access to data and provide better taxonomic and geographical coverage.
- Encourage and support national initiatives on the digitisation of specimens and the georeferencing of locality information.

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