Climate Change Risk and Vulnerability Assessment for Waitaha Canterbury's Ecosystems

Contract Report No. 7603b

Providing outstanding ecological services to sustain and improve our environments

Wildlands

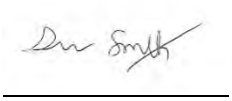
Climate Change Risk and Vulnerability Assessment for Waitaha Canterbury's Ecosystems

Contract Report No. 7603b
December 2025

Project Team:
Justyna Giejsztowt – Modelling and report author
Joshua Thoresen – Modelling

Prepared for:
Environment Canterbury
200 Tuam Street
Canterbury 8011

Reviewed and approved for release by:



Des Smith
Senior Principal Ecologist, South Island Regional Manager, Director
Wildland Consultants Ltd
9/12/2025



Wildlands
Ecology and Restoration



Cite this report as follows:

Wildland Consultants (2025). *Climate Change Risk and Vulnerability Assessment for Waitaha Canterbury's Ecosystems.* Wildland Consultants Contract Report No. 7603b. Prepared for Environment Canterbury. 177pp.

Christchurch Office
238 Annex Road, Middleton, PO Box 9276, Tower Junction, Ph 03 338-4005

Head Office
99 Sala Street, PO Box 7137, Te Ngae, Rotorua Ph 07-343-9017 Email: rotorua@wildlands.co.nz

www.wildlands.co.nz

Executive summary

This report provides a Climate Change Vulnerability and Risk Assessment (**CCVRA**) for Waitaha/Canterbury's indigenous ecosystems. It provides the first comprehensive, region-wide evaluation of how climate change is likely to affect the health, function, and long-term resilience of native habitats. This CCVRA establishes a reproducible, transparent, and data-driven framework for identifying which ecosystems are most at risk, why they are vulnerable, and how risk may change under future climate scenarios. Our methodology includes:

- The integration of a wide variety of pre-existing datasets.
- The first attempt to map all indigenous ecosystems in the region.
- The mapping of ten climate hazards using seventeen climate variables under four climate scenarios.
- Assessment of mapped ecosystem according to standardised sensitivity and adaptive capacity criteria.

This information is used to generate consistent vulnerability and risk ratings across ecosystem types, enabling comparison and prioritisation. The framework created here can continue to be used as updated information becomes available, ensuring its relevance for ongoing monitoring and adaptive management. It integrates ecological information to generate consistent vulnerability ratings across ecosystem types, enabling direct comparison and prioritisation.

This report provides extensive commentary regarding the outcomes of this assessment, including many region- and district-wide maps of exposure, vulnerability and risk. The exposure of each district to each of the ten climate hazards considered is discussed. Further, commentary is provided regarding ecosystems: ecosystem location, vulnerability and risk are discussed.

The findings offer substantial value for regional and national decision-making. They provide:

- Evidence-based prioritisation for conservation planning, restoration investment, and policy development.
- Spatially explicit insights that support land-use planning, freshwater and coastal management, and regulatory processes.
- Guidance for climate adaptation strategies, including where interventions should be prioritised.
- A foundation for future research and monitoring.

As one of the first assessments of its kind in Aotearoa New Zealand, this CCVRA demonstrates how climate-risk principles can be applied consistently to complex ecological systems. It offers a scalable and transferable framework that can support similar assessments in other regions and contribute to national-level biodiversity and climate-resilience planning.

Overall, this work equips mana whenua, regional authorities, conservation practitioners, and partners across Waitaha with a robust, defensible basis for safeguarding indigenous ecosystems in a rapidly changing climate. This assessment is intended to provide a key piece of evidence for the future development of a Waitaha-wide blue-green network (*ki uta ki tai*, from the mountains to the sea).

Contents

1.0	**Introduction**	**8**
2.0	**Scope**	**8**
3.0	**Assessment structure**	**9**
4.0	**Identifying and mapping ecosystems**	**10**
4.1	Data sources	10
4.2	Methods	11
4.3	Ecosystem mapping results	16
4.4	Discussion of methods and limitations	18
5.0	**Climate change exposure**	**20**
5.1	Data	20
5.2	Methods	21
5.3	Discussion of methods and limitations	31
6.0	**Ecosystem vulnerability metrics**	**36**
6.1	Data	36
6.2	Methods	36
6.3	Discussion of methods and limitations	44
7.0	**Risk**	**45**
8.0	**Results**	**48**
8.1	Exposure	48
8.2	Vulnerability	69
8.3	Risk	76
9.0	**Conclusions**	**114**
Acknowledgments		**115**
References		**115**
Appendix 1		**117**
Dataset and analysis workflow – Identifying and mapping ecosystems		117
Dataset and analysis workflow – Climate change exposure		118
Dataset and analysis workflow – Ecosystem vulnerability		119
Appendix 2		**120**
Reconciling ecosystems		120
Appendix 3		**121**
Climate variable threshold selection		121
Appendix 4		**129**
Ecosystem exposure to climate change		129
Appendix 5		**160**
Ecosystem sensitivity and adaptive capacity		160

© Wildland Consultants Ltd 2025

This report has been produced by Wildland Consultants Ltd for Environment Canterbury. All copyright in this report is the property of Wildland Consultants Ltd and any unauthorised publication, reproduction, or adaptation of this report, including entry into generative artificial intelligence, is a breach of that copyright.

Acronyms used in this report

Acronym	Definition
AEP	Annual exceedance probability
CCCRA	Canterbury Climate Change Risk Assessment
CCRA	Climate change risk assessment
CRS	Coordinate reverence system
DOC	Department of Conservation
ECan	Canterbury Regional Council (Environment Canterbury)
ENSO	El Niño–Southern Oscillation
FENZ	Freshwater Ecosystems of New Zealand
FWI	Fire weather index
GBIF	Global Biodiversity Information Facility
GCMs	Global circulation models
IPCC	Intergovernmental Panel for Climate Change
LCDB	Landcover database
LENZ	Land Environments of New Zealand
LRR	Linear regression rate
MfE	Ministry for the Environment
NIWA	National Institute of Water and Atmospheric Research – Taihoro Nukurangi
NUE	Naturally Uncommon Ecosystem
NZCCD	New Zealand Coastal Change Dataset
NZLRI	New Zealand Land Resource Inventory
NZMG	New Zealand map grid
NZTCS	New Zealand Threat Classification System
PED	Potential evapotranspiration deficit
PV	Potential vegetation of New Zealand
SDM	Species distribution model

1.0 Introduction

Canterbury Regional Council (Environment Canterbury, **ECan**), as a part of the Canterbury Climate Partnership Plan under the Canterbury Mayoral Forum, have requested a spatial climate change risk and vulnerability assessment for Waitaha/Canterbury's ecosystems (terrestrial, freshwater, and coastal), within the established framework typically used for climate change risk assessments (**CCRA**). This assessment is intended to provide a key piece of evidence for the future development of a Waitaha-wide blue-green network (*ki uta ki tai*, from the mountains to the sea). The project team has identified three primary ***goals*** for this project:

- Create links between regional biodiversity work and climate change by providing a spatially explicit resource for understanding potential future climate impacts on ecosystems and their potential to cope with these changes under different scenarios, incorporating elements of exposure, sensitivity, and adaptive capacity.
- Clearly demonstrate which ecosystems in the region are potentially most at risk/vulnerable to climate change impacts, allowing them to be integrated into the blue-green network to the highest extent possible.
- Show changes over mid- and end-century time periods and with two different climate scenarios to support strategic planning.

The focus of work is explicitly at the ecosystem scale, rather than the species scale. In this regard, this project is ambitious as there is a notable gap for ecosystem-wide assessments nationwide. Particularly missing are quantitative ecosystem-wide assessments of climate change impacts.

2.0 Scope

This report represents a second stage of works for the Climate Change Risk and Vulnerability Assessment for Waitaha Canterbury's Ecosystems project, following an initial data sources and methodology report (Wildland Consultants, 2025).

This report outlines the data sources and methods that were ultimately used to identify and map ecosystems terrestrial and freshwater ecosystems, calculate climate change exposure and assess ecosystem vulnerability and risk. We include discussions regarding methods and data sources in each of these workstreams that should inform improvements in future iterations of this ambitious project. This report is accompanied by an ArcGIS StoryMap as well as a full version of spatial layers.

3.0 Assessment structure

Climate change risk reflects an ecosystem's likelihood to be harmed by climate hazards such as increases in temperature drought frequency, or a rising sea level, and it is determined by three interlinked components—**exposure, sensitivity** and **adaptive capacity**[1], as defined in **Table 1** and contextualised in **Figure 1**.

An ecosystem needs to be exposed to one or more climate hazards, be sensitive to that exposure and have low adaptive capacity to be at risk. An ecosystem's innate sensitivity or adaptive capacity does not influence ecosystem risk without exposure to hazards. Equally, if an ecosystem is not sensitive to hazards, then exposure does not equate risk. Finally, if an ecosystem has adaptive capacity, it can reduce or offset vulnerability even under significant exposure or sensitivity.

Table 1—Definitions of key terms used in this climate change vulnerability and risk assessment. Definitions as per IPCC (2022b).

Term	Description
Exposure	The presence of people; livelihoods; species or ecosystems; environmental functions, services, and resources; infrastructure; or economic, social, or cultural assets in places and settings that could be adversely affected.
Sensitivity	The degree to which a system or species is affected, either adversely or beneficially, by climate variability or change. The effect may be direct (e.g., a change in crop yield in response to a change in the mean, range, or variability of temperature) or indirect (e.g., damages caused by an increase in the frequency of coastal flooding due to sea level rise).
Adaptive capacity	The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities or to respond to consequences.
Vulnerability	The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.
Risk	The potential for adverse consequences for human or ecological systems, recognising the diversity of values and objectives associated with such systems. In the context of climate change, risks can arise from potential impacts of climate change as well as human responses to climate change. […] In the context of climate change impacts, risks result from dynamic interactions between climate-related hazards with the exposure and vulnerability of the affected human or ecological system to the hazards. Hazards, exposure and vulnerability may each be subject to uncertainty in terms of magnitude and likelihood of occurrence, and each may change over time and space due to socio-economic changes and human decision-making.

[1] This is a well-established framework to assess climate vulnerability of ecosystems. This framework mirrors IPCC reporting as well as previous assessments made for Aotearoa New Zealand and Waitaha Canterbury.

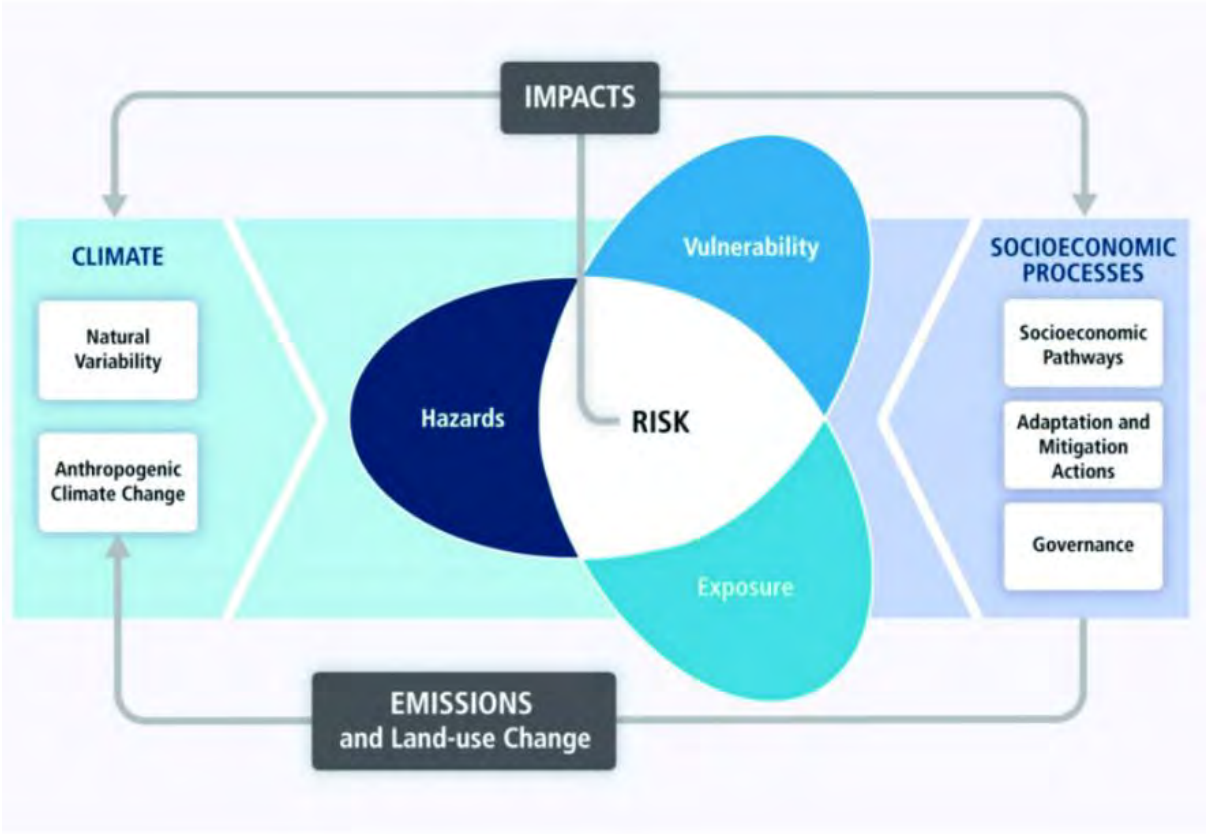


Figure 1—International Panel on Climate Change (IPCC) definition of risk.

4.0 Identifying and mapping ecosystems

4.1 Data sources

No region-wide mapping of current natural ecosystems or potential natural ecosystems exists for Waitaha Canterbury; therefore, this was the first component of this work. A variety of spatially-explicit data sources were used:

- ***Region extent.*** Regional Council 2023 Clipped (generalised) was downloaded from Stats NZ.[1]
- ***Land Environments of New Zealand*** **(LENZ)**, an environmental classification system. This classification groups areas with similar environmental conditions—such as climate, landform, and soil characteristics—into distinct land environments.
- ***Potential Vegetation of New Zealand*** (**PV**), a comprehensive spatial representation of the country's likely mature vegetation in the absence of human influence, developed by Manaaki Whenua – Landcare Research.
- ***Landcover database*** (**LCDB**). The LCDB maps and classifies Aotearoa New Zealand's land cover using satellite imagery and aerial photography, with the most recent version provided for 2018/19.

[1] https://datafinder.stats.govt.nz/layer/111181-regional-council-2023-clipped-generalised/

- ***Canterbury Coastal Wetland Vegetation/Habitats.*** Coastal wetland habitats are mapped and classified into several classes: saltmarsh, swamp, shallow water, marsh, fen, floating aquatic, rafted aquatic and shallow open water.[1]
- ***River locations and classes.*** These were taken as per Ministry for the Environment (**MfE**) datasets.[2]
- ***Lake locations.*** These were taken as per topo mapping.[3]
- A variety of additional data sources were used to define Naturally Uncommon Ecosystems (**NUEs**) in this project, further details are provided in **Table 2**.

The following non-spatial data sources have been used in this portion of the work:

- ***Indigenous ecosystems.*** Cieraad *et al*. 2015 defined a subset of the LCDB categories considered to be indigenous. This was used here to identify indigenous ecosystems.
- ***Naturally Uncommon Ecosystems*** (**NUE**)**.** A list of terrestrial NUEs was assembled by Williams *et al.* (2007).
- ***Canterbury Climate Change Risk Assessment*** **(CCCRA)** ***classifications*** (Tonkin and Taylor, 2022).

Two data sources were used in this analysis that cannot be publicly shared:

- ***Canterbury wetland mapping.***
- ***Topographic braided riverbeds***.

These data sources are included in analyses of exposure and vulnerability, but they are not used in mapping provided for the project. **Appendix 1** shows the way in which these sensitive data sources are used in some aspects of the work but not others. Further details regarding all data sources are provided in Wildland Consultants (2025).

4.2 Methods

4.2.1 Data workflow

All data were brought together in R statistical programming software (R Core Team 2025). The resources outlined above were combined in the following way:

- The PV and LCDB data layers were cropped to the extent of Waitaha Canterbury and intersected with one another (*i.e.* unique combinations were identified). This layer was cropped to the extent of Waitaha Canterbury using regional political boundaries and all non-indigenous ecosystems were removed as per Cieraad *et al*. 2015.
- LENZ level two categories were intersected with the resulting dataset. The dominant LENZ level 2 category was taken for each polygon.
- River lines were limited to only larger rivers (those of order 4 or greater). These line data were transformed into polygon data by giving them a width, with the width provided depending on river order.[4] Riparian zones were calculated for each river polygon (with a width of 20m each side).

[1] https://opendata.canterburymaps.govt.nz/datasets/ecan::canterbury-coastal-wetland-vegetation-habitats/explore

[2] https://data.mfe.govt.nz/layer/53309-river-flows/

[3] https://data.linz.govt.nz/layer/50293-nz-lake-polygons-topo-150k/ The use of a different layer, Freshwater Ecosystems of New Zealand (FENZ) 'Lakes' November 2024, was originally suggested. We identified that the FENZ data contained more lake characteristic data; however the topo mapping had better capture of lakes, particularly those that are very small. Therefore, the latter layer was used.

[4] River width was based on averaging several measurements of stream/river widths on Google Earth: 10m buffer for 4th order, 50m buffer for 5th order, 100m buffer for 6th order, 250m buffer for 7th order and 500m buffer for 7th order. Total river area is double: buffer represents each side of the river.

- Lake layers as well as the river polygons were cleaned by merging overlapping polygons, removing null values. The dominant LENZ level 2 category within each polygon was calculated.
- River and riparian zones were merged into the terrestrial dataset. River areas and riparian zones superseded terrestrial designations.
- Data sources as outlined in **Table 2** were assembled into a shapefile representing Naturally Uncommon Ecosystems. Ecosystems were cross-checked to ensure that NUEs were represented as far as possible.
- Ecosystems were reconciled where designations in the LCDB and PV datasets were inconsistent. This was done based on expert knowledge of these data sources. Rules for streamlining ecosystems follow **Appendix 2.**
- A spatial layer was created that maps all unique ecosystems in Waitaha Canterbury. Broad CCCRA classifications were assigned to each ecosystem.
- The two sensitive datasets that were made available for this work (topographic braid plains and wetlands) were added to the mapping. This mapping overrode any other classifications, except wetlands that already had a higher level of detail.

A schematic of the way in which data were brought together is provided in **Appendix 1**.

4.2.2 Naturally Uncommon Ecosystems (NUEs)

Many of the NUEs identified by Williams *et al.* (2007) are present in Waitaha Canterbury. NUEs present in the region, as per Wiser *et al.* (2007) are presented in **Table 2**. This table also summarises methods used to model these ecosystems.

Table 2—Mapping of Naturally Uncommon Ecosystems (NUE) in Waitaha Canterbury in this project. To define cliffs scarps and tors, cliffs and terrace risers and rock outcrops were taken from topo maps[1] and given a buffer of 2m and 10m respectively. * denotes NUEs for which mapping has not previously been assembled.

Ecosystem type	NUE	Aligning ecosystems	Comments	
Subterranean habitats	Cave entrances *	Cave entrances used as mapped[2], with a 20m buffer.	The locations mapped are likely to be accurate, albeit incomplete.	
	Sinkholes *	Topo maps of sinkholes[3], with a 20m buffer	The locations mapped are likely to be accurate, albeit incomplete.	
	Subterranean basalt fields	*Not mapped*		
	Subterranean river gravels	*Not mapped*		
Braided riverbeds		ECan delineations of this ecosystem was made available for the project.[4]	⚠ This ecosystem mapping is used in vulnerability assessments but is not represented in mapping outputs.	
Coastal wetlands	Dune slacks	The Canterbury coastal wetlands layer was used, where wetland form is "Dune Slack".		
	Lagoons	The Canterbury coastal wetlands layer was used, where wetland form is "Coastal Lagoon" or "Hapua".		
	Estuaries	The Canterbury coastal wetlands layer was used, where wetland form is "Estuary".		
Inland wetlands	Seepages and flushes	*Not mapped*	No known mapping.	⚠ Additional ecosystem mapping is used in vulnerability assessments that is not represented in mapping outputs. This may to some extent capture all wetland types.
	Ephemeral wetlands	The Canterbury wetlands layer was used, where dominant system is ephemeral.	The majority of wetlands in this layer have not had their seasonality assessed. It is thus likely that this mapping is incomplete. Detailed mapping work of kettle hole wetlands was undertaken for the Eastern South Island by J. Gosden and should be incorporated when available.	
	Lake margins	The Canterbury wetlands layer was used, where dominant hydrology was palustrine.	The majority of wetlands in this layer have not had their hydrology assessed. Further, lake margin habitats are poorly defined[5]. It is thus likely that this mapping is incomplete.	
	Tarns *	NZ topo mapping of lakes[6], cropped to elevation above 690m.a.s.l. and size below 9.2 ha[7].		
	Cushion bogs	*Not mapped*		
	Inland saline salt pans	*Not mapped*	One location known at Takapō/Tekapo Military Training Area. One is mapped in the Waitaha Canterbury Wetlands dataset. It was considered that this assessment could not be done robustly for this ecosystem.	

[1] https://data.linz.govt.nz/layer/50257-nz-cliff-edges-topo-150k/

[2] https://data.linz.govt.nz/layer/50253-nz-cave-points-topo-150k/

[3] https://data.linz.govt.nz/layer/50345-nz-sinkhole-points-topo-150k/

[4] https://ecan.maps.arcgis.com/apps/instant/basic/index.html?appid=baa7a732868546f3a2bb0a248c681345

[5] "…lake margin vegetation ranges from periodically inundated podocarp forest as in Westland, through tall reedland and rushland, to sedgeland and herbfield, and down to open land with only scattered herbs on rocky lake shores as in many eastern South Island lakes." - https://www.landcareresearch.co.nz/publications/naturally-uncommon-ecosystems/wetlands/lake-margins

[6] https://data.linz.govt.nz/layer/50293-nz-lake-polygons-topo-150k/

[7] Thresholds were determined by capturing the largest named tarn (Stony Tarn; 92,053.16 m^2) and the lowest-altitude named tarn (Morris Tarn; 691 m.a.s.l.).

Ecosystem type	NUE	Aligning ecosystems		Comments
Dune habitats	Active sand dunes	*Not mapped*		Department of Conservation (**DOC**) ground truthing identified misattributions and data quality considered low (Ellery Mayence (DOC) *pers. comm*. 2025).
	Dune deflation hollows	*Not mapped*		No known mapping.
	Shingle beaches	*Not mapped*		DOC holds some data, which are considered worthwhile but some overlap with dune ecosystems in some locations. We were not able to secure this data.
	Stony beach ridges	*Not mapped*		No known mapping.
Basic geology	Basic cliffs scarps and tors*	Areas with volcanic geology were identified[1]. Cliffs, scarps and tors within this area were taken as mapped by topo maps. Coastal cliffs were excluded.		Our mapping is likely to overrepresent this ecosystem.
	Volcanic boulderfields	*Not mapped*		
Limestone geology	Calcareous coastal cliffs *	Areas with limestone geology were identified. Cliffs, scarps and tors within this area were taken as mapped by topo maps.	Coastal cliffs were those that had an average elevation of less than 100m.	Existing spatial data undertaken by DOC maps all limestone NUEs as part of one mosaic. We were not able to receive this data for this body of work. The use of these layers should be considered in the future.
	Boulderfields of calcareous rocks		This category includes all areas that were not identified as calcareous coastal cliffs. While mapping focussed on cliffs, scarps and tors, boulderfields may be partially captured.	
	Calcareous cliffs scarps and tors *			
	Limestone erosion pavements		*Not mapped*	
Acidic geology	Boulderfields of acidic rocks (non-volcanic)*	Areas with acidic geology were identified[2].	This category includes all cliffs, scarps and tors that were not identified as coastal cliffs. While mapping focussed on cliffs, scarps and tors, boulderfields may be partially captured.	
	Cliffs, scarps and tors of acidic rocks *			
	Coastal cliffs on acidic rocks *		Coastal cliffs were those that had an average elevation of less than 100m.	
	Screes of acidic rocks *	Cliffs, scarps and tors within this area were taken as mapped by topo maps.		
		Areas of scree within this geology were mapped[3].		
Quartzose geology	Cliffs, scarps and tors of quartzose rocks *	Areas with quartzose geology were identified[4]. Cliffs, scarps and tors within this area were taken as mapped by topo maps.		Likely overrepresents quartzose rocks as not all sandstones are quartzose.

[1] Lavas and Welded ignambrites (Vo) and Ancient volcanics (In) were taken. Unlike other categories, "base rock was used". This is because much of this habitat in Canterbury is on the banks Peninsula, where geology of upper layers comprises loess.

[2] Indurated Sandstone SI (Hs), Plutonics (Gn) and Greywacke (Gw) were considered acidic.

[3] https://data.linz.govt.nz/layer/50338-nz-scree-polygons-topo-150k/

[4] Bedded sandstone (Sb), Massive sandstone (Sm) and Massive sandstone SI (Ss) were considered potentially quartzose

Ecosystem type	NUE	Aligning ecosystems	Comments
Ultrabasic geology	Ultrabasic cliffs, scarps and tors	*Not mapped*	Despite being reported as occurring in Kaikōura, ultramafic land environments (LENZ = S) are not mapped in Waitaha Canterbury. Ultramafics are also not mapped in the LRI (geological) data. Therefore, they were not mapped here.
	Ultrabasic hills		
	Ultrabasic screes		
Post-glacial/nival systems	Snow banks *	All occurrences for *Chionochloa oreophila* (snow patch grass), a species typical of this ecosystem[1] were downloaded from GBIF in Waitaha Canterbury[2]. These were given a 20m buffer to represent the ecosystem.	⚠️This ecosystem mapping is considered experimental. It is likely to misrepresent the distribution of this ecosystem. Snowbank ecosystems are mapped based on field verification of communities elsewhere in the country, *e.g.* Rock and Pillar Range, which is considered significantly more reliable.
	Moraines *	NZ topo mapping of moraines and moraine walls[3]	
	Frost hollows	*Not mapped*	No known mapping.
	Inland outwash gravels *	LENZ category N6 captures much of the inland outwash gravel in the Waitaki Basin. Areas of N6 where LCDB cover indicates that the gravel substrate may remain intact[4] were used to limit the extent of this ecosystem.	This designation is likely to overestimate the area of inland outwash gravels within the Waitaki basin but likely to underestimate this ecosystem in other areas.
Strongly leached terraces and plains ("Wilderness vegetation")		*Not mapped*	No known mapping.
Other coastal habitats	Coastal turfs	*Not mapped*	No known mapping.
	Coastal rock stacks	*Not mapped.*	Mapping of these features by topo maps is partial but was not considered adequate to create an ecologically meaningful dataset.
	Marine mammal haul outs	*Not mapped*	In future assessments, spatial points could be assembled from pre-existing work (*e.g.* Boren 2005).
	Seabird burrowed soils	*Not mapped*	Not known whether mapping is available. Most sites will be on off-shore islands.
	Seabird guano deposits	*Not mapped*	DOC holds some data, which are considered good with a few exceptions (*e.g.* Kaikōura Headland)

[1] Dawson, 1988

[2] 210 occurrences; GBIF.org (06 August 2025) GBIF Occurrence Download https://doi.org/10.15468/dl.8tz2m9

[3] https://data.linz.govt.nz/layer/50303-nz-moraine-polygons-topo-150k/ and https://data.linz.govt.nz/layer/50304-nz-moraine-wall-polygons-topo-150k/

[4] Low producing grassland, gravel or rock, depleted grassland, gorse and/or broom, manuka and/or kanuka or matagouri or grey scrub.

4.2.3 Canterbury Climate Change Risk Assessment (CCCRA) classifications

Ecosystems were assigned to broad CCCRA categories. Ecosystems were primarily assigned on the basis of LENZ classifications, which take the form *letter: land environment name* (e.g. B: Central Dry Lowlands). These were adapted to consider PV and LCDB categories as follows:

- ***Alpine/high country:*** R: Southern Alps (non-forested types), T: Permanent Snow and Ice(all), P: Central Mountains (non-forested types), snow banks, tarns, moraines and acidic screes.
- ***Montane/hill country:*** P: Central Mountains (forested types), E: Central Dry Foothills (all), F: Central Hill Country and Volcanic Plateau (all), K: Central Upland Recent Soils (all), O: Western South Island Foothills and Stewart Island (all), S: Ultramafic Soils (all), Q: Southeastern Hill Country and Mountains (all), other LENZ categories where dominant canopy species is mountain beech. Outwash gravels, sinkholes, caves and all non-coastal cliffs, scarps and tors.
- ***Lowland/Coastal:*** B: Central Dry Lowlands (all), I: Central Poorly Drained Recent Soils (all), J: Central Well Drained Recent Soils (all), L: Southern Lowlands (all), M: Western South Island Recent Soils (all), N: Eastern South Island Plains (all); all coastal cliffs, scarps and tors and dunelands.
- ***Freshwater:*** Where LCDB is herbaceous freshwater vegetation (all LENZ categories), riparian areas, river areas, areas designated as lakes or ponds.
- ***Aquatic coastal/marine:*** All coastal wetlands and herbaceous saline vegetation.
- ***Wetland:*** Wetlands, including those that are labelled as successional/degraded (all LENZ categories) except coastal wetlands.
- ***Unknown:*** Most instances where LENZ category was "NA" unless the vegetation type was indicative.

4.3 Ecosystem mapping results

Seven-hundred and sixty-five ecosystems were identified in this project. An overview of the mapping undertaken in this project is presented in **Figure 2**. Ecosystem mapping undertaken in this project is best viewed through the geodatabase accompanying this report. Most ecosystem names reflect their dominant vegetation type (derived from LCDB and/or PV) and their LENZ level 2 category (a one-letter, -one-digit code, e.g. P2). A smaller subset of ecosystems, such as wetlands and NUEs, are not accompanied by LENZ information.

A second version of this dataset was generated, that additionally included sensitive datasets. This dataset has not been made available with this work. However, it was used to generate all metrics throughout this work, including exposure, sensitivity, adaptive capacity and, ultimately vulnerability. A full list of the ecosystems is provided in the ecosystem exposure tables in **Appendix 4**.

We have identified two versions of many ecosystem types in this mapping – a "standard" version, which is assumed to be in a relatively good state, as PV and LCDB align, as well as a "degraded or successional" version where an earlier successional stage is recorded in the LCDB than indicated by PV mapping (all designations as per **Appendix 2**). All calculations have been run for standard and successional ecosystem versions as independent ecosystems, as intact ecosystems are of greatest interest to the project team. However, if many degraded patches of this ecosystem exist, it is likely that they would cumulatively hold some value, and thus, together, reduce the vulnerability of that ecosystem.

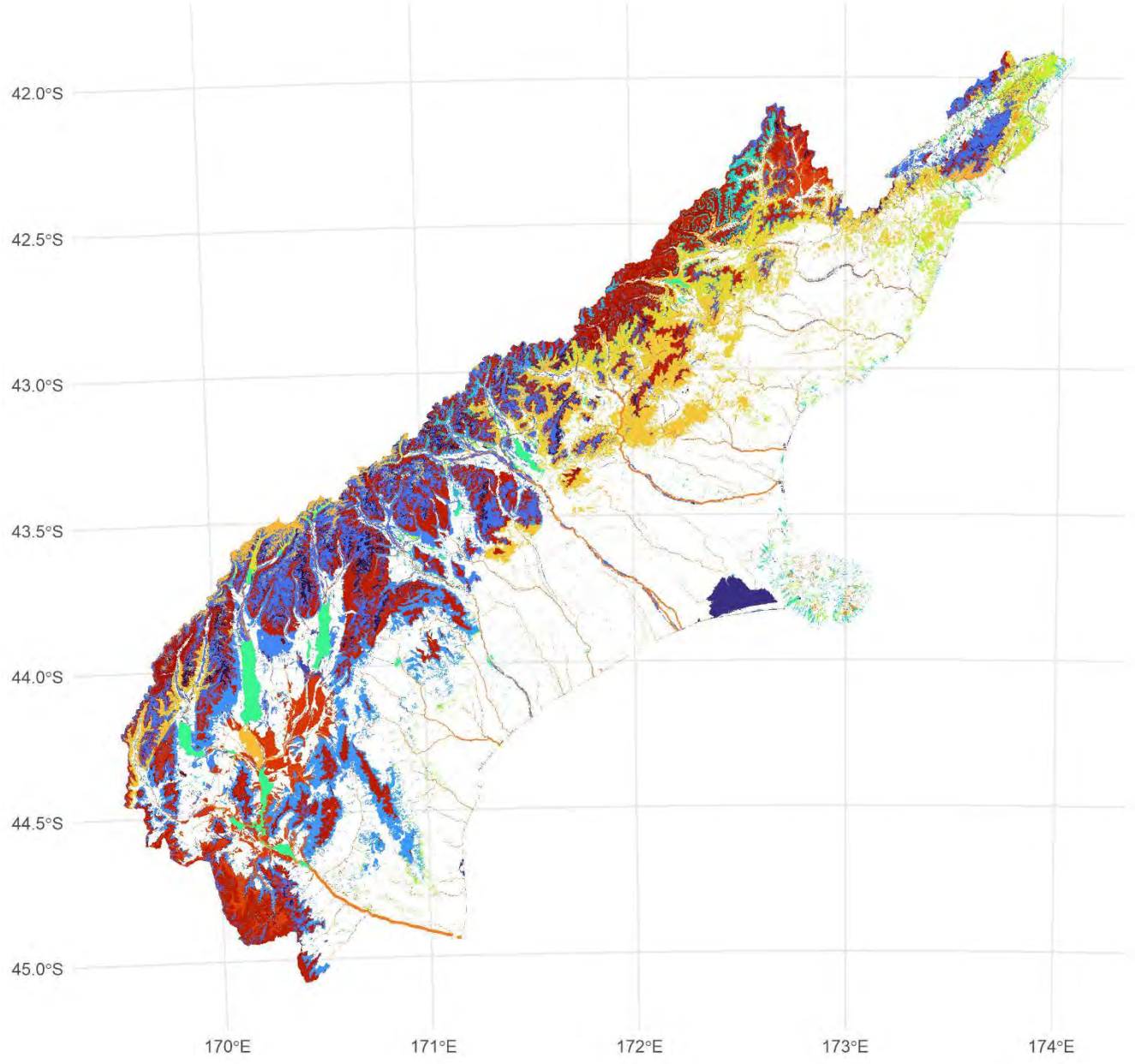


Figure 2—Ecosystem mapping in Waitaha Canterbury undertaken in this project. Each colour represents a unique ecosystem type. Ecosystems are too numerous to provide a legible legend. Ecosystem mapping undertaken in this project is best viewed through the geodatabase accompanying this report.

4.4 Discussion of methods and limitations

Our ecosystem mapping for this project is the first of its kind in Waitaha Canterbury. This work constitutes the most comprehensive ecosystem mapping ever attempted for the whole region. The work has brought together of a wide array of datasets, and no prior effort has attempted to reconcile well-known ecosystem mappings such as LENZ, PV and LCDB. Additionally, the mapping of NUEs is generally underdeveloped in Aotearoa New Zealand. This is the first work that we know of to assess the data sources available to map NUEs in the region, and provide mapping for NUEs in Waitaha Canterbury.

We consider that the ecosystem mapping presented here should not be considered conclusive and requires its own focussed project. The delineations of ecosystems have substantial influence on the outcomes of climate change vulnerability modelling. Some relevant considerations when using the mapping in this project include:

- Many ecosystems have been inconsistently mapped within base data layers. For example, "herbaceous freshwater vegetation" in inland areas has been used to map wetlands in some geographic areas in the LCDB. However, in most districts, this ecosystem is not mapped despite equivalent habitat occurring. This omission does not represent true absence of this ecosystem in those areas.
- Some datasets have a coarser resolution than others. For example, the potential vegetation layer has broad, climatically-based mapping. In contrast, the LENZ dataset is based on datasets including soils, which is very detailed mapping. This can result in inaccurate ecosystems where misalignment occurs[1], particularly at natural margins of ecosystem types.
- The dataset includes many ecosystem "slivers" that are not representative of real ecosystems, but rather indicates slight variations in mapping lines between data, which would ideally be reconciled within a dedicated mapping project (**Figure 3**).
- Future work should ensure that all relevant "Singers and Rogers" ecosystems (Singers and Rogers, 2014) and wetland types (Johnson and Gerbeaux, 2004). are represented and differentiated. It is unlikely that all important or unique ecosystems in Waitaha Canterbury have been mapped.
- A balance had to be struck between detailed, ecologically-relevant ecosystem delineations and grouped ecosystems which could be more reliably mapped. This means that some ecosystems present in the dataset are mapped, as they are important, but are not reliably mapped (such as riparian zones). Others are collapsed into large groupings that may not represent true ecological diversity (*e.g.* most wetland types are mapped together, despite comprising different assemblages, occurring in different areas, and being formed through a variety of physical processes, that may affect their susceptibility to climate change.
- Ecosystems mapped include degraded (successional) versions of many ecosystems. However, the way in which these were defined was done relatively broadly, and could be improved.
- Some datasets are not publicly available and this has been dealt with by producing two datasets. However, some discrepancies between mapping versions may confuse users.
- The number of ecosystems for which projections were made was large. This broadly precluded the inclusion of tailored, expert-confirmed climate assessments and instead relied on automated calculations. Future work could include circulating the list of ecosystems to ecological specialists in various domains (flora, herpetology, avifauna, freshwater and invertebrate ecology) for comment. Ecosystem mapping could then be adjusted to ensure that important ecosystems of flora and fauna are adequately represented.

[1] For example, where a vegetation type would be strongly constrained by soil characteristics, but there are discrepancies between vegetation and soil mapping.

- The CCCRA classifications are inconclusive. Some LENZ categories and vegetative communities straddle these designations. Some NUEs also cannot be clearly categorised (*e.g.* cliffs, scarps and tors). Further, some areas do not have LENZ classifications.
- The work has not directly sought the opinions of Te Rūnanga o Ngāi Tahu. While ecosystems that are known to be notably important to tangata whenua (Wildland Consultants 2025) have been coarsely mapped, further work is required to ensure that ecosystems that are of particular conservation concern to iwi are adequately represented.

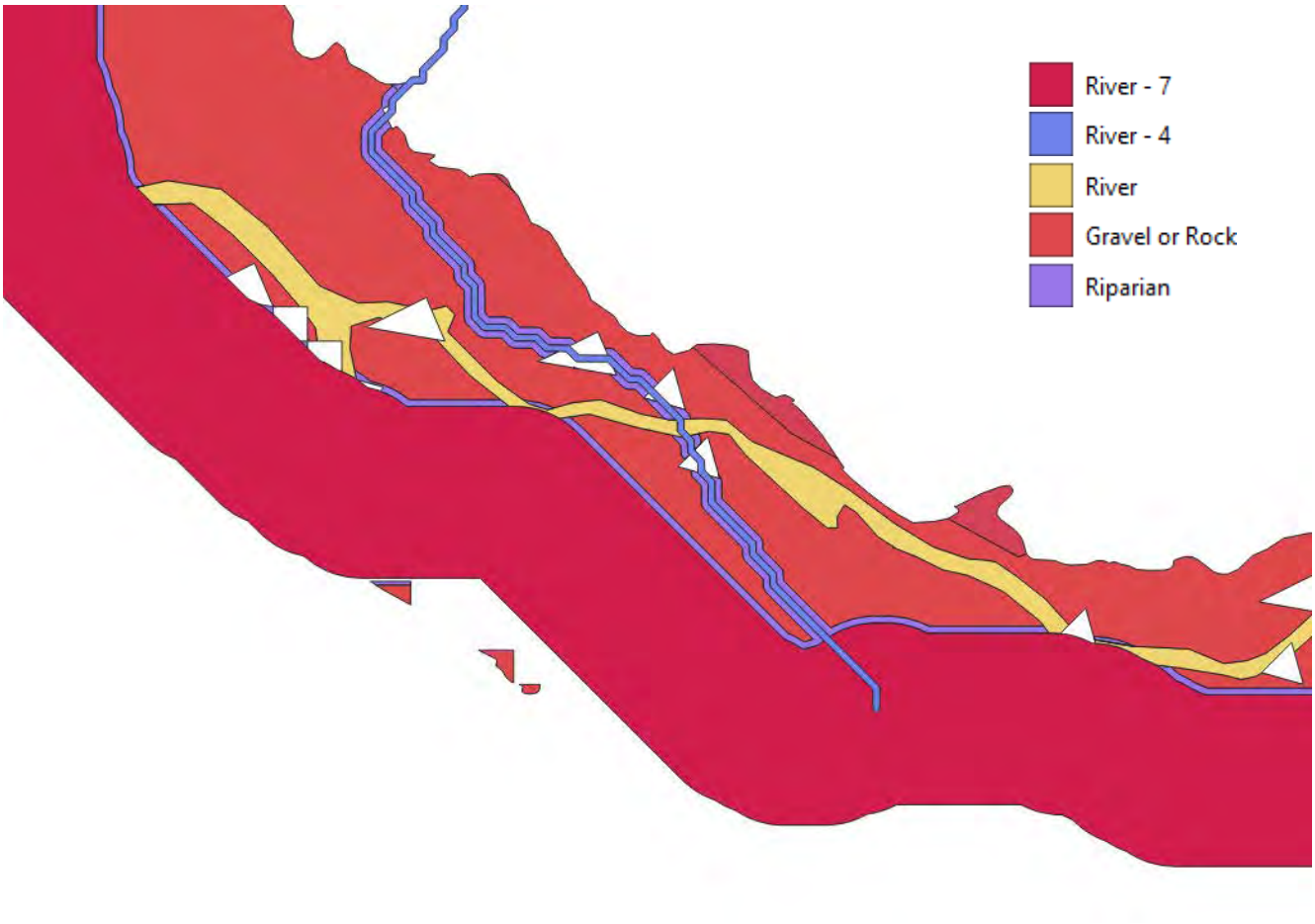


Figure 3—An example of ecosystem "slivers" that represent discrepancies in mapping among base datasets, rather than indicating real-world variation. In the image above, a 4th order river joins a larger, 7th order river (FENZ dataset). The LCDB has mapped the same river in a different location (labelled: River). This is likely to be accurate mapping of the same river, which has naturally shifted course between the two mapping projects. Likewise, riparian areas were broadly modelled here, as these are partially captured in the LCDB (Gravel or Rock). Both mapped rivers and braidplain ecosystems are, in this case, subject to substantial fragmentation which does not represent true ecological pattern.

5.0 Climate change exposure

5.1 Data

5.1.1 Climate change hazards

In this project, the impact of hazards (magnitude, frequency, and/or persistence of hazard events, as relevant) was predicted for each ecosystem in Waitaha Canterbury under a changing climate. Hazards assessed were:

- Storms/wind
- Extreme temperatures
- Precipitation
- Drought
- Coastal inundation
- Coastal erosion
- Flooding
- Increasing landslides/soil erosion
- Wildfires
- Invasive plant species

Definitions

Climate change hazard denotes the mechanism by which climate change affects ecosystems, such as "extremely high temperature".

A ***climate variable*** is how hazards are measured such as "number of very hot days (>30°C)" or "temperature on the hottest day of the year".

A climate change hazard can be measured using multiple climate variables.

5.1.2 Data sources

The following data sources have been used in this work:

- ***Region extent.***
- ***Territorial authority.*** Territorial Authority 2025 was downloaded from Stats NZ.[1]This dataset is the definitive set of territorial authority boundaries as at 1 January 2025.
- ***NIWA AR6 downscaled data.*** Most climate projections for this project were based on data provided by Gibson *et al.* (2024a, 2024b). These projections were created using six global models, published as part of the Intergovernmental Panel for Climate Change **(IPCC**) Sixth Assessment Report in 2021, merged into a model ensemble and downscaled to provide Aotearoa New Zealand-specific projections at a 5km grid by the National Institute of Water and Atmospheric Research (**NIWA**; Taihoro Nukurangi)[2]. The precise layers used are provided elsewhere in this report.
- ***New Zealand Coastal Change Dataset (NZCCD).*** This coastal change dataset for Aotearoa New Zealand provides nationwide coverage of coastal erosion and accretion patterns from the 1940s to the present day (Tuck *et al.* 2024). The rate of coastal change (m/yr^{-1}) is calculated using an analysis of aerial photos and satellite imagery. The data are generated through a nationally consistent, rigorous process. The data is freely available for download and is a point layer with a fine spatial resolution.
- ***NZ Sea Rise.*** This dataset provides the estimated sea rise projections described by Naish *et al.* 2024, which are corrected for localised vertical land movement around the coast. This means that the data provides estimates of sea-level rise relative to the local landmass, which is most ecologically relevant. This data is provided for individual locations, rather than calculated for all coastal locations. The use of this data is encouraged by MfE (2024). These projections

[1] https://datafinder.stats.govt.nz/layer/120963-territorial-authority-2025/

[2] https://climatedata.environment.govt.nz/files/index.html.

combine the IPCC AR6 sea-level data (downscaled to Aotearoa New Zealand). 'NZSeaRise_proj_vlm.csv' provides projections that include estimates of local VLM.

- ***NZ 8m Digital Elevation Model*** (2012). [1] This dataset indicates elevation at a relatively coarse scale.
- ***Sea-draining catchments.*** This dataset, provided by MfE provides boundaries for catchments that drain to the sea. It is extracted from the Freshwater Ecosystems of New Zealand (**FENZ**) v1.0 geodatabase.[2]
- ***NZ Local River Names***. The REC2 v5 layer was downloaded from NIWA. [3]
- ***New Zealand Land Resource Inventory*** (**NZLRI**). From this dataset, the erosion layer was used.
- ***Invasive species distributions.*** Species Distribution Models (**SDM**s) were produced by Manaaki Whenua in collaboration with ECan for 982 potentially invasive terrestrial plant species for the current and 2070 climates, following Etherington *et al.* (2022). Projections based on climatic fundamental niche have been made at a 30 arc-second resolution (~1 km^2). Projections were made using CIMP 5 climate data (*i.e.* an older model generation than the climate data used in this project), and incorporate all Relative Concentration Pathways (**RCP**s) available (2.6, 4.5, 6.0, and 8.5).
- ***District-wide flood models.*** Flood modelling investigations were undertaken by ECan, Waimakariri District Council, and Selwyn District Council for selected areas of the region. These layers represent projections of inundation depths during flood events of a given magnitude. Details of the modelling methodology and sources of uncertainty can be found in the associated technical reports.
- ***Coastal Flooding*** (NIWA 1% annual exceedance probability (**AEP**) models; Paulik *et al.* 2023). These data represent Aotearoa New Zealand's modelled extreme sea level flooding under current climatic sea conditions; plus, relative sea level rise up to 2m above present-day mean sea level in 10 cm (0.1 m) increments. 1% AEP means conditions that have a 1% chance of occurring in any given year (and average likelihood of occurring once every 100 years) – in the case of coastal flooding, these conditions are likely to happen during a storm event with large tides, waves and storm surge.

5.2 Methods

A schematic of the workflow used to bring data together to map climate change exposure is provided in **Appendix 1**.

5.2.1 Temperature and precipitation

A simple framework was developed to generate exposure rasters for those hazards that are directly driven by climate (storms/wind, extreme temperatures [hot and cold], precipitation and drought).

Climate data (NIWA AR6 downscaled) were loaded into R statistical programming software, together with shapefiles of districts and regions. Climate variables included for each hazard are outlined in **Table 3**. In each case, data were taken for the base period (1995-2014) as well as future projections for SSP 3-7.0 and 2-4.5 for the periods 2041-2060 and 2080-2099. All data were transformed to one Coordinate Reverence System (**CRS**; 4272 New Zealand Map Grid [**NZMG**]), and cropped to the extent of Waitaha Canterbury.

Data for each climate variable were visually inspected in base and future periods to identify spatial and temporal trends. To calculate exposure, climate layers needed to be transformed into binary layers using a threshold. Thresholds represent the level at which the variable is considered to pose a climate

[1] https://data.linz.govt.nz/layer/51768-nz-8m-digital-elevation-model-2012/
[2] https://data.mfe.govt.nz/layer/99776-sea-draining-catchments/
[3] https://data-niwa.opendata.arcgis.com/datasets/NIWA::nz-local-river-names-rec2-layer/about

change threat in Waitaha Canterbury (for each climate predictor). The method for identifying thresholds was a qualitative assessment of the data by an expert ecologist[1]. Thresholds used for each layer are provided in **Table 3**. Data used to support these thresholds are presented in **Appendix 3**.

Where multiple variables were used to represent one hazard, the binary layer represents areas where one or more thresholds are exceeded (unless explicitly stated). Binary layers were exported GeoTIFF files to enable further analyses.

Many of these methods were also used for the following hazards:

- Coastal inundation.
- Coastal erosion.
- Flooding.
- Landslides/soil erosion.
- Wildfires.
- Plant invasion.

However, more complex methodology was required. The additional methods used are expanded upon below.

[1] This process could be substantially improved if known threshold were drawn from historic events. For example, the level of precipitation experienced in years declared as droughts, due to notable ecosystem responses could be used as the threshold. However, for many climate change factors, this type of information is unavailable, particularly at the ecosystem scale. In this context, our methodology for threshold selection is in line with other assessments. For example, Brumby *et al.* (2025) used some standardised thresholds and some expert knowledge.

Table 3—Climate hazards and variables used in this analysis. Areas of Waitaha Canterbury that are exposed to each hazard are those that exceed one or more of the thresholds in the right-most column. Δ denotes values that are presented as changes relative to the baseline, rather than absolute units. Data used to support these thresholds are presented in **Appendix 3**.

Hazard	Explanation of change in Waitaha Canterbury	Variable	Timing	Current trends and predicted changes	Unit of change data	Threshold used
Storms/wind	In Waitaha Canterbury, the windiest period typically occurs during the spring months. During this time, the region experiences increased wind activity due to the strengthening of westerly winds, which are prevalent in the Southern Hemisphere. These winds are further intensified by the Southern Alps, leading to the "nor' wester"—a warm, dry, and often strong wind descending from the mountains. Stronger, more frequent winds driven by climate change can damage vegetation, alter habitat structure, and increase treefall. Large windthrows can reshape entire ecosystems. Winds can also disrupt animal behaviour such as migration. Strong winds can spread invasive species and wildfires.	Strong wind (99th percentile)	Spring	Currently, extreme wind events are most common throughout the alpine zone. Projections indicate that wind may reduce in these areas, with slight rises predicted in all other areas.	Δ %	5% increase
		Number of windy days (>10m/s)[1]	Spring	Currently, windy days are most numerous in the alpine, as well as montane areas and intermontane basins. Moderate increases are predicted throughout most areas.	Δ days	6 or more additional days
Rainfall (annual/seasonal)[2]	Waitaha Canterbury ecosystems experience varied patterns and quantities of precipitation. Peak rainfall is typically experienced in montane/alpine areas in the winter as orographic influences on the weather in Canterbury are very strong (Macara 2016). These rainfall	Number of rainy days (>=1mm)	Annual	Currently most rain falls in the alpine, with least rainfall on the coast and in the Mackenzie Basin. The number of rainy days will reduce in most parts of Waitaha Canterbury, with the greatest change (fewer rainy days) happening in the intermontane basins and foothills.	Δ days	10 fewer rainy days annually
		Heavy rainfall (99th percentile)	*Annual*	*Not used -- instead under flooding.*		
		Total rainfall	Summer	Summer rain is currently greatest along the main divide. Decreases are predicted along the divide, with the Mackenzie basin looking most affected	Δ mm	Ten or more ml change over the season.

[1] 10 m/s is equivalent to 5 on the Beaufort scale (fresh breeze; small trees sway, waves break on inland waters).

[2] Effects of precipitation changes other than extreme events such as flooding or drought.

Hazard	Explanation of change in Waitaha Canterbury	Variable	Timing	Current trends and predicted changes	Unit of change data	Threshold used
	patterns strongly influence the distribution of ecosystems throughout the region.			by reductions in precipitation. Increases in summer rain are predicted in the lowlands.		
			Winter	Winter rainfall follows the same orographically driven trends as summer rainfall. Future projections are the inverse of those predicted over the summers-- more rain on main divide, and most of plains getting less, particularly the foothills and the southern coast.	Δ mm	Ten or more ml change over the season.
		Average relative humidity (RH)	*Annual*	*Annual RH has a low level of change, with no change greater than 3%. Variable not considered further.*		
Drought	Droughts in Waitaha Canterbury, most commonly occur during late summer and early autumn—especially from January to March. However, the timing and severity can vary depending larger climate drivers like **ENSO** (El Niño–Southern Oscillation). Droughts often continue into early autumn if rainfall remains below average. Intensifying droughts stress plants and reduce water availability, leading to vegetation die-off and shifts in species composition. They also disrupt food webs, reduce fauna populations, and increase the risk of wildfires that further transform ecosystems.	Number of dry days (<1mm)	Summer	Currently the number of summer dry days are highest on the coast and the plains. Projections indicate that this will change in different ways, with the number of dry days increasing in some areas (*e.g.* montane areas in the Mackenzie District and the headwaters of the Waiau/Clarence River), and reducing in others (*e.g.* the coast and the Mackenzie Basin.)	Δ days	3 or more additional summer dry days
		Potential Evapotranspiration Deficit (PED)	Summer	PED is currently highest in the low plains and the Mackenzie Basin. Future projections indicate greatest increases in Potential evapotranspiration deficit (**PED**) in the lower montane/foothills areas throughout the region, as well as in the Kaikōura District.	Δ mm	120 or more additional mm of PED

Hazard	Explanation of change in Waitaha Canterbury	Variable	Timing	Current trends and predicted changes	Unit of change data	Threshold used
Extreme temperature (hot)	An increased frequency and severity of extreme hot temperature events are anticipated in Waitaha Canterbury and will occur in the summer. Extremely high temperatures will affect all ecosystems. Alpine species will be driven southward or to higher elevations. Ecosystems with limited options for mobility will suffer a "thermal squeeze," where rising temperatures exceed their tolerance thresholds. Warmer water temperatures in rivers and lakes will promote the proliferation of cyanobacteria, leading to eutrophication and reduced oxygen levels. The effect of air temperature on ecosystems can be direct (which would be adequately captured by the above). However, many effects are likely to be indirect, driven by, for example, temperature acting on the persistence of ice and snow and water temperature, both of which can have more nuanced responses to climate change.	Number of hot days (>25°C)	Summer	Currently most hot days are on the low plains and in the Mackenzie. Under future scenarios, these will increasingly expand inland. Intermontane basins will be particularly subject to change. Coastal areas will experience less change.	Δ days	5 or more additional hot days
		Number of very hot days (>30°C)	Summer	Currently much of Waitaha Canterbury experiences a couple of very hot days, with Selwyn and Timaru low plains most affected. Under climate change, the number of very hot days will increase in many districts. Marlborough and Waimakariri will experience the greatest changes.	Δ days	5 or more additional very hot days
		Temperature on the hottest day of the year	Summer	The temperature on the hottest day of the year is currently strongly driven by elevation. Future projections include universally increasing temperatures, although areas around Aoraki Mt Cook have significantly larger responses than other parts of the region.	°C	4°C hotter
Extreme temperature (cold)	A decreased frequency and severity of extreme cold temperature events are anticipated in Waitaha Canterbury in the winters. This will affect ecosystems through direct effects such as extending growing seasons, facilitating the expansion of less cold-specialised species, and leading to a decline in frost-triggered processes. Many ecosystems will also face indirect effects as snowmelt timing and quantity changes water flow and thus water supply and temperature regulation.	Number of frost days (<0°C)	Annual	Highest numbers of frost days are positively correlated with altitude currently. Future projections indicate lower numbers of frost days across Waitaha, but particularly in alpine areas. Aoraki Mt Cook is uniquely affected, and may lose over 100 frost days a year under severe scenarios.	Δ days	Losing 50% or more of current frost days
		Average daily air temperature range	Winter	Very low levels of change – variable considered uninformative and dropped.	Δ°C	
		Temperature on the coldest day of the year	Annual	Current trends are strongly driven by elevation. Predicted changes are most pronounced at highest elevation, particularly around Aoraki Mt Cook. Lowest changes are predicted for the lower plains and Te Pātaka o Rākaihautū / Banks Peninsula.	Δ°C	3°C warmer
		Mean temperature	Spring	Current trends are strongly driven by elevation. Predicted changes are most pronounced at highest elevation, particularly around Aoraki Mt Cook. Lowest changes are predicted in the intermontane basins.	Δ°C	3°C warmer
		Snow/ice cover: Number of frost days (<0°C) x Total rainfall	Winter	This approach was considered too speculative and was removed from the analysis.		

Hazard	Explanation of change in Waitaha Canterbury	Variable	Timing	Current trends and predicted changes	Unit of change data	Threshold used
Coastal inundation	Sea levels in Waitaha Canterbury are expected to rise, however local variation in the level of risk is expected. In areas experiencing land subsidence, such as parts of Christchurch and Lyttelton Harbour, relative sea-level rise could reach double the rate in stable land areas.[1] Rising sea levels cause more frequent coastal inundation, which drowns wetlands, erodes shorelines, and pushes saltwater into freshwater habitats. These changes force species to relocate, reduce breeding and feeding areas, and can collapse sensitive coastal ecosystems.	NZ Sea Rise (with VLM)	NA	Sea level rise is predicted to vary along the Waitaha Canterbury coast. This is discussed further in section 5.2.3.	m	NA
		NIWA AEP 1% model	NA	Coastal inundation under an extreme (100-year) event depends on the level of seas level rise. The greatest inundation is expected with a greater rate of sea level rise.	Mapped area	NA
Coastal erosion	Coastal erosion in Waitaha Canterbury is projected to intensify over the coming decades due to rising sea levels, land subsidence, and increased storm activity. However, there are accretion as well as erosion zones. The majority of the Canterbury Bight coastline is experiencing long-term erosion (Kirk, 1967). Increasing coastal erosion under climate change wears away beaches, dunes, and cliffs, destroying habitats that many species rely on. It also exposes inland ecosystems to saltwater intrusion and flooding, reducing their stability and biodiversity.	Aotearoa's Coastal Change Dataset	NA	Erosion has historically been greatest along the Canterbury Bight and at Motunau; areas around Christchurch and Kaikōura have been accreting. Fure This dataset does not make projections under climate change.	m	Historic coastal change <0.[2]
Flooding	Flooding in Waitaha Canterbury is projected to become more frequent and severe due to climate change however the areas affected by	Waimakariri and Selwyn flood modelling[3]	NA	Greater flooding depths associated with existing riverbeds, although rivers breaking out of existing flow paths to affect other portions of the region are considered. Lower plains are modelled to have greater risk of flooding	m of flooding (under various scenarios)	A 200-year flood would result in ≥50cm of flooding.

[1] https://www.ecan.govt.nz/get-involved/news-and-events/2023/new-study-sheds-light-on-sea-level-rise-in-christchurch

[2] Historical rates of coastal erosion may not predict future erosion rates under climate change because rising sea levels can increase the frequency and intensity of storm surges, leading to altered erosion patterns. Further, changing wave patterns and ocean currents, driven by shifting climate conditions, can alter coastal dynamics in ways not captured by past data.

[3] Data not available for other districts.

Hazard	Explanation of change in Waitaha Canterbury	Variable	Timing	Current trends and predicted changes	Unit of change data	Threshold used
	flooding will be localised. For example, the combination of sea-level rise and more frequent storm surges is expected to exacerbate coastal flooding. Winters in many parts of Waitaha Canterbury are expected to be wetter, increasing the likelihood of riverine and surface flooding. More frequent and intense flooding can uproot vegetation, alter soil structure, and reshape river and wetland habitats. It also disrupts fauna by destroying nests and food sources, spreading pollutants, and enabling invasive species to spread.	Heavy rainfall (99th percentile), combined with catchment size; location in catchment and distance to river.	Winter	Heavy winter rainfall will increase in some catchments and reduce in others. Waitaki district particularly increases in heavy winter rainfall with climate change. Approach is further discussed below.	Δ mm (calculated at catchment level)	0
					River segment placement	In the lowest 1/3 of the river
					Distance to river (km)	< 3km
					River order	5 or larger
Landslides/soil erosion[1]	Climate change is expected to increase the frequency and severity of landslides and erosion in Waitaha Canterbury, driven by more extreme precipitation events. More frequent landslides and soil erosion strip away vegetation and nutrient-rich topsoil, reducing habitat quality and plant regrowth. These disturbances also affect recipient aquatic environments, increasing sediment loads and decreasing the quality of aquatic habitats, as well as burying some habitats.	Highly Erodible Land*	NA	Data not available		
		NZLRI erosion layer	NA	NA	NA	Erosion degree moderate (2) or above, any erosion form.
		Heavy rainfall (99th percentile)	Winter	Greatest increases in extreme rainfall events are expected in alpine and montane areas.	%	Most severe rainfall events are 5% more severe
Wildfires	A warmer climate is expected to increase the frequency and intensity of wildfires globally. However, patterns of fire risk are nuanced across Waitaha Canterbury due to shifting summer time rainfall patterns. Increasing wildfires under climate change destroy vegetation, alter habitat structure, and can permanently shift ecosystems toward more fire-tolerant species. They also	Fire season length*	NA	Data not available		
		Fire Weather Index Modelling	Summer	Current fire risk is highest in the Mackenzie Basin, the Waitaki, in inland Hurunui and coastal areas of the Ashburton District. Predicted changes are not substantial, with similar areas being susceptible to fire under all scenarios. However, under both the SSP 2– 4.5 and 3 – 7.0 scenarios, wildfires may affect more areas in the mid-century as temperatures rise, and may reduce again late century when summertime precipitation increases.	Fire weather index (**FWI**) units	1.7

[1] Approach taken was as per Smith *et al.* (2023)

Hazard	Explanation of change in Waitaha Canterbury	Variable	Timing	Current trends and predicted changes	Unit of change data	Threshold used
	disrupt food webs, reduce fauna populations, and degrade soil and water quality long after the flames are gone.					
Plant invasion	A changing climate is predicted to alter the distributions of various invasive plant species. Climate change can help invasive plant species spread by creating conditions (like warmer temperatures and disturbed habitats) that favour their growth over indigenous plants. As invasive plants take over, they outcompete indigenous species, disrupt food webs, and reduce overall ecosystem biodiversity.	Old Man's Beard (*Clematis vitalba*)	NA	Most parts of Waitaha Canterbury are climatically suitable except high alpine areas. Distribution predicted to remain similar, with some upslope expansion in alpine areas.	Habitat suitability	0.8
		Khasia berry *(Cotoneaster simonsii*)		Waitaha Canterbury lowlands are climatically suitable> Montane and alpine areas unsuitable. Upslope expansion expected in foothill areas. Some climatic range contraction may occur on the southern coast.		
		Russell Lupin (*Lupinus polyphyllus*)		Most parts of Waitaha Canterbury are climatically suitable except high alpine areas. Distribution predicted to remain similar, with some upslope expansion in alpine areas. Some climatic range contraction may occur on the southern coast.		
		Lodgepole pine (*Pinus contorta*)		Most parts of Waitaha Canterbury are climatically suitable except high alpine areas. Distribution predicted to remain similar, with some upslope expansion in alpine areas. Some climatic range contraction may occur in coastal areas.		
		Douglas fir (*Pseudotsuga menziesii*)		Most parts of Waitaha Canterbury are climatically suitable except high alpine areas. Distribution predicted to remain similar, with some upslope expansion in alpine areas.		

5.2.2 Flooding

Flooding exposure was assessed through a two-pronged approach – a broad approximation of flooding risk was created for the region. Then, where more accurate district-level flooding layers were available, these were incorporated.

Regional flood layer

The climatic variable taken to represent changes in flooding was winter heavy rainfall (99th percentile). We predicted changes in the level of flooding at the catchment level by summing the value of all pixels in the heavy rainfall raster across the catchment area. Then, we identified river segments that are most likely to be affected by heavy rainfall event changes. First, we identified the catchment that each river segment was located in. Then we weighted the influence of catchment-level changes by calculating the "placement" of each reach between the source and sea[1]. We limited the analysis to include only larger rivers (river order 5 or higher) and those that had a placement of greater than 0.3[2]. Finally, we multiplied the placement of the river segment by the catchment-level change in heavy rainfall to generate a river segment -specific change in flooding potential.

We then generated a binary exposure layer by taking river segments that satisfied the criteria, and had a positive value (*i.e.* river segments that occurred in catchments where heavy rainfall events are expected to increase under each climate scenario). The final layer considers all areas within 3 km of these river segments to be exposed to increased flooding.

The output does not consider absolute rainfall. Instead, it presents changes in predicted heavy rain events relative to current conditions. This means that areas that flood currently should be considered as likely to flood in the future.

Incorporating district-wide flood layers

The regional flood layer was merged with existing district-level flood layers. We identified those areas prone to flooding that had a predicted flooding depth of 0.5m or more in the 200year-event. These areas were added to the regional flood layer. Only one climate projection was available: RCP 8.5[3] rainfall for 2081 - 2100.

5.2.3 Coastal inundation

Sea level rise was extracted from the NZ Sea Rise dataset for all Waitaha Canterbury coasts. We identified the regional median predicted sea level rise under each scenario. Then, we used the closest available NIWA AEP 1% model coastal flooding scenario. (**Table 4**).

Table 4—Predicted sea level rise in each climate scenario and coastal flooding scenario used.

Shared Socioeconomic Pathway (SSPs)	Time period	Regional median sea level rise	NIWA AEP 1% scenario used
3-7.0	2041-2060	0.27 m	30cm
	2080-2099	0.67m	70cm
2-4.5	2041-2060	0.25m	30cm
	2080-2099	0.55m	60cm

[1] Placement was calculated as the distance to the headwater of the reach divided by the total length of the river. This resulted in a value between 0 and 1, where 1 is at the river mouth.

[2] Ie, those that were a minimum of 30% of the rivers length from the source

[3] A standard for CIMP5 climate data that has now been discontinued.

5.2.4 Coastal erosion

We used the NZCCD dataset, and extracted the linear regression rate (**LRR**) of change (m/yr) for each point[1]. We turned the data into a raster of the same dimensions as the climate data used throughout this project. The value of each pixel represented the average of all LRR points within the cell. An NA was generated for each cell where there are no points.

The LRR raster was then transformed into a binary exposure layer using a threshold of zero – *i.e.* all areas with a historic trend of erosion are considered exposed to erosion under a changing climate.

5.2.5 Landslides/soil erosion

The NZLRI attribute erosion was used. This assessed the severity of numerous erosion forms (*e.g.* soil slip, earthflow or slight sheet erosion) on a scale of 0 to 5 (0 = negligible, 1 = slight, 2 = moderate, 3 = severe, 4 = very severe, 5 = extreme). We simplified this to find the maximum level of erosion, irrespective of erosion form.

Any area was considered exposed to climate-induced erosion/landslides where the severity of any erosion type was moderate or greater, *and* where the most severe rainfall events are predicted to be 5% more severe than under the current climate.

5.2.6 Wildfires

In Aotearoa New Zealand, wildfire risk is calculated using an altered version of the Canadian fire weather index (**FWI**) system, which is also used worldwide, including in Europe. The FWI is calculated using four atmospheric variables: temperature, precipitation, relative humidity, and wind speed (Melia *et al.* 2022), all of these are available from MfE. All of these are readily available climate data for current and future climates. The model itself is relatively complex, incorporating several sub models, including:

- Fine Fuel Moisture Code
- Duff Moisture Code
- Drought Code
- Initial Spread Index
- Buildup Index

We used the R package developed for the Canadian Forest Fire Danger Rating System (*cffdrs*). All climatic data was transformed into absolute values (rather than values relative to the current climate). A threshold of 1.7 was used to delineate fire-prone areas. This value was chosen based on an assessment of the FWI under current conditions.

5.2.7 Plant invasion

We selected five plant species that are considered to be problematic weeds in Waitaha Canterbury as per the Canterbury Regional Pest Management Plan 2018-2038 (**CRPMP**) or is declared an unwanted organism by the Ministry for Primary Industries (**MPI**). Invasive plant species were selected that are representative of a wide variety of growth forms:

- Old Man's Beard (*Clematis vitalba*. CRPMP: pest, sustained control).
- Khasia berry (*Cotoneaster simonsii*. MPI: unwanted organism).
- Russell Lupin (*Lupinus polyphyllus*. CRPMP: pest, sustained control).

[1] This is the historic rate of change, as predicted by the NZCCD.

- Lodgepole pine (*Pinus contorta*. CRPMP: pest where it has established by natural means outside of a plantation, progressive containment).
- Douglas fir (*Pseudotsuga menziesii*. CRPMP: pest, progressive containment).

We transformed habitat suitability scores (ranging from 0, not climatically suitable, to 1, highly climatically suitably) to a binary exposure layer in R, using a threshold of 0.8.

5.2.8 Exposure

Percentage exposed, for each ecosystem type per scenario was categorised using the criteria in **Table 5** (as per MfE's risk assessment guidelines). This was done separately for each hazard as well as for all hazards together (*i.e.* % ecosystem area exposed to more than one climate change hazard).

Table 5—Method used to assign exposure categories for ecosystems.

Category	% of area exposed per ecosystem type
Very high	>75% of ecosystem is exposed to the hazard
High	50-75% of the ecosystem is exposed to the hazard
Moderate	25-50% of the ecosystem is exposed to the hazard
Low	5-25% of the ecosystem is exposed to the hazard
Negligible	Less than 5% of the ecosystem is exposed to the hazard

5.2.9 Cumulative hazard exposure

Exposure to multiple climate hazards can weaken an ecosystem's ability to adapt and recover from any single threat. However, some ecosystems may be resilient to specific hazards if the ecosystem has evolved, or adapted in ways that allow it to withstand or recover from a key environmental stressor.

To assess the ecosystems that are exposed to the greatest cumulative hazard, we generated a map showing cumulative hazard exposure. This indicates the number of climate hazards present in each grid cell.

5.3 Discussion of methods and limitations

5.3.1 Strengths

We consider the mapping of climate change hazards in Waitaha that was undertaken in this project to be robust. The greatest strengths of this portion of this work include both the quality and breadth of climate change modelling sources that have been incorporated.

We have assimilated the most up-to-date climate change modelling from reputable institutions such as NIWA and MfE and have followed best practice guidelines in doing so. Climate projections, as radically downscaled for Aotearoa New Zealand, form the backbone of this portion of the work. These climate projections are based on unprecedented international collaboration in this space, with ensembles of the most accurate global circulation models (**GCM**s) used to inform the work.

An additional strength of this work is the bringing together of a very wide array of datasets to represent climate change hazards that are relevant to Waitaha Canterbury. In addition to typical data sources, such as NIWA's 1% AEP coastal flooding mapping, we have included a variety of datasets such as SDMs representing plant species invasions, historic rates of coastline erosion and district-level flooding models. This provides a more holistic view of climate change impacts than has been previously available. We have added to this novel modelling to supplement the works where existing datasets are lacking. This included modelling the FWI to make projections of fire risk and modelling how changes in

precipitation patterns interact with catchment sizes and exposure to those changes to make projections of future flood modelling. While this modelling can be improved in a variety of ways (described below), we consider that this work is a substantial improvement upon previous hazard projections that were previously available.

Finally, a substantial strength of this work has included the use of multiple climate variables to represent each climate change hazard. In particular, the variables chosen were selected by ecological specialists, where mechanistic pathways for ecological responses can be anticipated based on well-established scientific principles in the discipline.

Ecosystems respond to climate in complex ways, with some ecosystems responding to particular aspects of a hazard and not others. For example, the hazard of extreme heat was modelled using three variables: the number of hot days (>25°C) is closely associated with extended period of moderately elevated heat, which act cumulatively on ecosystems and can disrupt relative competitive efficiencies of species within communities; the number of very hot days (>30°C) represents conditions that may exert substantial physiological pressure on species in ecosystems, and result in disrupted ecosystem function. Temperature on the hottest day of the year represents whether ecosystems cross absolute temperature thresholds that lead to organism die-offs in some ecosystems. We consider that the use of two to four variables for each hazard provides additional understanding of climate change risks to ecosystems in Waitaha Canterbury.[1]

Further, the use of known mechanistic pathways comprises a major advancement in this area and is in line with international academic standards for climate change modelling. For example, a strong emerging trend in the academic literature includes the consideration of climate extremes, which are considered to have greater effects on ecosystem structure and function than climatic means. The climate variables used have been selected specifically for Waitaha Canterbury. For example, storms in the region are most severe in the winter, while dry strong winds can cause substantial damage in the spring.

This approach (using multiple variables to represent a particular hazard and selecting these based on known mechanisms of ecological response), sets this work apart from previous CCRAs, where climate hazards are only broadly modelled using arbitrary thresholds in climate means (*e.g.* Brumby *et al.* 2025).

5.3.2 Interpretation

This work uses relative rather than absolute values. That is, instead of indicating that an area currently has a mean annual temperature of 12°C and this value is predicted to rise to 14°C, our modelling would instead indicate that the predicted change is +2°C. This is in line with current standards of representing climate change data in Aotearoa New Zealand, including in the MfE climate projections map.

5.3.3 Limitations

While we identify substantial strengths in this portion of the work, we note several limitations. These should be considered when interpreting the projections made in this project:

- ***Underlying data.*** Modelling climate change continues to be an evolving field. Our projections for Waitaha Canterbury are only as good as the underlying data, which in some cases can themselves be unreliable. For example, GCMs are typically more accurate in their projections of temperature than precipitation (O. Truax, pers. comm., 2025). There are numerous

[1] We have avoided issues with spatial autocorrelation of variables by considering that the exceedance of any one variable threshold to represent hazard.

implications of this. For example, if precipitation patterns are inaccurately modelled by GCMs, our projections of fire risk may also be inaccurate.

- ***Availability of datasets.*** Some limitations in the present work arise as various datasets were not available for this project. Notably, we do not have adequate modelling representing snow cover. Existing CCRAs identify patterns in snow and ice cover as a major risk pathway. Further, snow cover has major implications both for local ecosystems (*e.g.* snowbanks, which are strongly driven by snow cover patterns) but also have significant downstream implications (*e.g.* snow cover patterns are responsible for freshets in Waitaha Canterbury's braided rivers and have substantial impacts on flora, fauna and geomorphology of these ecosystems in the lowlands). We acknowledge that this body of work could have been improved with the addition of datasets such as those concerning snow cover.
- ***Data security.*** Some datasets required obscuring, due to data sharing agreements. For example, the NIWA 1% AEP modelling (coastal inundation) have been generalised to a grid, rather than presenting the original intricate shapefiles that are driven by complex on-the ground patterns in geomorphology. This allowed the data to be anonymised, but reduces their utility.
- ***Exposure thresholds.*** Thresholds for each climate variable were chosen through expert estimation, drawing on expected patterns of climate change rather than on observed ecological responses to climate hazards. Thus, the thresholds are not scientifically grounded. Exposure threshold cannot be drawn from existing international scientific literature, as ecosystems responses to climate stressors depend on their structure and function, which is likely to differ by *e.g.* species composition. Datasets that would enable scientifically grounding the setting of relevant ecological thresholds in climate hazards in Aotearoa New Zealand do not currently exist. Our work provides useful guidance despite its limitations and is highly likely to be directionally accurate. However, future work experimental or field observational work identifying relevant threshold values in local ecosystems would be useful to more accurately reflect true ecosystem exposure extent.

These limitations do not detract from an otherwise very useful dataset created in this project. Instead, these require thoughtful consideration when using the data, and future iterations of this work should consider improving upon these aspects of the work. Further comments regarding the methodology for specific climate change hazards are provided below.

Flooding

No region-wide, pre-existing, dataset on flooding was available for flooding, therefore a custom model was created to fill this gap. This layer should be considered indicative only. It does not include variables that are commonly known to predict flooding patterns. For example, slope, permeability and geomorphology (among many other variables) shape how water accumulates and flows across a landscape. The non-binary output should be considered unitless as rates of water retention of various surfaces have not been considered. We consider that appropriate flood modelling needs to be incorporated in this portion of the work. New modelling of this type was very recently undertaken but was unfortunately not made available in time to be incorporated into these works: national flood hazard mapping now exists for 1%AEP nationally[1]. Future iterations of this work should include this data.

Existing district-level flood layers are intended to provide different information to other climate hazard layers – they identify significant flooding events under one climate scenario only (RCP 8.5 rainfall for 2081 - 2100). Thus, the risk under various climate change scenarios is not accurately represented.

[1] https://niwa.maps.arcgis.com/apps/dashboards/8c1db2b8e37841f29a57a38675388897

Overall, areas in Selwyn and Waimakariri appear to be more flood prone than the remainder of the region. This is because district-level flood layers exist for these areas and not because flood risk is greater in these areas. The district level data is substantially more reliable, including consideration of more flooding types, surfaces and geometries. Further, using heavy rainfall projections throughout the catchments of large rivers may not accurately portray flooding. Flooding in these rivers is mostly affected by alpine rainfall, particularly when this coincides with seasonal snowmelt, not by rain falling in the foothills or plains.

Coastal inundation

Portions of Waitaha Canterbury are expected to have much higher rates of sea level rise than others. Using median sea level rise means that our modelling thus underrepresents risk in some portions of the coast and overrepresents it in others.

Coastal erosion

No region-wide projections are available of coastal erosion rates under a changing climate – all available region-wide resources provide historical data. However, historic coastal erosion may not determine future trends, particularly with rising sea levels. Coastal erosion in New Zealand is projected to intensify due to climate change, primarily driven by rising sea levels and increased storm activity (MfE, 2024). Rising sea levels exacerbate coastal erosion by allowing waves to reach further inland, increasing the frequency and severity of erosion events. Nevertheless, it may be simplistic to assume that coastal erosion/accretion patterns will continue following historic trends in a changing climate. Climate drivers such as rising sea levels, shifting storm intensities, and changing sediment transport can alter the frequency and magnitude of coastal change cycles. Additionally, local geomorphic factors and human interventions—such as shoreline engineering (*e.g.* seawalls, groynes, and breakwaters), river damming, and habitat loss—can significantly modify sediment supply and coastal dynamics, making projections based solely on historical norms inaccurate. In fact, in some districts where future coastal erosion modelling has been undertaken, the outcomes are contrary to historical trends.

Existing coastal erosion datasets have been generalised from points to areas by setting the values of rasters to the nearest measured coastal erosion point. The extent of coastal erosion in any given location should be considered indicative rather than spatially accurate. The national coastal erosion database has significant gaps in Waitaha Canterbury.

Fire exposure

In this work, we have provided the first region-wide projections of climate induced fire hazards for the region. We used internationally established methodologies that are consistently used in Aotearoa New Zealand to calculate the FWI. However, we note the following regarding this approach:

- ***The use of averages.*** The approach uses averaged data over the summer period. However, fire events occur in abnormal conditions. Typically, this is provided as a danger class as well as an index number. The fire weather index can be categorised into 6 classes of danger[1]. In our work, the use of averages means that the FWI never exceeds low, and cannot be interpreted according to typical standards for this metric. Instead, the FWI values should be considered as relative to one another.
- ***Iterative nature.*** Fire likelihood is highly dependent on conditions that have developed over preceding days or weeks. Therefore, the FWI system calculations are designed to be used iteratively, with daily values dependent on prevailing weather and the previous fuel moisture

[1] Very low danger: FWI is less than 5.2. Low danger: FWI is between 5.2 and 11.2. Moderate danger: FWI is between 11.2 and 21.3. High danger: FWI is between 21.3 and 38.0. Very high danger: FWI is between 38.0 and 50. Extreme danger: FWI is greater than 50.

conditions. Achieving sequential day-data projections is not possible with existing climate change projections.

- ***Inclusion of climate only.*** Fire risk is strongly influenced by vegetation type and management, which are not accounted for here. Inclusion of land cover is challenging, as the ecosystem in a given location contributes to its fire risk, but so does the land cover in the landscape more generally, often affecting fire risk in complex ways.

Invasive species

Projections of invasive species based on fundamental climatic niche must be considered within their limitations. Therefore, the modelling of invasive species must be undertaken cautiously. Transferability of climate-based SDMs from native to invaded ranges (as here) can be poor. We particularly note that the SDMs used in this study do not consider non-climatic constraints. For example, none of the species considered in this work is likely to occur in intensively managed dairy farms, despite projections that these areas are climatically suitable. Limitations of this type of model Include:

- ***Possible overestimation or underestimation of realised niche.*** This SDM structure relies on correlative data drawn from the species' current occurrences—typically the realized niche—rather than the full range of climate conditions under which the species can actually survive (its fundamental niche). This mismatch leads to limitations in interpretation:
    - Models based on native-range data may capture only a subset of the environmental tolerances, potentially overlooking areas where the species could survive but has not colonized yet.
    - SDMs often overestimate the geographic extent of suitable habitat because they ignore non-climatic constraints such as land-use changes, habitat fragmentation, and biotic interactions like competition or host availability, which can render climatically suitable areas inhospitable. Without considering barriers like dispersal limitation or human-mediated land conversion, these models may project potential occupancy in regions that are never realistically accessible or supportive of viable populations.
    - Factors like dispersal barriers, absence of suitable host species (for pathogens or herbivores), and biotic interactions are usually not included in these models, meaning climate suitability projections may not translate to actual establishment in the field.
- ***No accounting for species evolution.*** Invasive species commonly undergo rapid niche shifts—either through adaptation or by encountering different environmental contexts in introduced areas—which violates a core assumption of niche conservatism integral to SDM projection.

6.0 Ecosystem vulnerability metrics

6.1 Data

The following data sources have been used in this portion of the work:

- ***The ecosystems layer.*** The complete ecosystem mapping dataset was used.
- ***NIWA AR6 downscaled data.*** This included potential evapotranspiration deficit (**PED**) and number of frost days (both per annum)
- ***Region extent.***
- ***LENZ***, category 3.
- ***Global Biodiversity Information Facility (GBIF)***. All occurrence data for plants, animals and fungi in Waitaha Canterbury were downloaded[1].
- ***New Zealand Threat Classification System (NZTCS).*** All assessment data were downloaded from nztcs.org.nz.

6.2 Methods

6.2.1 Ecosystem sensitivity and adaptive capacity criteria

A schematic of the way in which data were brought together overall is provided in **Appendix 1**.

Table 6 presents a summary of the sensitivity and adaptive capacity criteria that were used for this project, as well as the thresholds that were used for each criterion. Detailed methodology for each criterion is provided below.

Table 6—Summary of measures of sensitivity and adaptive capacity criteria for assessments of climate change vulnerability of ecosystems, and thresholds set in these analyses.

Aspect	Characteristic	Explanation	Threshold
Sensitivity	Geographic range	Small area of the ecosystem occurs within Waitaha Canterbury.	Total area of the ecosystem is <1.63 ha.
	Dispersal limited	Range-shift restricted: There is little or no availability of similar land environments within the climatic range of the ecosystem under the modelled climate[2]	An ecosystem is considered vulnerable if no areas exist under the most severe climate scenario (late-century, SSP 3-7.0) that meet the system's requirements.
	Natural rarity	Does the ecosystem represent a NUE?	The ecosystem represents a NUE.
	Isolated	Average geographic distance of discrete ecosystem patches.	Average distance >31 km.
	Interdependency	Dependence on landscape-level processes that have the potential to be disrupted by climate change. *E.g.* reliance on water provision from other ecosystems in the catchment.	Specialist assessment
	Notable species	Richness of At Risk and Threatened species.	Number of unique Threatened or At-Risk plants, fungi and animals recorded in the ecosystem is ≥ 6.
	Importance to iwi	Ecosystem, or species supported by the ecosystem is of high value to Te Rūnanga o Ngāi Tahu	Specialist assessment

[1] GBIF.org (16 July 2025) GBIF Occurrence Download https://doi.org/10.15468/dl.ngrbuj; https://doi.org/10.15468/dl.br7e6q; https://doi.org/10.15468/dl.prrvqj.

[2] This could mean that these are absent under future climates, or that similar land environments are not managed for indigenous biodiversity.

Aspect	Characteristic	Explanation	Threshold
Adaptive capacity	Climatic range	Ecosystem distribution with large climatic range -- annual Potential Evapotranspiration Deficit (PED) and number of frost days.	Potential evapotranspiration deficit (PED) range > 139 and range in the number of frost days is > 47.
	Heterogeneity	Large number of subtypes of an ecosystem.	Number of LENZ level 4 categories within the current distribution is ≥ 13.

6.2.1.1 Sensitivity: small geographic range

Ecosystems with small geographic ranges are more sensitive to climate change because any climate-related impacts can affect their entire area, increasing the risk of complete loss. Their restricted distribution also means that they have limited space to shift or adapt as environmental conditions change.

There was substantial variation in the size of geographic ranges of ecosystems, from 0.0000012 (coastal wetland – drain) to 287,352 ha (braided rivers; **Figure 4**). Ecosystems considered sensitive due to their small geographic range were those that had a cumulative area of < 1.63ha. These were within the smallest 20% of ecosystems.

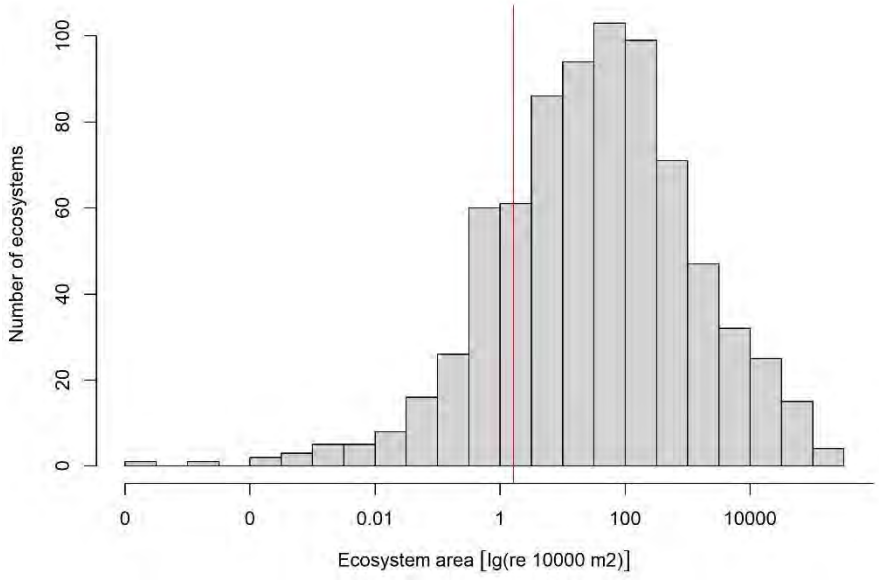


Figure 4— Ecosystem geographic-range distribution (ha): most ecosystems have a range between 2 and 120 ha, with a long tail toward very small ranges. The red line indicates the cutoff used for identifying sensitive ecosystems.

6.2.1.2 Sensitivity: dispersal limitation

It is well-established that species that are dispersal-limited are more sensitive to climate change because they cannot easily shift their ranges to track suitable environmental conditions as climates warm or cool. This is because species may become trapped in areas that no longer meet their physiological requirements, leading to population decline or extinction. Similarly, ecosystems that cannot adapt to climate change by moving or re-establishing elsewhere are more sensitive to climate change. When those conditions shift, the ecosystem can break down or be replaced by a different community.

We cannot measure an ecosystem's ability to move, but we can infer limitations based on the availability of suitable habitat within its climatic tolerances. If no appropriate environments exist nearby, dispersal and re-establishment are effectively constrained.

An ecosystem was considered to have impeded dispersal if no area is available that meets the criteria below under the most severe climate scenario (late-century, SSP 3-7.0):

- The Potential Evapotranspiration Deficit (PED) is greater than the maximum PED observed within the current distribution of the ecosystem in any part of its range.
- The number of frost days is lesser than the minimum number recorded for the ecosystem under current conditions in any part of its range.
- The LENZ Level 2 classification is the same as that of the current ecosystem. Some ecosystems did not have a LENZ category as they were separately mapped. These habitats were NUEs and freshwater habitats (both of which form in highly specific conditions) and thus were considered dispersal limited.
- The area is in indigenous vegetation.

18% of ecosystems did not meet these criteria and thus are considered dispersal limited.

6.2.1.3 Sensitivity: natural rarity

Ecosystems that are naturally uncommon are often limited to very specific environmental conditions, such as unique soils, microclimates, or hydrology. Because of this narrow ecological range, even small shifts in temperature or precipitation can push them beyond their tolerance limits, leading to loss of species or ecosystem collapse.

Ecosystems that we identified as a NUES by Williams *et al.* (2007) are considered to be sensitive to climate change due to their natural rarity.

6.2.1.4 Sensitivity: isolated

Ecosystems with isolated patches are more sensitive to climate change because species and ecological processes cannot easily move or spread between patches. This limits recolonisation and adaptation, increasing the risk of local extinctions and ecosystem collapse as conditions change.

We calculated the average distance between habitat patches (**Figure 5**). The average distance across all ecosystems was 38km. We considered that ecosystem with an average distance of more than 31km between habitat patches were isolated. These ecosystems were those in the top 40% average distances.

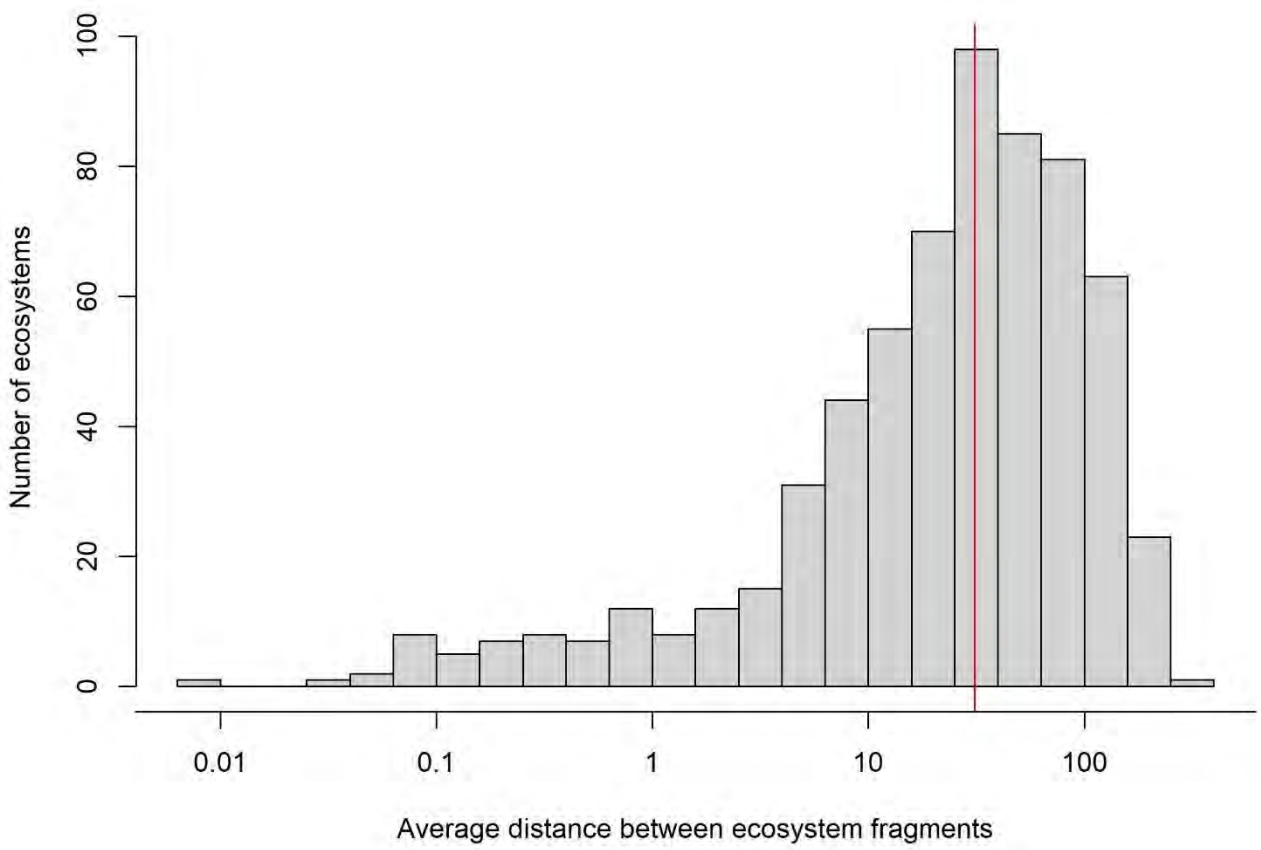


Figure 5— Average distance between ecosystem fragments (km): The red line indicates the cutoff used for identifying sensitive ecosystems.

6.2.1.5 Sensitivity: interdependency

Ecosystems that depend on the functioning of other ecosystems are more vulnerable to climate change, because disruptions in the supporting system can cascade and undermine their stability. For example, if an upstream wetland or forest is altered by climate change, the dependent downstream ecosystem may lose essential resources or may become dysregulated as ecosystem inputs from the upstream ecosystem become unstable.

Interdependency of ecosystems was manually assessed and was defined as dependence on landscape-level processes that have the potential to be disrupted by climate change. *E.g.* reliance on water provision from other ecosystems in the catchment. We considered that all freshwater and all aquatic coastal ecosystems satisfy this criterion. Inland wetlands were not considered to be highly interdependent, as the function of these ecosystems varies depending on their hydrology.

6.2.1.6 Sensitivity: notable species

A total of 1,223,471, 488,216 and 46,089 records were downloaded from GBIF for animals, plants and fungi, respectively. These were merged with NZTCS data by species name, then filtered to include only those records with a status of Threatened or At Risk (*i.e.* notable). Records with no coordinates were removed. 120,837 records of notable species were used.

Notable species records were aligned spatially with ecosystems, and the number of unique notable species was calculated for each ecosystem. The outcome is presented in **Figure 6**. The average number of notable species recorded in one ecosystem was 7, with the maximum number recorded being 277 species in one ecosystem (braided rivers). However, the majority of ecosystems had 0 recorded notable species (median = 0). Ecosystems with ≥ 2 notable species were considered to be sensitive under this criterion[1]. This represents ecosystems in the top 30% of notable species-supporting ecosystems in Waitaha Canterbury.

[1] An alternative metric was assessed, where the number of unique notable species was divided by the total number of hectares to produce a richness density metric, which was considered more relevant. However, this statistic was strongly skewed by very small habitats (such as coastal ponds) which had just one notable species.

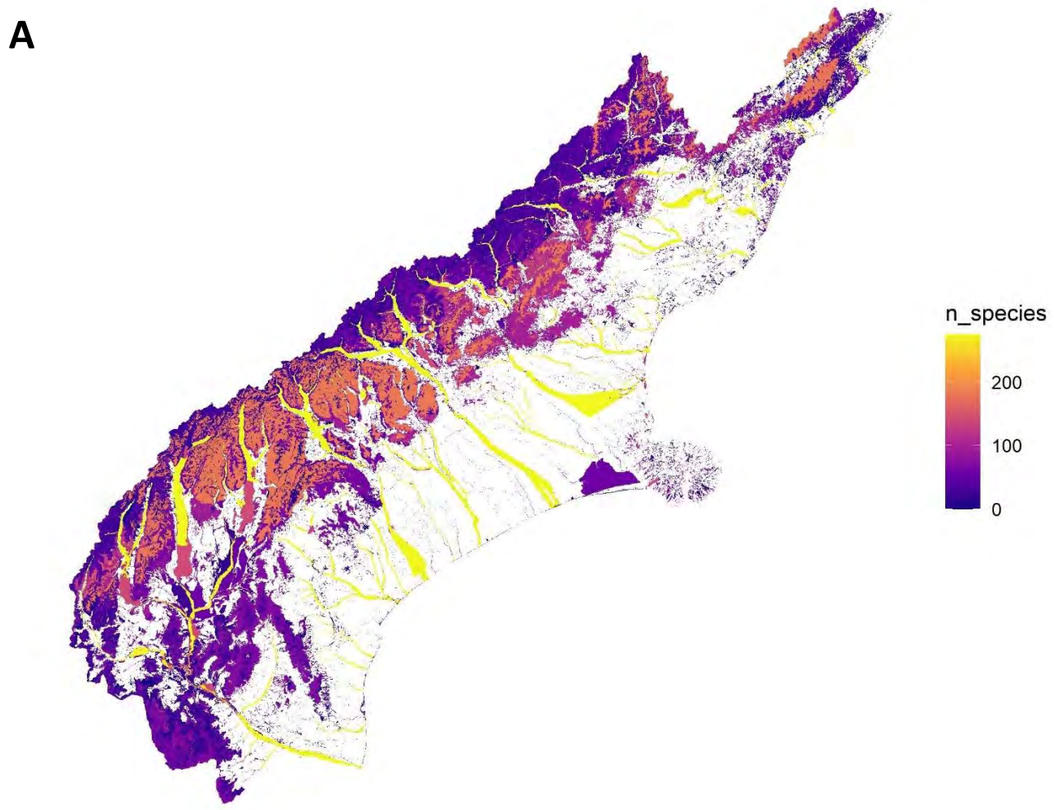


Figure 6—Number of unique species that are listed as “At Risk” or “Threatened” (n_species) under the New Zealand Threat Classification System (NZTCS) within each ecosystem in Waitaha Canterbury. Panel A indicates their distribution. Panel B shows how common, different species densities are among ecosystems (species richness/ ha). Red line indicates the cutoff used for identifying sensitive ecosystems.

6.2.2 Sensitivity: importance to iwi

Importance to iwi was considered a sensitivity criterion, because ecosystems valued by iwi provide additional ecological services, such as mahinga kai and spiritual connection, that are vital for cultural wellbeing and livelihoods. If these ecosystems are degraded by climate change, the loss extends beyond biodiversity to include food resources, materials, and traditional practices. This makes such ecosystems more sensitive, as their decline has both ecological and cultural consequences.

The conservation priorities of Ngāi Tahu are rooted in their role as *kaitiaki* (guardians) of their *rohe* (territory), which spans all of Waitaha Canterbury. The environmental vision of Ngāi Tahu emphasizes the protection and restoration of ancestral landscapes, ensuring that their people maintain living relationships with their whakapapa (*lineage*) and *te ao Māori* (way of life; cultural practices of Māori) through the environment[1]. Ngāi Tahu contribute to conservation efforts driven by their conservation priorities:

- ***Customary fisheries protection:*** Establishment of customary fishery protection areas, to safeguard traditional fishing grounds[2].
- ***Habitat restoration:*** Significant wetland restoration including planting, particularly to restore the ecological health in areas that provide *mahinga kai* (traditional food gathering) such as Te Waihora (Lake Ellesmere)[3].
- ***Species reintroduction:*** Ngāi Tahu have been involved in several re-introductions, including re-establishing the buff wēkā population in Te Waipounamu, contributing to the preservation of indigenous species.[4]
- ***Climate change adaptation:*** Implementing initiatives to minimize environmental changes, actively protecting and enhancing abundant places and species, and working towards carbon neutrality (Te Rūnanga o Ngāi Tahu, 2018).
- ***Encouraging holistic approaches to ecosystems:*** Ngāi Tahu emphasizes integrated management approaches, such as *ki uta ki tai* (from the mountains to the sea), to ensure the health of freshwater systems throughout their catchments (Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan, 2008).

These efforts reflect Ngāi Tahu's commitment to integrating traditional values with contemporary environmental management, ensuring the sustainability of their natural resources for future generations. Ngāi Tahu conservation is seated in a holistic approach to *kaitiakitanga* (guardianship). However, several ecosystems are of particular interest to Ngāi Tahu. The following ecosystems were identified as important:

- All aquatic coastal ecosystems, which are important sources of mahinga kai.
- All rivers, included braided rivers.
- All wetlands, which are a critical component of ki uta ki tai.

We consider that future assessments should directly interact with Te Rūnanga o Ngāi Tahu to identify a more comprehensive list of ecosystems that should be considered to meet this criterion.

6.2.2.1 Adaptive capacity: climatic range

Ecosystems that currently occupy a wide diversity of climatic conditions are likely to be more robust to climatic change. For example, shrubland above the treeline in P1 (LENZ) environments throughout Waitaha Canterbury experience 11 frost days in some parts of their range and 231 in others (*i.e.* frost

[1] https://ngaitahu.iwi.nz/te-runanga-o-ngai-tahu/our-work-pou/strategy-and-environment/environment/
[2] https://ngaitahu.iwi.nz/te-runanga-o-ngai-tahu/our-work-pou/strategy-and-environment/customary-fishing/
[3] https://ngaitahu.iwi.nz/te-runanga-o-ngai-tahu/our-work-pou/strategy-and-environment/customary-fishing/te-waihora/whakaora-te-waihora
[4] https://www.doc.govt.nz/weka

day range of 220). In contrast, coastal lagoons are accustomed to maritime climates and thus a much narrower range of abiotic conditions. Despite occupying a very comparable area to the shrublands (22,000 ha), coastal lagoons experience only between 7 and 40 frost days in different parts of their range (*i.e.* frost day range of 33). Shrublands may be more capable of surviving in a wide variety of climatic conditions relative to coastal wetlands, where species may be more specialised to climatic optima.

We considered that ecosystems with a PED range > 139 and number of frost days range > 47 to likely have adaptive capacity. This indicated that they were in the top 50% of climatic ranges for both variables (**Figure 7**). 35% of all ecosystems were considered to have adaptive capacity due to having a large range in both frost day requirements and their PED range.

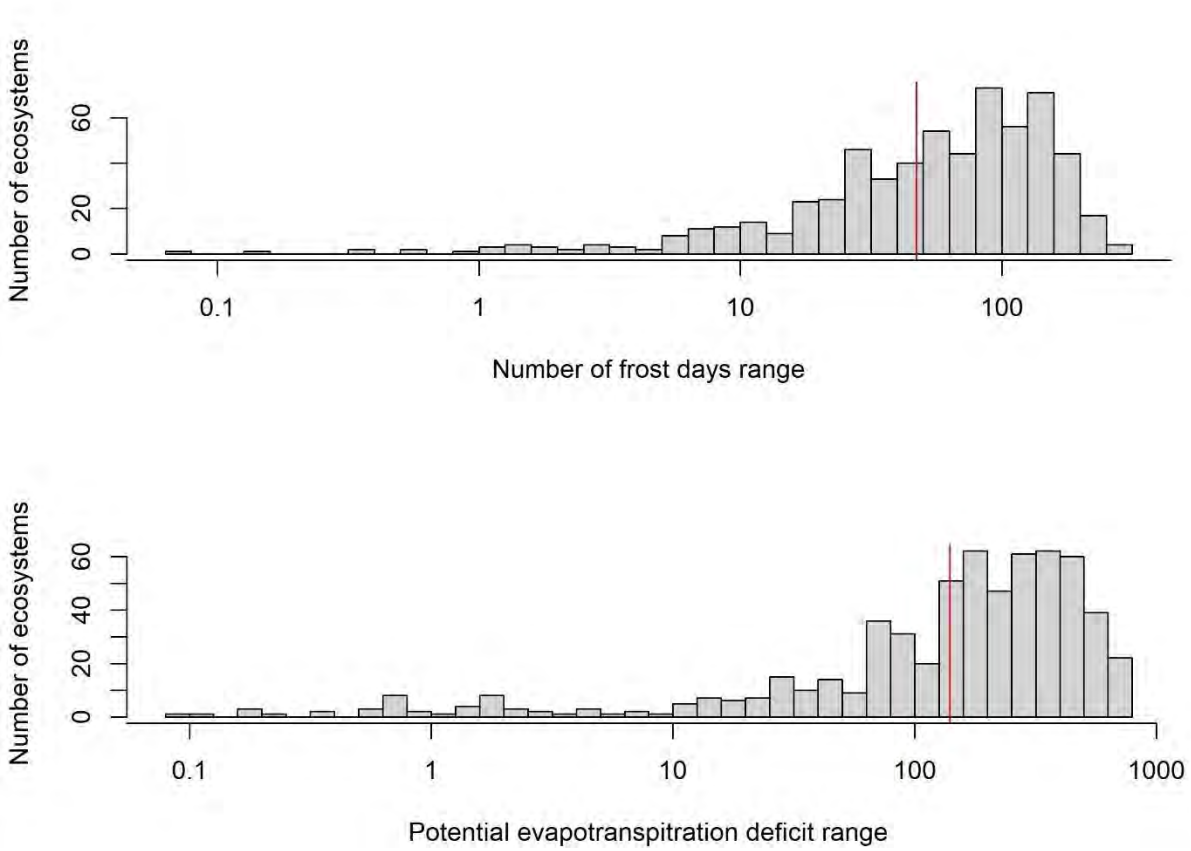


Figure 7— Ecosystem climatic-range distribution. The upper panels indicate the range in the number of frost days, the lower panel indicates range in potential evapotranspiration deficit (PED). Red line indicates the cutoff used for identifying ecosystems with adaptive capacity.

6.2.2.2 Adaptive capacity: heterogeneity

A heterogeneous ecosystem is one that is varied or diverse in its physical or biological characteristics. A heterogeneous ecosystem contains a mix of different habitats, microclimates, or species compositions rather than being uniform throughout. Heterogeneous ecosystems are more likely to have adaptive capacity because their diversity of habitats and microclimates provides refuges where species can persist under changing conditions. This environmental variety supports a wider range of species and functional traits, increasing the likelihood that some will tolerate or adapt to new climates.

Here, we approached heterogeneity by calculating the number of unique LENZ level 4 categories within each mapped ecosystem. While our ecosystem boundaries were defined using broader LENZ level 2 categories, the finer-scale level 4 categories capture more detailed environmental variation. This provides a better indication of the diversity and complexity that exists within each broader ecosystem type.

The average number of level 4 categories we observed within mapped ecosystems was 9.3, although this was highly variable (**Figure 8**). We considered that ecosystems that had 13 or more unique level 4 habitats (in the top 20%) had a higher adaptive capacity

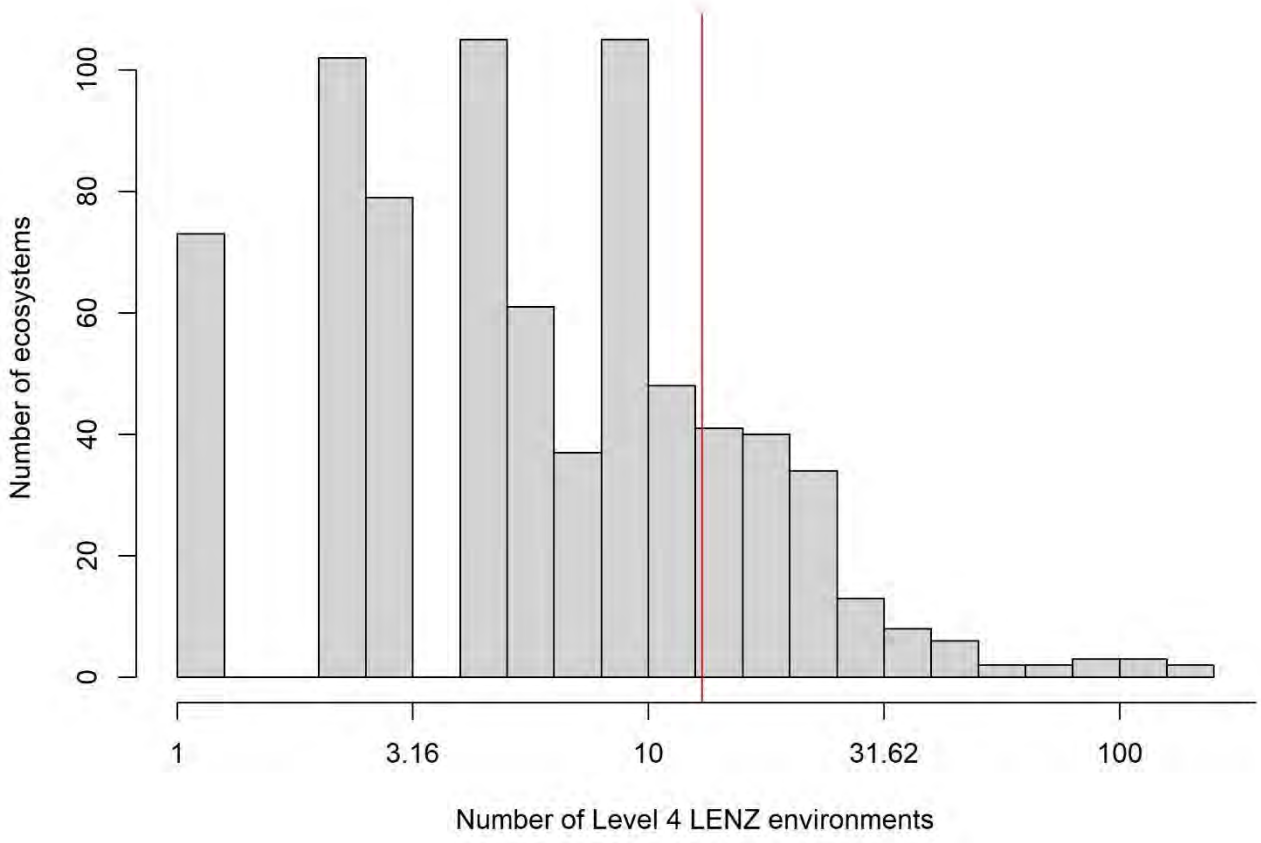


Figure 8— Ecosystem heterogeneity-range distribution. Red line indicates the cutoff used for identifying ecosystems with adaptive capacity.

6.3 Discussion of methods and limitations

Our approach includes analytical and reproducible solutions, where possible, and relies on known ecological mechanisms. Our solutions mirror those used in similar exercises in Aotearoa New Zealand to enable coordination of climate action across regions but substantially expand upon them. This approach was ultimately the most appropriate, given the great diversity of ecosystems that are present in Waitaha Canterbury. However, ultimately all outputs from automated algorithms should be very

carefully considered, and can include systemic errors. Further work could include manual assessment of values to identify areas where adjustments in algorithm structure of assumptions are appropriate.

Expert opinion was included in this assessment in a provisional way, however there is substantial scope to expand the role of expert opinion in this work. Ecosystems are nuanced and idiosyncratic. While automated analytical approaches can capture many aspects of ecosystems that make them sensitive or vulnerable, this cannot be a complete substitute for experts with on-the-ground familiarity with ecosystems. Several additional characteristics were initially considered but were removed from the analysis due to budgetary constraints (**Table 7**). The inclusion of these criteria in future analyses would provide for a more robust assessment.

The greatest limitation of automated approaches to assessing sensitivity and adaptive capacity is that automated measures are highly reliant on accurate ecosystem mapping. It is paramount that the results presented in this work are considered with consideration to potential inaccuracies in ecosystem mapping. Substantial improvements in the accuracy of our assessment could be made if analyses were re-run on updated ecosystem maps.

Many measures of ecosystem vulnerability and adaptive capacity could have substantially different outcomes if we consider the ecosystems coverage nationally instead of regionally. For example, if only a small proportion of an ecosystem occurs in Waitaha Canterbury but is otherwise common nationally, then it may be incorrectly identified as having a small range, or being dispersal limited in this analysis. Regional boundaries are not ecologically significant and we would expect that many ecosystems that occur in Waitaha Canterbury may exist in adjacent regions. We advocate for the extension of ecosystem-level assessments to the national scale.

Table 7—Summary of measures of sensitivity and adaptive capacity criteria that were considered for this work and should be considered in future analyses.

Aspect	Characteristic	Method
Sensitivity	Specific characteristic	Specialist identification of ecosystems with particular known sensitivity.
	Management requirements	Current active management.
Adaptive Capacity	Historic resilience	Known resilience to disturbance historically.
	Keystone plasticity	Plasticity of keystone or dominant canopy species.
	Specific characteristic	Specialist identification of ecosystems with particular known adaptive capacity.

7.0 Risk

The risk portion of this assessment comprises bringing together the outputs of analyses undertaken in each of the above sections.

7.1.1 Exposure

Percentage exposed for each ecosystem per scenario was categorised using the criteria identified in MfE's risk assessment guidelines, as outlined in **Table 8**, separately for each hazard. Climate change-exposure is provided for each hazard per ecosystem, time period, and climate scenario in **Appendix 4**.

Table 8—Categorising ecosystem exposure to climate hazards.

Category	% of Area Exposed per Ecosystem Type
Very high	>75% of ecosystem is exposed to the hazard
High	51-75% of the ecosystem is exposed to the hazard
Moderate	26-50% of the ecosystem is exposed to the hazard
Low	5-25% of the ecosystem is exposed to the hazard
Negligible	Less than 5% of the ecosystem is exposed to the hazard

Exposure was calculated seperately for each hazard. Additionally, exposure was calcualted for "cumulative risk" – that is, **Table 8** was used to assess the extent to which more than two climate hazards were acting on the ecosystem concurrently.

7.1.2 Sensitivity

A total of seven sensitivity criteria were considered in this analysis. Each ecosystem was provided overall sensitivity score depending on how many sensitivity criteria exceeded the threshold for that ecosystem:

- 0: Negligible
- 1: Low
- 2: Moderate
- 3-5: High
- 6-7: Very High

Sensitivity scores for ecosystems are provided in **Appendix 5.**

7.1.3 Adaptive capacity

The two adaptive capacity criteria (climatic range and heterogeneity) were combined to provide an overall adaptive capacity score for each ecosystem. Each ecosystem was assigned points based on its climatic range and heterogeneity. One point was assigned in each of the following cases:

- The ecosystem has a PED range that is in the top 50% of all ecosystems.
- The ecosystem has a range in the number of frost days that is in the top 50% of all ecosystems.
- The ecosystem's heterogeneity is in the top 20% of all ecosystems.

The ultimate adaptive capacity categories were based on the followings scores:

- Low = 0
- Moderate = 1
- High = 2
- Very High = 3

Adaptive capacity scores for ecosystems are provided in **Appendix 5.**

7.1.4 Vulnerability score

The sensitivity and adaptive capacity scores were combined to produce a vulnerability score according to **Table 9**.

Table 9—Method for deriving vulnerability from sensitivity and adaptive capacity. "Unknown" values were not assigned here as the methodology ensured that adaptive capacity criteria were always determined.

		Adaptive capacity				
		Unknown	**Low**	**Moderate**	**High**	**Very High**
Sensitivity	**Very High**	Very High	Very High	Very High	High	Moderate
	High	Very High	Very high	High	Moderate	Moderate
	Moderate	Very High	High	Moderate	Low	Low
	Low	High	Moderate	Low	Low	Low
	Negligible	Low	Low	Low	Low	Low

7.1.5 Risk score

The vulnerability and exposure scores were combined to produce a risk score according to **Table 9**. This is based on the requirements listed by the project team in the RfP, and amended to add negligible exposure. Risk was assessed on the basis of cumulative exposure.

Table 10—Method for deriving risk from vulnerability and exposure scores.

		Vulnerability			
		Very High	**High**	**Moderate**	**Low**
Exposure	**Very High**	Very High	Very High	High	Moderate
	High	Very High	High	High	Moderate
	Moderate	High	High	Moderate	Low
	Low	Moderate	Moderate	Low	Low
	Negligible	Low	Low	Low	Low

8.0 Results

8.1 Exposure

Our analyses indicate that most ecosystems will be very highly exposed to more than one climate change hazard by the end of the century, particularly under a more severe climate scenario. Exposure in the mid-century timeframe is much more variable, depending on the location of the ecosystem and the climate change scenario used. **Table 11** summarises several illustrative examples of exposure of ecosystems to climate change hazards in Waitaha Canterbury. Some examples of trends seen in the data include:

- Some ecosystem types are much more exposed than others (*e.g.* compare coastal wetlands to Hall's tōtara/silver-beech-kamahi-southern rata forest).
- The exposure of some botanically similar ecosystems differs substantially depending on the LENZ environment in which it occurs (*e.g.* silver beech forest).
- Ecosystems in similar environments have very different exposure levels to one another (*e.g.* Sub Alpine Shrubland and Tall Tussock Grassland above the treeline – shrubland has higher exposure across two different environments (Q1 and R1)
- Most NUEs are highly exposed.

A more comprehensive breakdown of exposure to a wider variety of ecosystem under each climate change scenario and timeframe is provided in **Appendix 4**.

Table 11— Illustrative examples of cumulative exposure of ecosystems to climate change hazards in Waitaha Canterbury. This represents the proportion of ecosystems that will be exposed to two or more climate change hazards, depending on climate change scenario and timeframe considered. This table is intended to illustrate trends discussed in the text; the exposure of all ecosystems is provided in **Appendix 4**, ordered by exposure ranking.

Ecosystem	Total area exposed (SSP 2-4.5 2060)	Total area exposed (SSP 2-4.5 2099)	Total area exposed (SSP 3-7 2060)	Total area exposed (SSP 3-7 2099)
Braided river	77%	94%	85%	99%
Broadleaved Indigenous HardwoodsB3	100%	100%	100%	100%
Coastal wetland - Coastal Lagoon	99%	99%	99%	99%
Coastal wetland - Estuary	81%	95%	81%	95%
Ephemeral wetlands	14%	55%	43%	100%
Hall's totara/silver-beech-kamahi-southern rata forestP2	0%	37%	0%	87%
Hall's totara/silver-beech-kamahi-southern rata forestP5	0%	23%	5%	100%
Hall's totara/silver-beech-kamahi-southern rata forestQ1	100%	100%	100%	100%
Hall's totara/silver-beech-kamahi-southern rata forestR1	0%	90%	0%	91%
Kahikatea-pukatea-tawa forestF3	67%	67%	67%	67%
Kahikatea-pukatea-tawa forestJ2	82%	82%	82%	82%
Kahikatea-pukatea-tawa forestN1	81%	81%	81%	81%
Kahikatea-totara forestI3	100%	100%	100%	100%
Kahikatea-totara forestJ2	100%	100%	100%	100%
Kahikatea-totara forestN1	100%	100%	100%	100%
Lake margin wetlands	73%	87%	83%	94%
Lake or Pond	81%	91%	87%	100%
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandQ1	53%	73%	49%	96%
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandR1	19%	75%	37%	96%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandQ1	31%	41%	25%	95%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandR1	8%	68%	17%	94%
Silver beech forestE1	77%	100%	77%	100%
Silver beech forestE4	25%	97%	32%	100%
Silver beech forestF3	100%	100%	100%	100%
Silver beech forestK1	27%	100%	28%	100%
Silver beech forestP1	7%	82%	7%	97%
Silver beech forestP2	22%	89%	22%	100%
Silver beech forestP5	10%	100%	23%	100%
Silver beech forestR1	12%	93%	20%	99%
Wetlands	70%	85%	74%	98%
Acidic coastal cliffs	78%	78%	78%	78%
Acidic cliffs, scarps and tors	72%	88%	72%	98%
Acidic scree	6%	44%	11%	99%
Basic cliffs, scarps and tors	83%	95%	87%	95%
Limestone coastal cliffs	54%	62%	62%	62%
Limestone cliffs, scarps and tors	89%	95%	92%	97%
Moraine	52%	91%	74%	94%
Outwash gravels	100%	100%	100%	100%
Quartzose cliffs, scarps and tors	83%	91%	89%	92%
Sinkhole	89%	99%	99%	100%
Snow banks	16%	62%	25%	93%
Tarn	34%	65%	38%	95%

Climate change hazards affect various parts of Waitaha Canterbury unequally (**Figure 9**). Particular hotspots of cumulative climate impact vary depending on time frame and climate scenario used. However, Kaikōura, the low plains (particularly north of Ōtautahi Christchurch) and the Mackenzie

country appear to be more affected than other areas. By the end of the century, the foothill ranges throughout the region appear to be affected by the widest range of climate change hazards.

Below, we outline trends in hazard exposure by district. Cumulative hazards are mapped per district in **Figures 10a-i**.

8.1.1 Kaikōura

The majority of ecosystems in this district will not be exposed to dramatic changes in precipitation by the mid-century. By the end of the century, most of the ecosystems in this district will be exposed under both SSPs.

Substantial decreases in extreme cold conditions are predicted in the district by the mid-century under both scenarios, although effects are more substantial under SSP 3 – 7.0. By the end of the century, cold conditions will be lost throughout the majority of the district.

Extreme heat will increase in only small areas inland by mid-century under the more severe climate scenario. By the end of the century, most of the region will be affected under both climate scenarios.

Wildfire exposure is unlikely to change substantially by mid-century or the end of the century.

Drought conditions may increase in coastal areas by mid-century. However, by the end of the century, more drought conditions are projected in coastal areas. Under SSP 3- 7.0, drought is widespread in the district by the end of the century.

No substantial changes in storms and severe winds are predicted by mid-century or the end of the century.

Much of the district is currently suitable for Douglas fir. In the future, coastal areas may become less suitable. More coastal and lowland areas may become less suitable for lodgepole pine. Much of the district is currently suitable for Russell lupin and old man's beard. In the future, coastal areas may become less suitable for both. Many low elevation areas in the district are currently climatically suitable for Khasia berry. The range of this species is likely to extend up-slope throughout the district but some coastal areas may become unsuitable.

By mid-century flooding exposure increases along rivers in both climate scenarios.

Coastal erosion is not projected to increase in the future in the district. Coastal inundation may affect some parts of the district's coast, particularly late-century. Greatest impacts are modelled around the peninsula.

Landslides/soil erosion exposure is projected to increase in many parts of the district by mid-century, although different areas are predicted to be exposed under the two scenarios. With more severe/ late-century climate projections, this effect is lesser due to decreasing precipitation.

8.1.2 Hurunui

The majority of ecosystems in this district will not be exposed to dramatic changes in precipitation by the mid-century. Some exposure to changing precipitation patterns is predicted in the district under both SSPs, although changes are patchy in the district.

Decreases in extreme cold conditions are predicted in the lowlands by the mid-century under both scenarios, although effects are more substantial under SSP 3 – 7.0. By the end of the century, cold conditions will be lost throughout the majority of the district.

Extreme heat conditions are not predicted to change substantially by mid-century under either climate scenario. By the end of the century, more extreme heat conditions are expected inland under SSP 2 – 4.5. In contrast, under SSP 3 – 7.0, most of the region will be exposed.

Wildfire exposure may increase by mid-century in the south-east. Fire exposure is projected to then remain consistent until the end of the century.

No substantial increases in drought conditions are projected by mid-century. However, by the end of the century, more drought conditions may occur in many parts of the district, but only under SSP 3-7.0.

No substantial changes in storms and severe winds are predicted by mid-century. By the end of the century, the SSPs diverge, with 2 – 4.5 predicting no change, and 3 - 7.0 indicating increased winds in small areas in the district.

The district is currently suitable for Douglas fir and this is likely to be true under future climates. More coastal and lowland areas as well as low hills near the coast may become less suitable for lodgepole pine. Much of the district is currently suitable for Russell lupin. In the future, coastal areas may become less suitable. Much of the Hurunui is currently appropriate for old man's beard and will; be in the future, although its range may expand into higher mountain areas. Many low elevation areas in the district are currently climatically suitable for Khasia berry. The range of this species is likely to extend up-slope throughout the district.

By mid-century flooding exposure increases along rivers in both climate scenarios, although the hazard is more wide-spread in the more severe climate scenario.

Coastal erosion is not projected to increase in the future in some parts of the district. Coastal inundation may affect some parts of the district's coast, particularly late-century.

Landslides/soil erosion exposure is projected to increase in many parts of the district by mid-century, although different areas are predicted to be exposed under the two scenarios, with more severe/ late-century climate projections, this effect is lesser due to decreasing precipitation.

8.1.3 Waimakariri

The majority of ecosystems in this district will not be affected by dramatic changes in precipitation by the mid-century. By the end of the century, much of the district will be affected irrespective of SSP scenario.

Substantial decreases of extreme cold conditions are predicted in the district, particularly in the lowlands by the mid-century under both scenarios, although effects are more substantial under SSP 3 – 7.0. By the end of the century, cold conditions will be lost throughout the majority of the district.

Extreme heat conditions are not predicted to change substantially by mid-century under either climate scenario. By the end of the century, more extreme heat conditions are expected inland under SSP 2 – 4.5. In contrast, under SSP 3 – 7.0, most of the region will be affected.

Wildfire exposure may increase by mid-century in pockets throughout the district, with the more severe climate scenario accelerating this change. Fire hazard is projected to then remain consistent until the end of the century.

No substantial increases in drought conditions are projected by mid-century. However, by the end of the century, more drought conditions may occur inland but these are worse under SSP 3- 7.0.

No substantial changes in storms and severe winds are predicted by mid-century. By the end of the century, the SSPs diverge, with 2 – 4.5 predicting no change, and 3 - 7.0 indicating increased winds in inland areas.

The district is currently suitable for Douglas fir, old man's beard and Russell lupin and this is likely to be true under future climates. More lowland/coastal areas may become less suitable for lodgepole pine. Many low elevation areas in the district are currently climatically suitable for Khasia berry. The range of this species is likely to extend up-slope throughout the district.

By mid-century flooding exposure increases along rivers in both climate scenarios and remains high through to the end of the century, although exposure is more wide-spread in the more severe climate scenario.

Coastal erosion is not projected to increase in the future in the district. Waimakariri district is likely to be affected by coastal inundation during storm events even by mid-century.

Landslides/soil erosion exposure is projected to increase in some inland parts of the district by mid-century. Late-century, this effect is lesser due to decreasing precipitation. Coastal inundation may affect some parts of the district's coast, particularly late-century

8.1.4 Christchurch City and Banks Peninsula

The majority of ecosystems in this district will not be affected by dramatic changes in precipitation by the mid-century. Projections for the end of the century depend on the SSP scenario used, with strong effects under SSP 3- 7.0 but much of the district is less affected under a more moderate scenario. The Banks Peninsula is projected to experience smaller precipitation changes.

Substantial reductions of extreme cold conditions are predicted in the district by the mid-century under both scenarios. By the end of the century, cold conditions will be lost throughout the entire district.

Extreme heat conditions are not predicted to change substantially by mid-century under either climate scenario, except locally around Christchurch City. By the end of the century, mid-century trends are predicted to expand slightly under SSP 2 – 4.5. In contrast, under SSP 3 – 7.0, most of the region will be affected.

Wildfire exposure may increase in areas outside of the Banks Peninsula by mid-century but this trend may abate by the end of the century.

No substantial increases in drought conditions are projected by mid-century or the end of the century.

No substantial changes in storms and severe winds are predicted by mid-century or the end of the century.

The district is currently suitable for Douglas fir, Khasia berry and old man's beard, and this is likely to be true under future climates. More of the region is likely to become unsuitable for lodgepole pine in the future. Much of the district is currently suitable for Russell lupin, some areas may become less suitable in the future.

Some small increases in flooding exposure are expected by mid-century.

Coastal erosion is not projected to increase in the future in the district except around Birdlings Flat. This district is likely to be affected by coastal inundation during storm events even by mid-century.

Landslides/soil erosion exposure is not projected to increase in the district by mid-or late-century.

8.1.5 Selwyn

The majority of ecosystems in this district will not be affected by dramatic changes in precipitation by the mid-century. Projections for the end of the century depend on the SSP scenario used, with strong effects under SSP 3- 7.0 but not a more moderate scenario.

Decreases of extreme cold conditions are predicted in the lowlands and some portions of the alpine zone by the mid-century under both scenarios, although effects are more substantial under SSP 3 – 7.0. By the end of the century, cold conditions will be lost throughout the majority of the district.

Extreme heat will increase in only small areas in intermontane basins by mid-century under the more severe climate scenario. By the end of the century, mid-century trends are predicted to expand under SSP 2 – 4.5. In contrast, under SSP 3 – 7.0, most of the region will be affected.

Wildfire exposure will increase in the lowlands by mid-century, particularly under a more severe climate scenario. By the end of the century this increased fire exposure is projected to abate.

No substantial increases in drought conditions are projected by mid-century. However, by the end of the century, more drought conditions may occur in the foothills and intermontane basins but only under SSP 3- 7.0.

No substantial changes in storms and severe winds are predicted by mid-century. By the end of the century, the SSPs diverge, with 2 – 4.5 predicting no change, and 3 - 7.0 indicating increased winds in most of the district.

Much of the district is currently suitable for Douglas fir. In the future, its range will expand into the alpine zone. More coastal and lowland areas may become less suitable for lodgepole pine. Much of the district is currently suitable for Russell lupin. In the future, its range will expand into harsher mountain climates but coastal areas may become less suitable. Old man's beard may expand into higher elevations. Many low elevation areas in the district are currently climatically suitable for Khasia berry. The range of this species is likely to extend up-slope throughout the district but some coastal areas may become unsuitable.

By mid-century flooding exposure increases along rivers in both climate scenarios and remains high through to the end of the century, although the exposure is more wide-spread in the more severe climate scenario.

Coastal erosion is projected to increase in the future in the district. This district is likely to be affected by coastal inundation during storm events even by mid-century.

Landslides/soil erosion exposure is projected to increase in some inland and montane parts of the district by mid-century, although different areas are predicted to be exposed under the two scenarios. Late-century, this exposure is more centred on the main divide, due to changing precipitation trends.

8.1.6 Ashburton

The majority of ecosystems in this district will not be affected by dramatic changes in precipitation by the mid-century. By the end of the century, much of the district will be affected, particularly in the lowlands and foothills although the change is more dramatic under SSP 3- 7.0.

No substantial changes in storms and severe winds are predicted by mid-century. By the end of the century, the SSPs diverge, with 2 – 4.5 predicting no change, and 3 - 7.0 indicating increased winds in most of the district.

Decreases of extreme cold conditions are predicted in the lowlands and some portions of the alpine zone by the mid-century under both scenarios, although effects are more substantial under SSP 3 – 7.0. By the end of the century, cold conditions will be lost throughout the majority of the district.

Extreme heat will increase in only small areas in intermontane basins by mid-century under the more severe climate scenario. By the end of the century, mid-century trends are predicted to expand under SSP 2 – 4.5. In contrast, under SSP 3 – 7.0, most of the region will be affected.

No substantial increases in drought conditions are projected by mid-century. However, by the end of the century, more drought conditions may occur in the foothills and intermontane basins but this is substantial only under SSP 3- 7.0.

Wildfire exposure is unlikely to change substantially by mid-century ort the end of the century.

Much of the district is currently suitable for Douglas fir. In the future, its range will expand into the alpine zone but coastal areas may become less suitable. More lowland/coastal areas may become less suitable for lodgepole pine but its distribution may expand into alpine areas. Much of the district is currently suitable for Russell lupin and old man's beard. In the future, their ranges will expand into harsher mountain climates but coastal areas may become less suitable. Many low elevation areas in the district are currently climatically suitable for Khasia berry. The range of this species is likely to extend up-slope throughout the district but some coastal areas may become unsuitable.

Flooding exposure is expected to increase along large rivers by mid-century.

Coastal erosion is projected to increase in the future in the district.

Landslides/soil erosion exposure is projected to increase in some inland and montane parts of the district by mid-century, particularly in the more severe climate scenario. Late-century, this exposure is more centred on the main divide, due to changing precipitation trends.

Ashburton district is not projected to be greatly affected by coastal flooding.

8.1.7 Timaru

The majority of ecosystems in this district will not be affected by dramatic changes in precipitation by the mid-century. By the end of the century, much of the district will be affected irrespective of SSP scenario.

Decreases of extreme cold conditions are predicted in the lowlands and some portions of the alpine zone by the mid-century under both scenarios, although effects are more substantial under SSP 3 – 7.0. By the end of the century, cold conditions will be lost throughout the majority of the district.

Extreme heat will increase in only small areas in intermontane basins by mid-century under the more severe climate scenario. By the end of the century, mid-century trends are predicted to expand under SSP 2 – 4.5. In contrast, under SSP 3 – 7.0, most of the region will be affected.

Wildfire exposure is unlikely to change substantially by mid-century or the end of the century.

No substantial increases in drought conditions are projected by mid-century. However, by the end of the century, more drought conditions may occur in the foothills and intermontane basins but only under SSP 3- 7.0.

No substantial changes in storms and severe winds are predicted by mid-century. By the end of the century, the SSPs diverge, with 2 – 4.5 predicting no change, and 3 - 7.0 indicating increased winds in many parts of the district.

Much of the district is currently suitable for Douglas fir. In the future, its range will expand into the alpine zone but coastal areas may become less suitable. More lowland/coastal areas may become less suitable for lodgepole pine and old man's beard. Much of the district is currently suitable for Russell lupin. In the future, coastal and lowland areas may become less suitable. Many low elevation areas in the district are currently climatically suitable for Khasia berry. Some coastal and lowland areas may become unsuitable.

Flooding exposure is expected to increase along large rivers by mid-century.

Coastal erosion is projected to increase in the future in the district. This district is likely to be affected by coastal inundation during storm events, with the greatest impacts likely late-century.

Landslides/soil erosion exposure is projected to increase in some inland and montane parts of the district by mid-century. Late-century, this exposure is more centred on the main divide, due to changing precipitation trends.

8.1.8 Mackenzie

The majority of ecosystems in this district will not be affected by dramatic changes in precipitation by the mid-century. By the end of the century, much of the district will be affected, although the change is more dramatic under SSP 3- 7.0.

Small areas where decreases of extreme cold conditions are predicted in the district under both scenarios, but these will particularly occur in the alpine zone. By the end of the century, cold conditions will be lost throughout much of the district under SSP 2 -4.5, and the majority of the district under SSP 3 -7.0.

Extreme heat will increase in only small areas in intermontane basins by mid-century under the more severe climate scenario. By the end of the century, mid-century trends are predicted to expand under SSP 2 – 4.5. In contrast, under SSP 3 – 7.0, most of the region will be affected.

Wildfire exposure may increase by mid-century, particularly in the basin and remain stable until the end of the century.

No substantial increases in drought conditions are projected by mid-century. However, by the end of the century, more drought conditions are projected to occur in the foothills and intermontane basins but this is worse under SSP 3- 7.0.

No substantial changes in storms and severe winds are predicted by mid-century. By the end of the century, the SSPs diverge, with 2 – 4.5 predicting no change, and 3 - 7.0 indicating increased winds in most of the district outside of mountain areas.

Much of the district is currently suitable for Douglas fir. In the future, its range will expand into the alpine zone. The suitability of the region for lodgepole pine is likely to remain similar, although the species is likely to expand in alpine areas. Much of the district is currently suitable for Russell lupin and old man's beard. In the future, their distributions are likely to extend in mountain areas. Some low elevation areas in the district are currently climatically suitable for Khasia berry. The range of this species is likely to extend up-slope throughout the district.

Flooding exposure is expected to increase along large rivers by mid-century under SSP 3 – 7.0 and flooding exposure is projected by both scenarios by the end of the century.

The Mackenzie district is not exposed to coastal hazards.

Landslides/soil erosion exposure is projected to increase in some southern portions of the district by mid-century, particularly in the more severe climate scenario. This becomes more wide-spread late century.

8.1.9 Waimate

By the middle of this century, ecosystems in this district will be affected by changes in precipitation, particularly in the east. By the end of the century, much of the district will be affected irrespective of SSP scenario.

Decreases in extreme cold conditions are predicted in the lowlands by the mid-century under both scenarios, although effects are more substantial under SSP 3 – 7.0. By the end of the century, cold conditions will be lost throughout the majority of the district.

Extreme heat conditions are not predicted to change substantially by mid-century under either climate scenario. By the end of the century, more extreme heat conditions are expected inland under SSP 2 – 4.5. In contrast, under SSP 3 – 7.0, most of the region will be affected.

Wildfire exposure is unlikely to change substantially by mid-century except in some areas inland. Fire exposure is projected to then remain consistent until the end of the century.

No substantial increases in drought conditions are projected by mid-century. However, by the end of the century, more drought conditions may occur inland but only under SSP 3- 7.0.

No substantial changes in storms and severe winds are predicted by mid-century. By the end of the century, the SSPs diverge, with 2 – 4.5 predicting no change, and 3 - 7.0 indicating increased winds in many parts of the district.

Much of the district is currently suitable for Douglas fir. In the future, coastal areas may become less suitable. More coastal areas may become less suitable for lodgepole pine. Much of the district is currently suitable for Russell lupin and old man’s beard. In the future coastal and lowland areas may become less suitable for Russel lupin and old man’s beard. Many low elevation areas in the district are currently climatically suitable for Khasia berry. The range of this species is likely to extend up-slope throughout the district but some coastal areas may become unsuitable.

Flooding exposure is expected to increase along large rivers by mid-century under SSP 3 – 7.0 and flooding exposure is projected by both scenarios by the end of the century.

Coastal erosion is not projected to increase in the future in most of the district. This district is likely to be affected by coastal inundation during storm events even by mid-century.

Landslides/soil erosion exposure is not projected to increase in the district by mid- or late-century except in the more severe scenario.

8.1.10 Waitaki

By the middle of this century, many parts of this district will be affected by changes in precipitation. By the end of the century, much of the district will be affected, although the change will not occur inland under SSP 2- 4.5.

Losses of extreme cold conditions are predicted in the lowlands and some portions of the alpine zone by the mid-century under both scenarios, although effects are more substantial under SSP 3 – 7.0. By the end of the century, cold conditions will be lost throughout much of the district under SSP 2 -4.5, and the majority of the district under SSP 3 -7.0.

Extreme heat conditions are not predicted to change substantially by mid-century under either climate scenario. By the end of the century, more extreme heat conditions are expected inland under SSP 2 – 4.5. In contrast, under SSP 3 – 7.0, most of the region will be affected.

Wildfire exposure is unlikely to change substantially by mid-century. Fire exposure will increase only modestly by the end of the century.

No substantial increases in drought conditions are projected by mid-century. However, by the end of the century, more drought conditions are predicted around Danseys Pass, particularly under SSP 3-7.0.

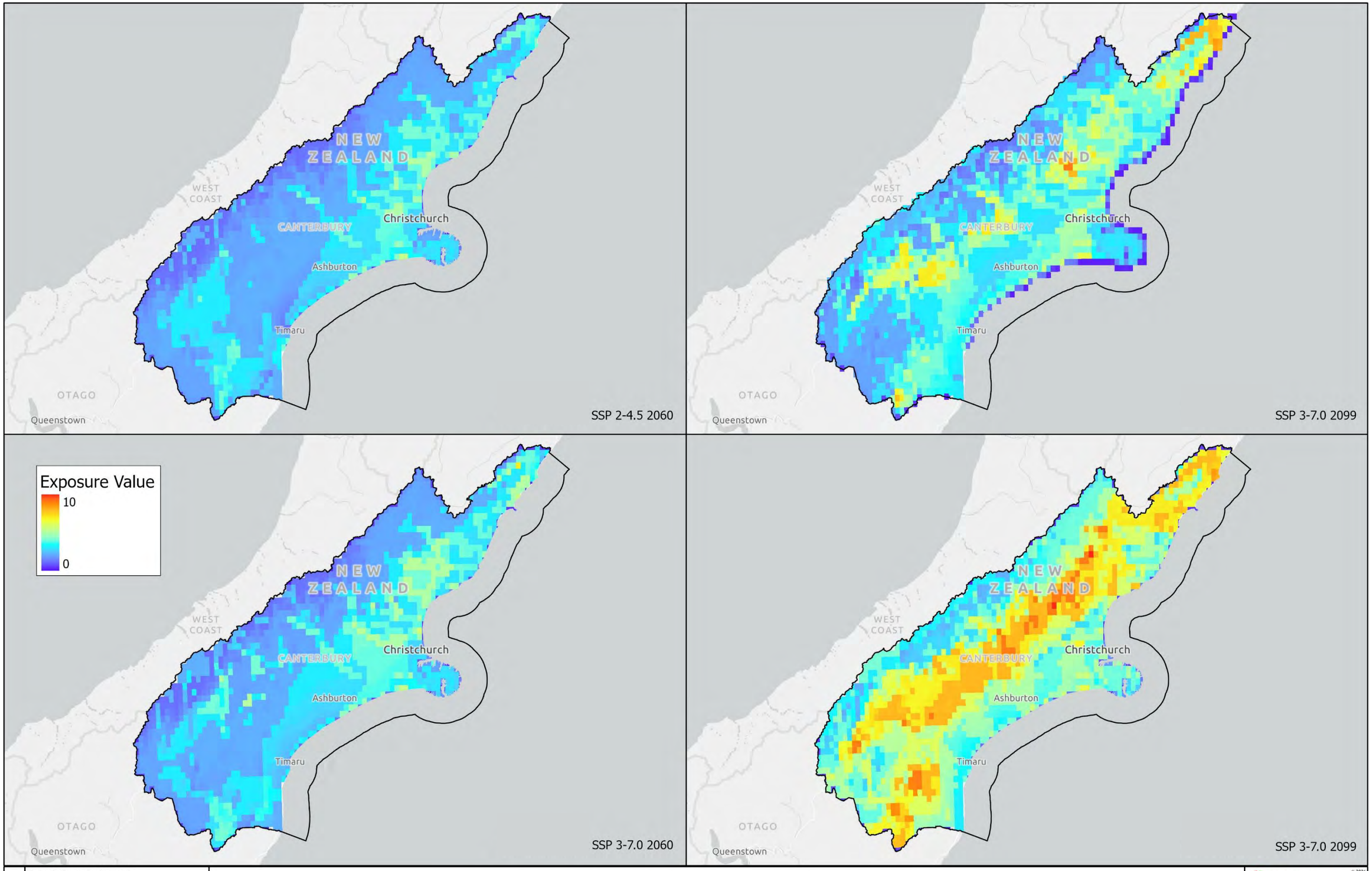
No substantial changes in storms and severe winds are predicted by mid-century. By the end of the century, the SSPs diverge, with 2 – 4.5 predicting no change, and 3 - 7.0 indicating increased winds in many parts of the district.

The district is currently suitable for Douglas fir, Russell lupin, old man's beard and lodgepole pine and this is likely to be true under future climates. Many low elevation areas in the district are currently climatically suitable for Khasia berry. The range of this species is likely to extend up-slope throughout the district.

Flooding exposure is expected to increase along large rivers by mid-century under SSP 3 – 7.0 and flooding exposure is projected by both scenarios by the end of the century.

Landslides/soil erosion exposure is projected to increase in some montane parts of the district by mid-century, particularly in the more severe climate scenario. Late-century, this exposure is more centred on the main divide, due to changing precipitation trends.

Coastal hazards were not modelled in this district.



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

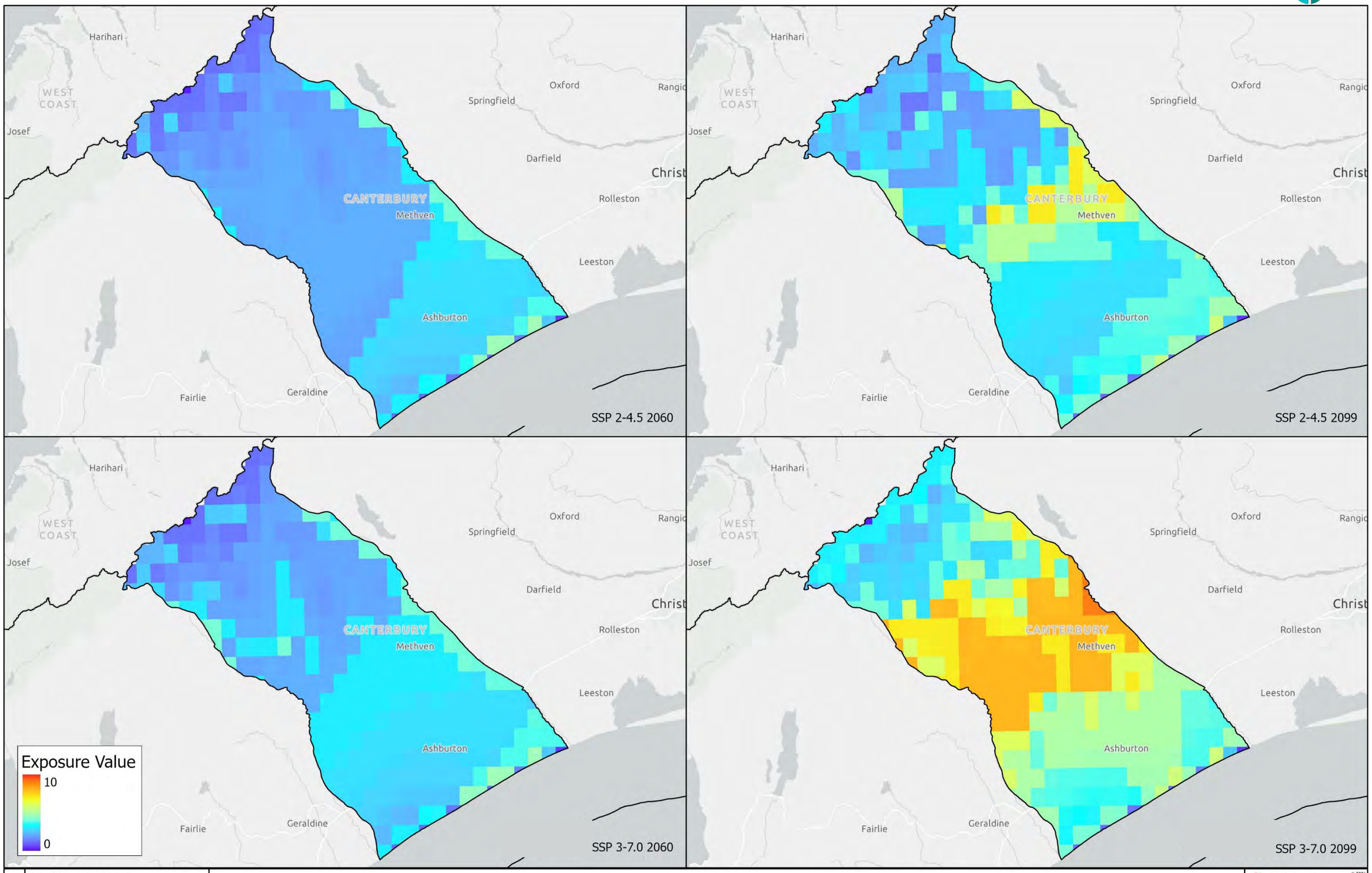
Report: 7603
Client:
Ref: 12084
Path: \\v64gis\GIS2\gis\Waitaha Climate Change\mxd\
File: Figure_CumulativeExposure.mxd

Figure 9. Cumulative exposure in Waitaha Canterbury

Colour value indicates the number of climate hazards to which ecosystems are exposed.

0 100 200 Km

Wildlands © 2026
www.wildlands.co.nz, 0508 WILDNZ
Scale: 1:3,000,000
Date: 7/01/2026
Cartographer: LW
Format: A3R



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: \\v64gis\GIS2\gis\Waitaha Climate Change\mxd\
File: Figure_CumulativeExposure_Ashburton.mxd

Figure 10a. Cumulative exposure in Ashburton district

Colour value indicates the number of climate hazards to which ecosystems are exposed.

0 50 100 Km

© 2026 Wildlands
www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:1,000,000
Date: 7/01/2026
Cartographer: LW
Format: A3R

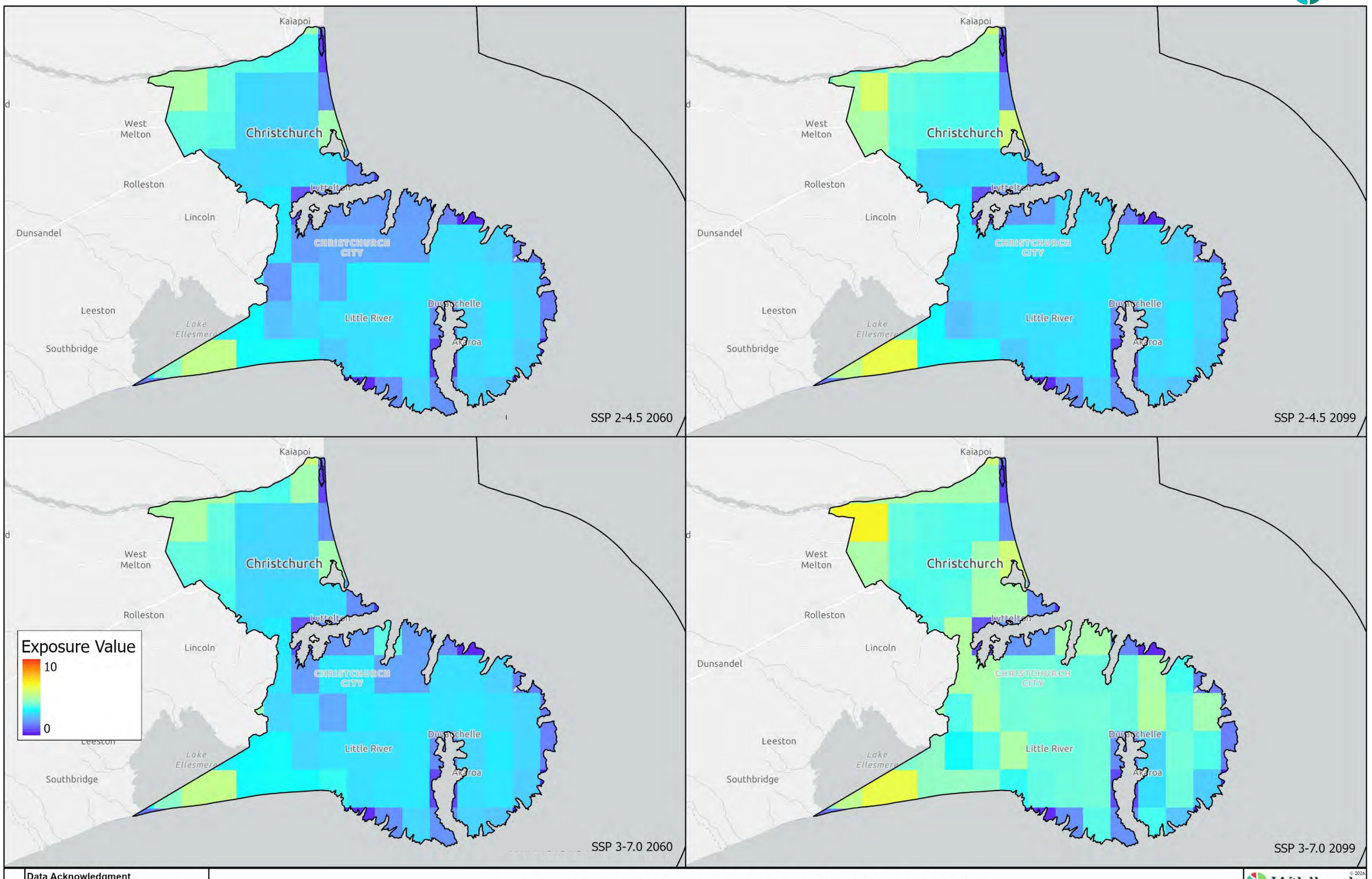


Figure 10b. Cumulative exposure in Christchurch City district

Colour value indicates the number of climate hazards to which ecosystems are exposed.

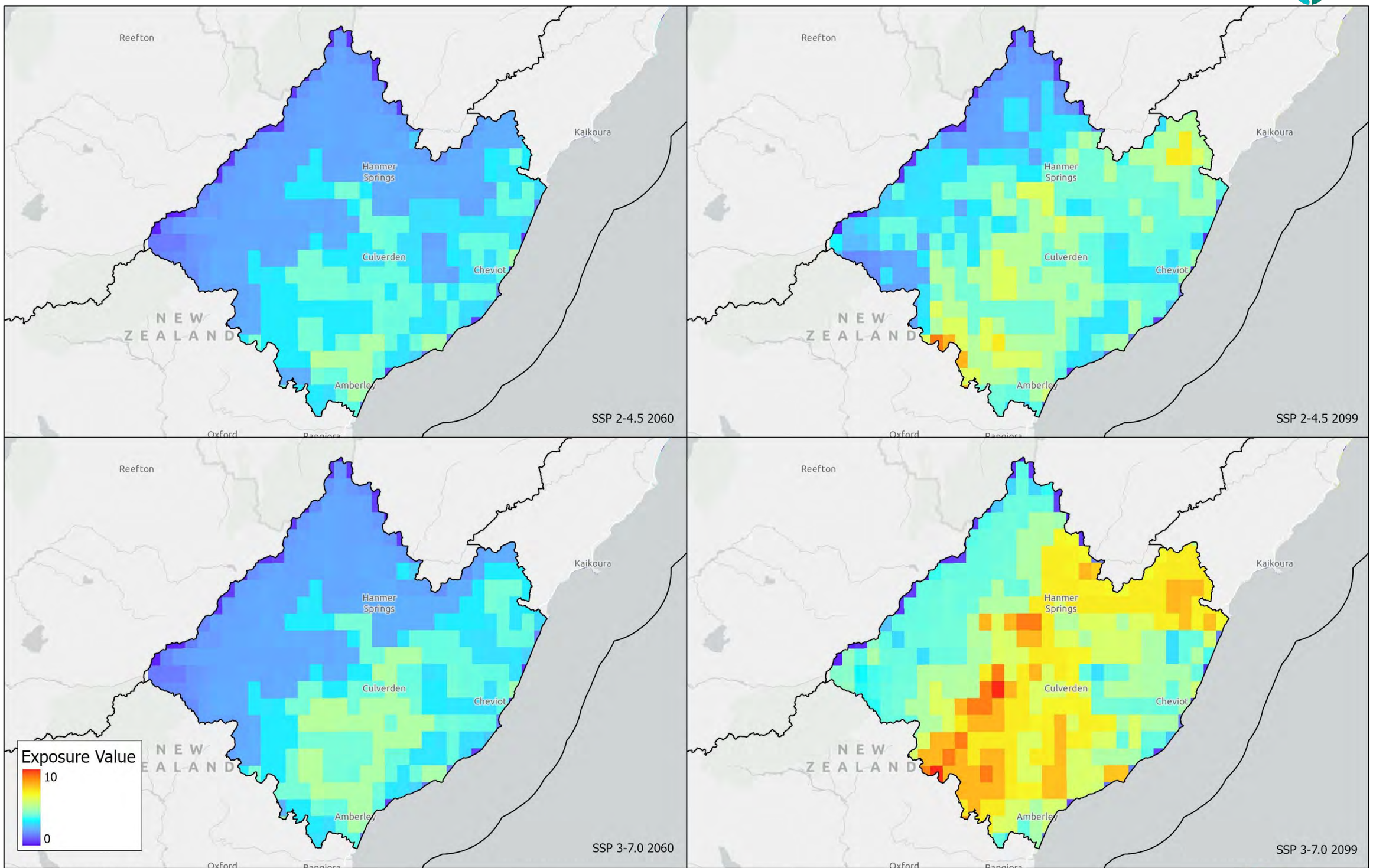


Figure 10c. Cumulative exposure in Hurunui district

Colour value indicates the number of climate hazards to which ecosystems are exposed.

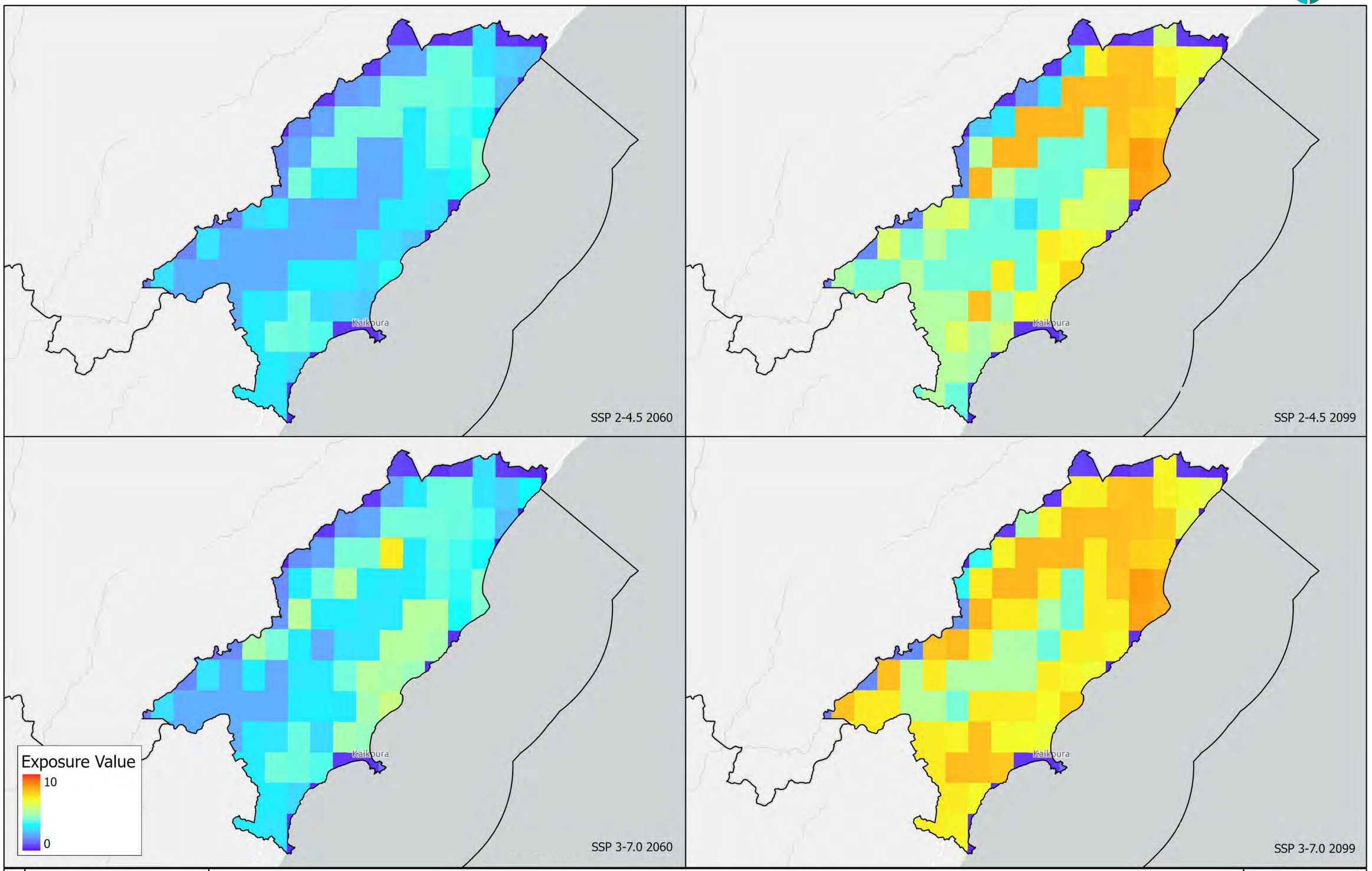
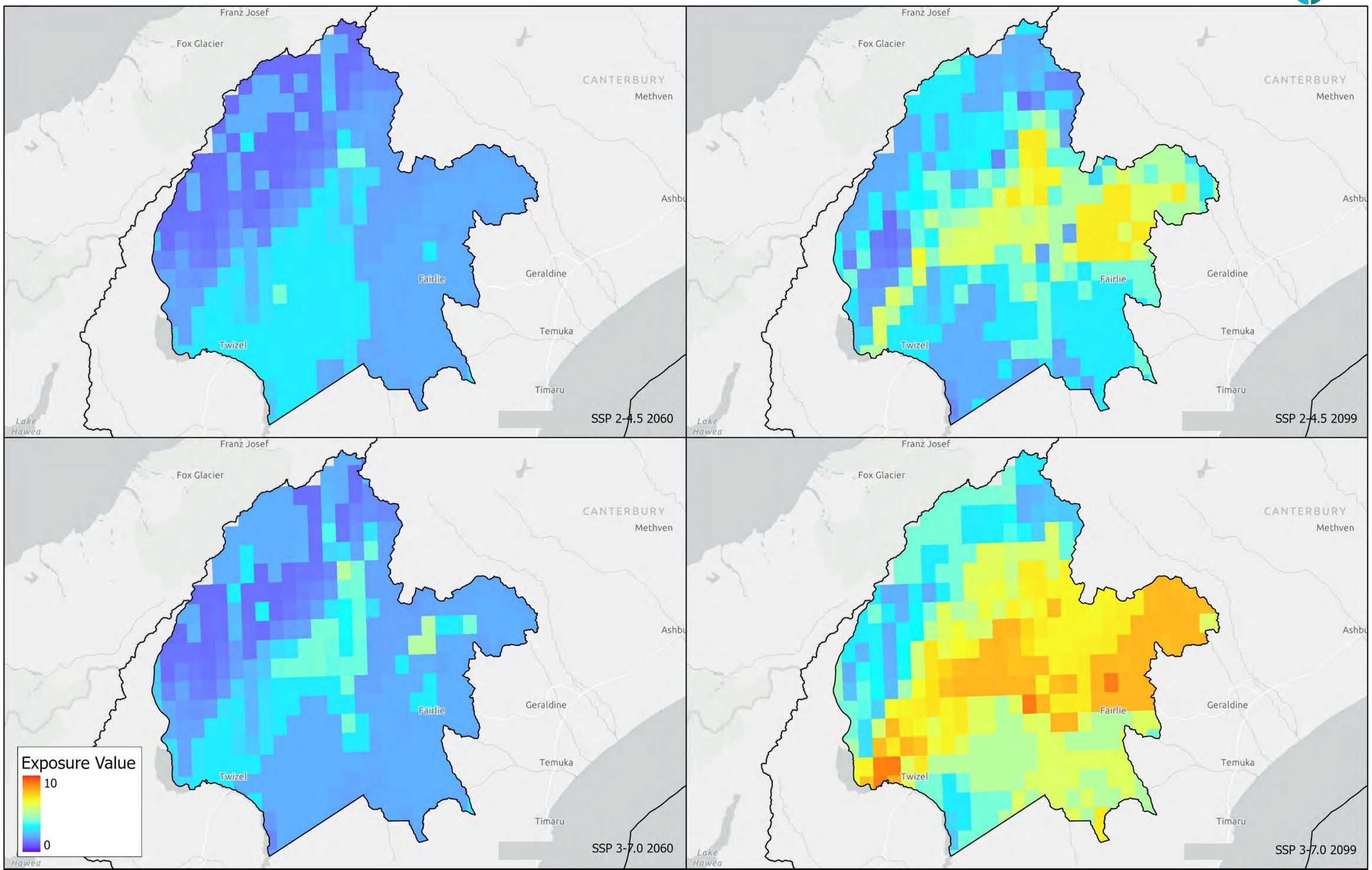


Figure 10d. Cumulative exposure in Kaikōura district

Colour value indicates the number of climate hazards to which ecosystems are exposed.



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: \\v4gis\GIS2\gis\Waitaha Climate Change\mxd\
File: Figure_CumulativeExposure_Mackenzie.mxd

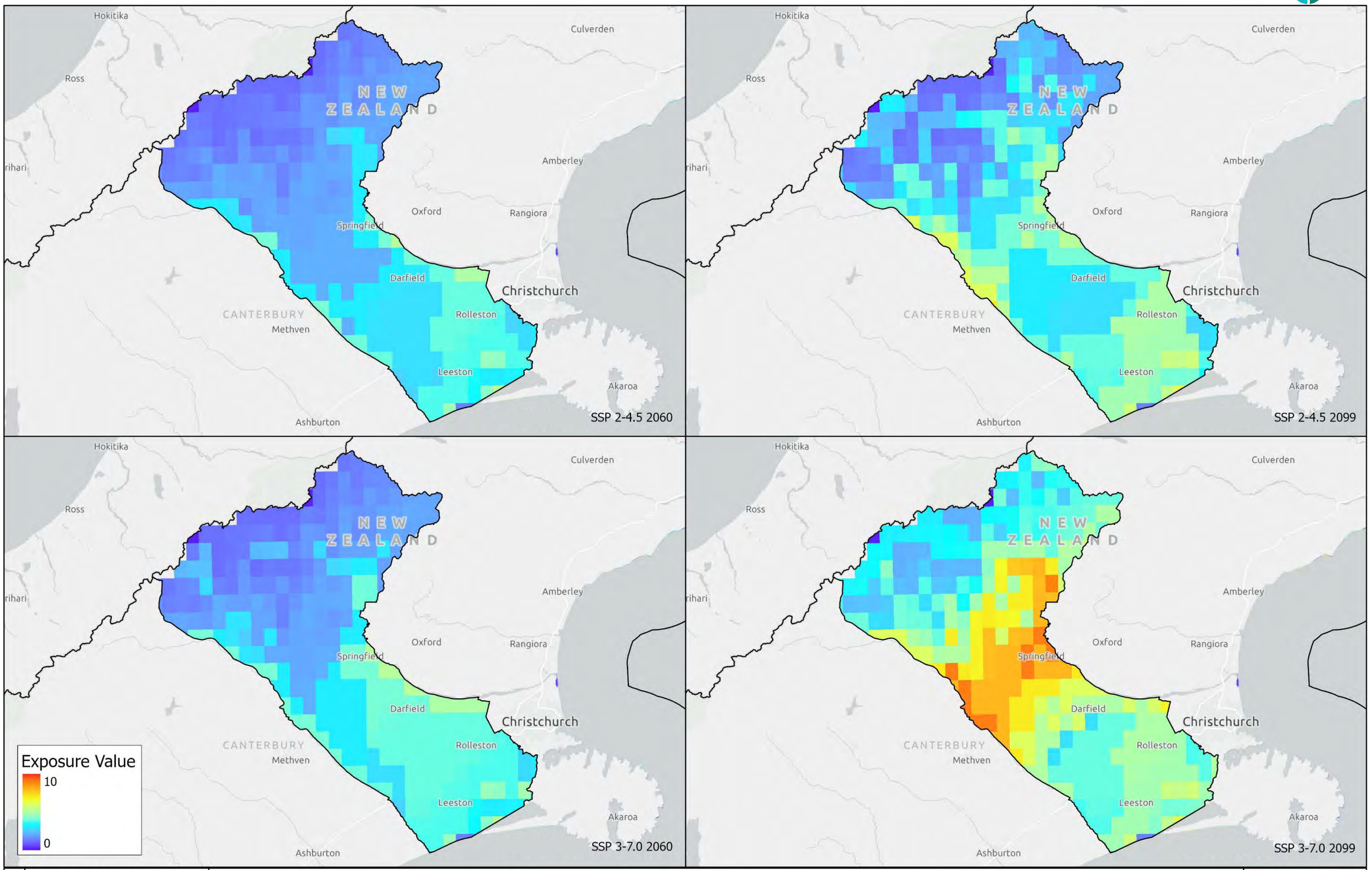
Figure 10e. Cumulative exposure in Mackenzie district

Colour value indicates the number of climate hazards to which ecosystems are exposed.

0 50 100 Km

© 2026 Wildlands
www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:1,000,000
Date: 7/01/2026
Cartographer: LW
Format: A3R



Data Acknowledgment
Map contains data sourced from LINZ
Cown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: \\v64gis\GIS2\gis\Waitaha Climate Change\mxd\
File: Figure_CumulativeExposure_Selwyn.mxd

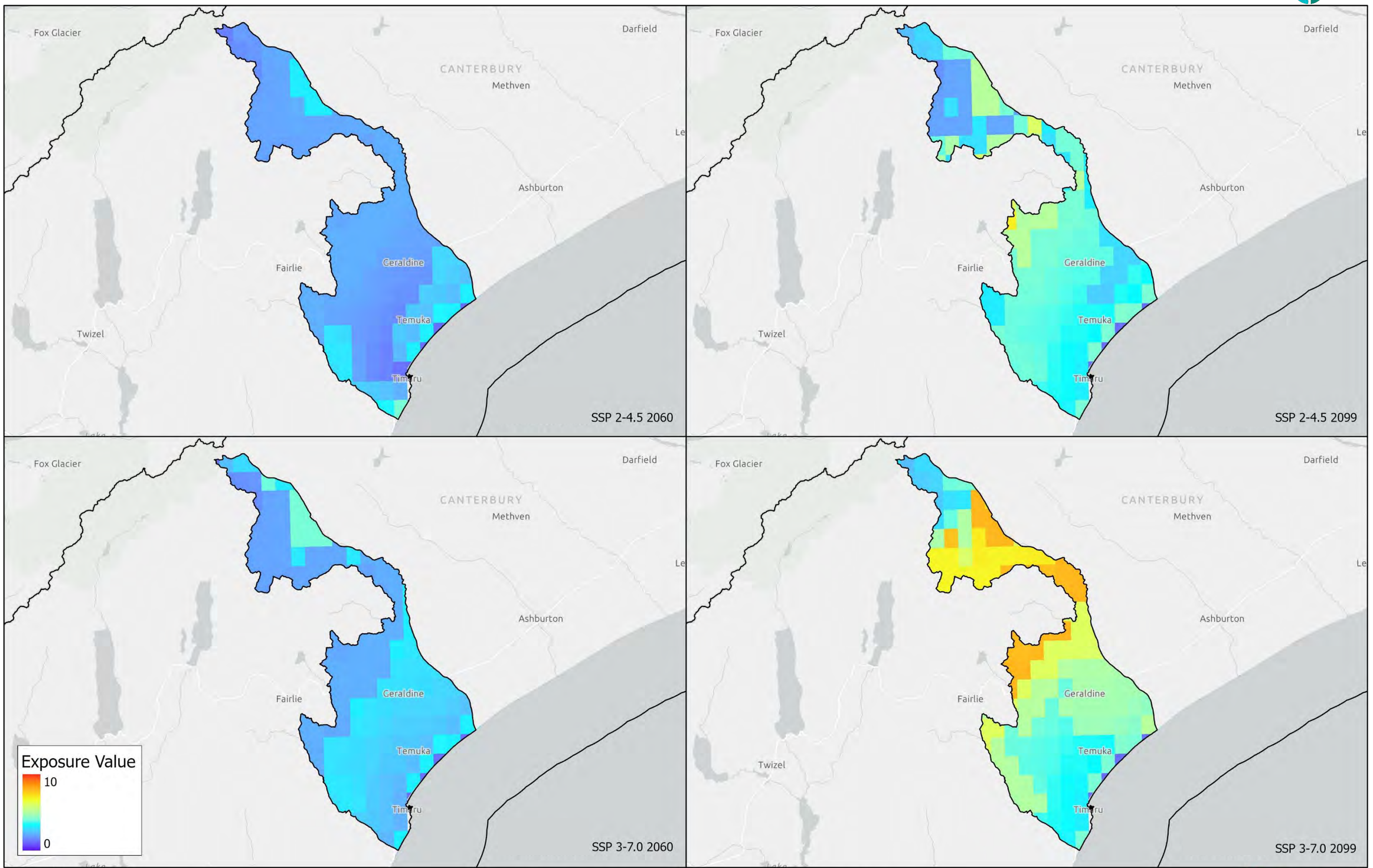
Figure 10f. Cumulative exposure in Selwyn district

Colour value indicates the number of climate hazards to which ecosystems are exposed.

0 50 100 Km

Wildlands © 2026
www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:1,100,000
Date: 7/01/2026
Cartographer: LW
Format: A3R



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: \\v64gis\GIS2\gis\Waitaha Climate Change\mxd\
File: Figure_CumulativeExposure_Timaru.mxd

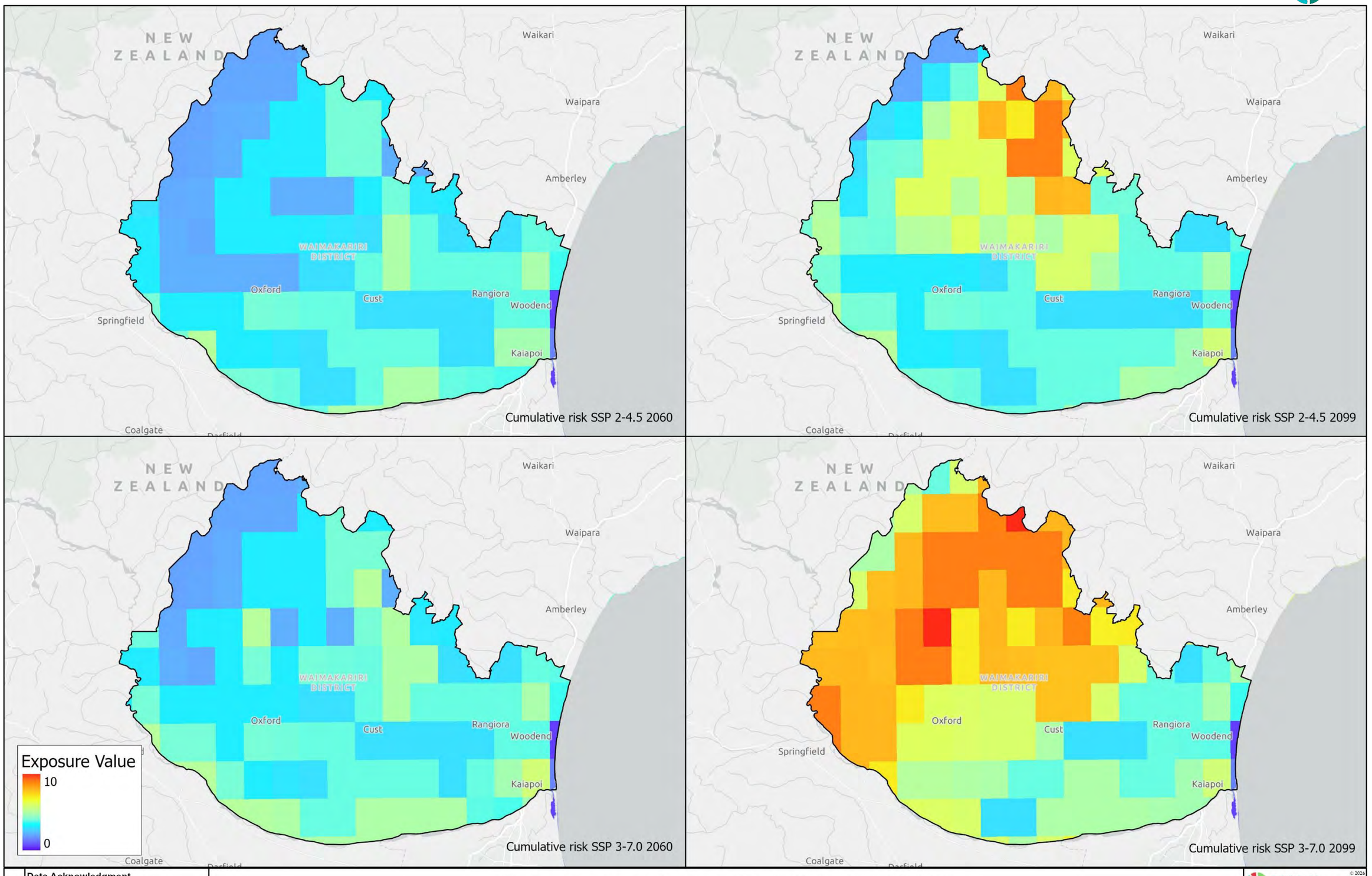
Figure 10g. Cumulative exposure in Timaru district

Colour value indicates the number of climate hazards to which ecosystems are exposed.

0 50 100 Km

© 2026 Wildlands www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:1,000,000
Date: 7/01/2026
Cartographer: LW
Format: A3R



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: \\v64gis\GIS2\gis\Waitaha Climate Change\mxd\
File: Figure_CumulativeExposure_Waimakariri.mxd

N

Figure 10h. Cumulative exposure in Waimakariri district

Colour value indicates the number of climate hazards to which ecosystems are exposed.

0 50 100 Km

© 2026 Wildlands www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:500,000
Date: 7/01/2026
Cartographer: LW
Format: A3R

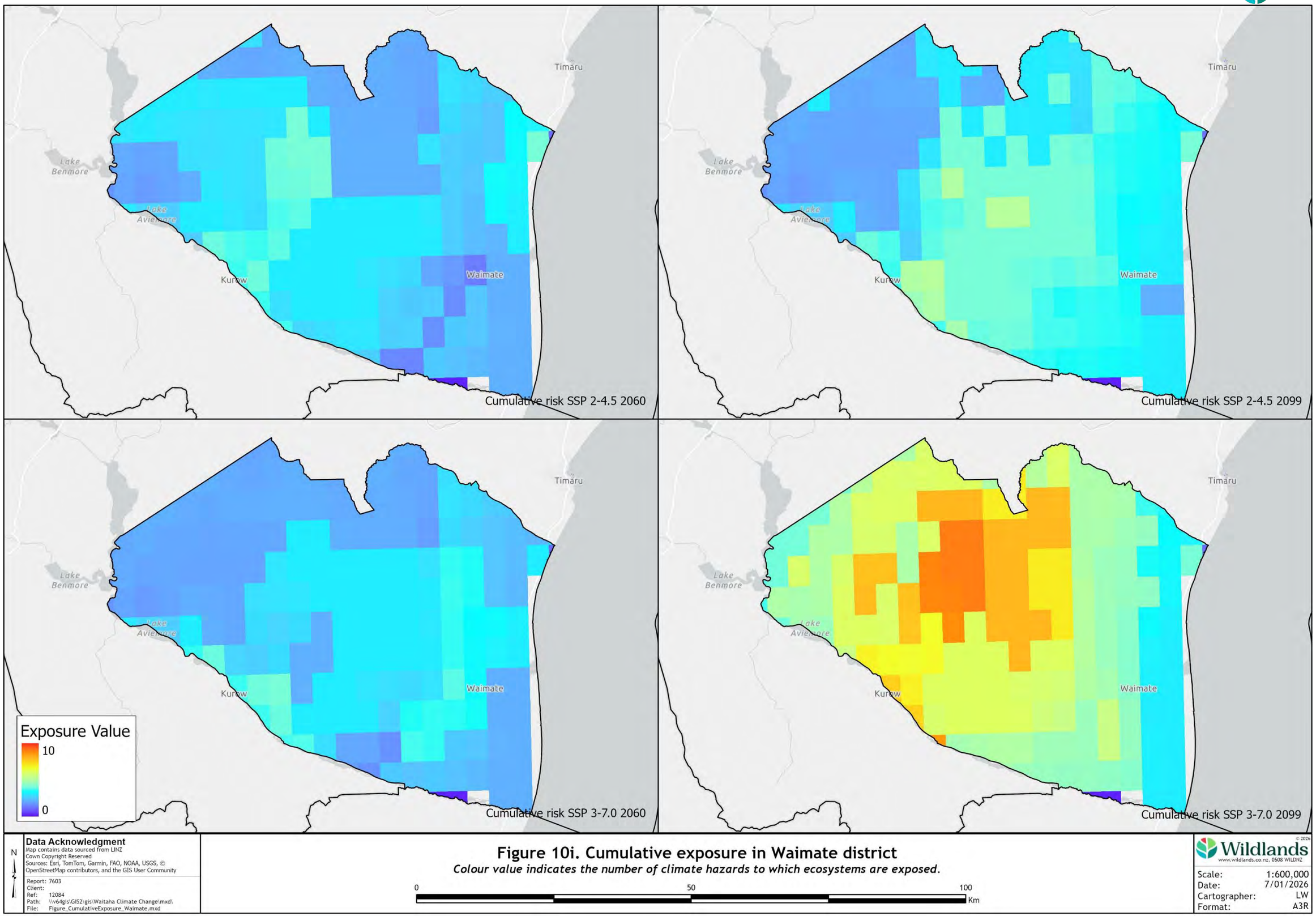
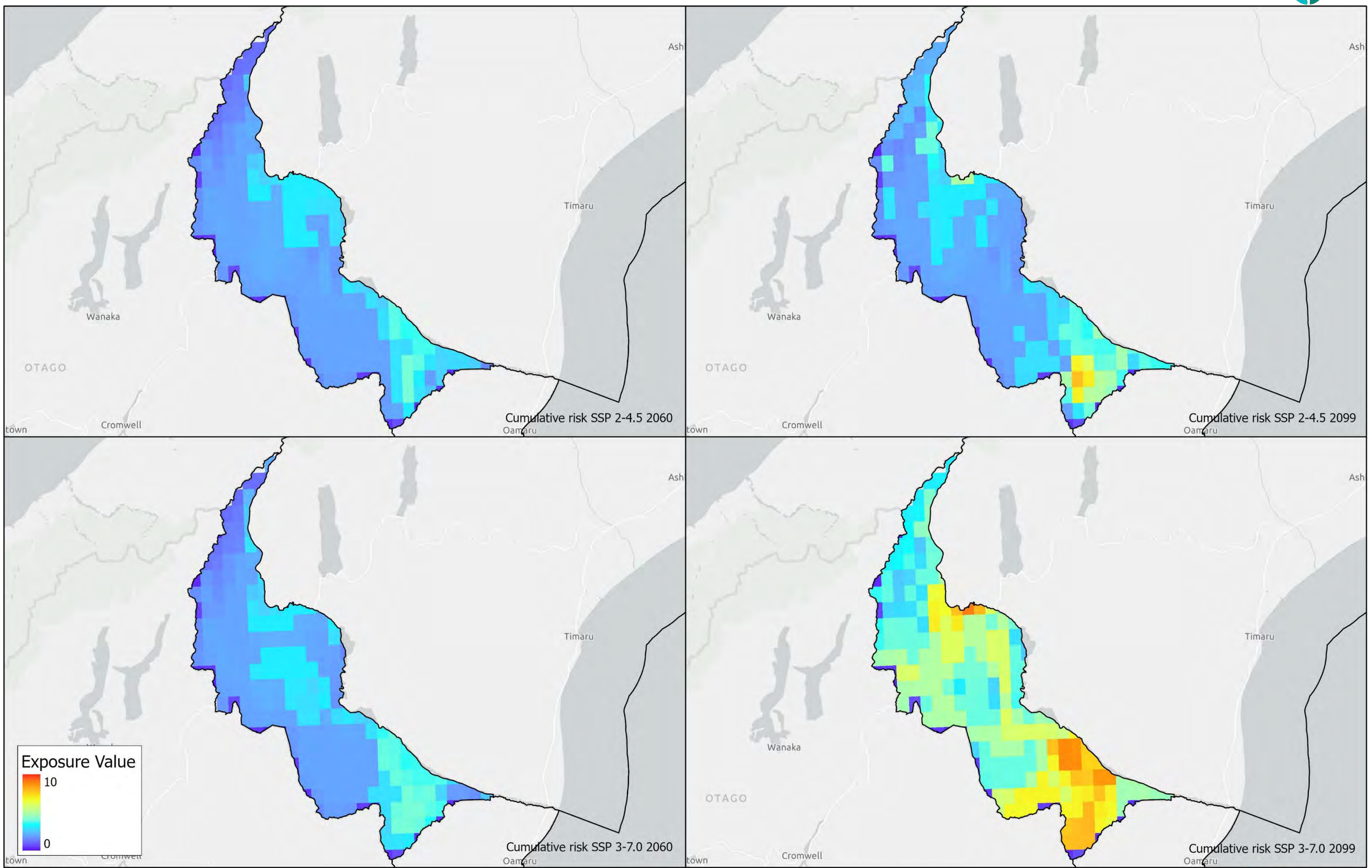


Figure 10i. Cumulative exposure in Waimate district

Colour value indicates the number of climate hazards to which ecosystems are exposed.



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: \\v64gis\GIS2\gis\Waitaha Climate Change\mxd\
File: Figure_CumulativeExposure_Waitaki.mxd

Figure 10j. Cumulative exposure in Waitaki district

Colour value indicates the number of climate hazards to which ecosystems are exposed.

0 50 100 Km

© 2026 Wildlands www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:1,200,000
Date: 7/01/2026
Cartographer: LW
Format: A3R

8.2 Vulnerability

The vulnerability of ecosystems is mapped in **Figure 11**, together with exposure and adaptive capacity from which vulnerability is assessed. This figure shows that the vast majority of Waitaha Canterbury has a low vulnerability score. This is because ecosystems that show up very clearly on mapping at this scale are those that are common and large and thus less susceptible to climate change. Ecosystems with higher vulnerability are best viewed through examination of the GIS layers provided with this report. Of the ecosystems mapped, vulnerability scores were more varied than it appears on broad-scale mapping:

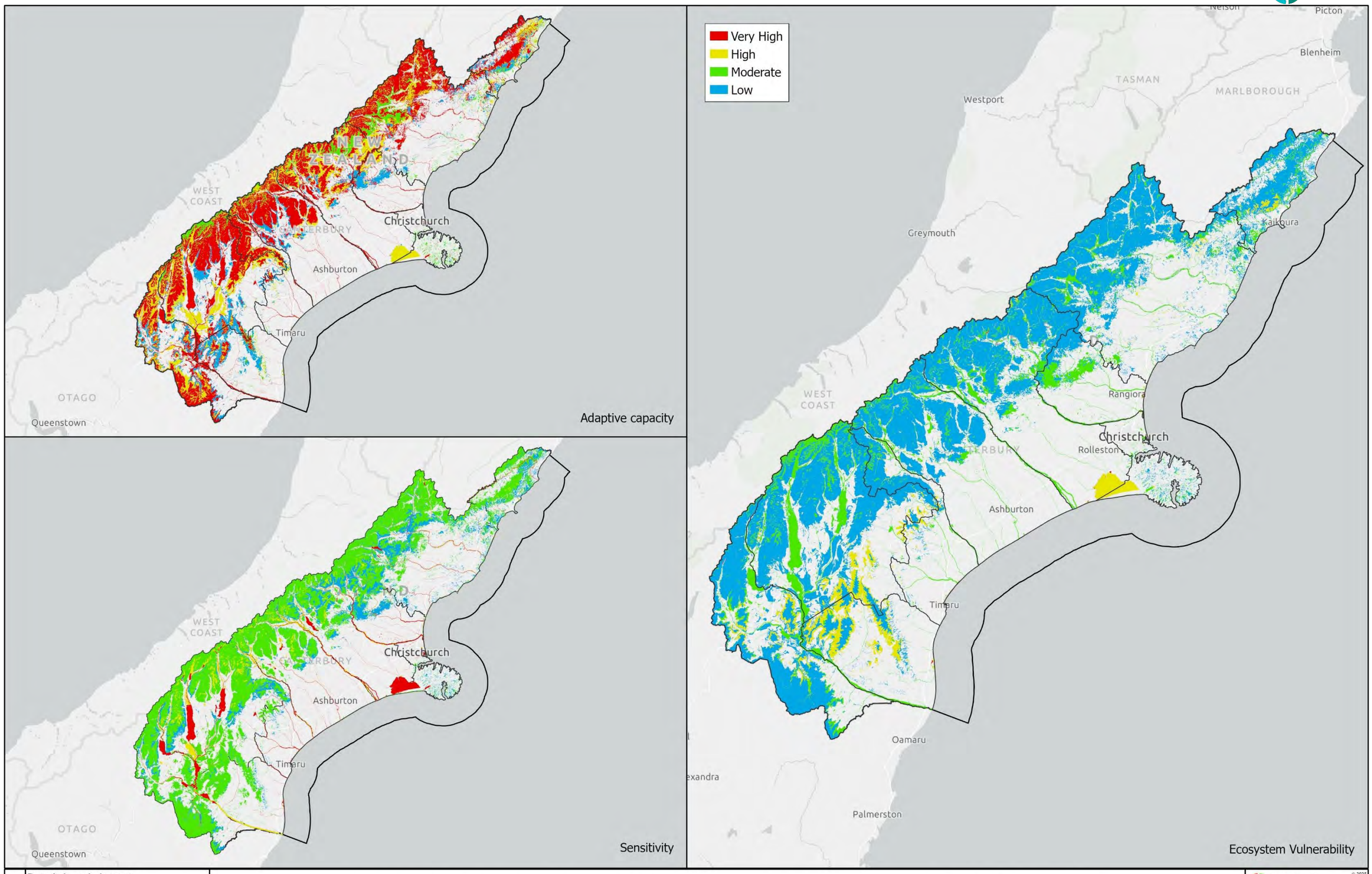
- 427 ecosystems were identified as having “Low” vulnerability.
- 235 were identified as “Moderate”.
- 76 were identified as “High”.
- 26 were identified as “Very High”.

Ecosystems for which vulnerability was modelled to be “Very High” were:

- Acidic and limestone coastal cliffs
- Most coastal wetland types
- Herbaceous freshwater vegetation (i.e. inland wetlands) on central poorly-drained recent soils.
- Some sand dune habitats.

These are all habitats with relatively restricted ranges. A much greater number of ecosystems were identified as having a “High” vulnerability. The sensitivity, adaptive capacity and vulnerability of ecosystems are provided for selected ecosystems (those that are not successional or degraded, or poorly defined) in **Table 11**.

Targeted discussion regarding the vulnerability of ecosystems is provided in the following section.



Data Acknowledgment
Map contains data sourced from LINZ
Cown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: E:\gis\Waitaha Climate Change\mxd\
File: Figure_Vulnerability.mxd

Figure 11. Adaptive capacity, sensitivity and vulnerability of ecosystems in Waitaha Canterbury

0 100 200 Km

© 2025 Wildlands www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:3,000,000
Date: 20/11/2025
Cartographer: LW
Format: A3R

Table 12—Vulnerability of selected ecosystems in Waitaha Canterbury to climate change hazards. These tables exclude successional/degraded habitats. Which are typically of lesser interest.

Ecosystem	Sensitivity	Adaptive capacity	Vulnerability
Acidic coastal cliffs	High	Low	Very High
Coastal wetland - Abandoned Channel	High	Low	Very High
Coastal wetland - Backswamp	Very High	Moderate	Very High
Coastal wetland - Channel	Very High	Moderate	Very High
Coastal wetland - Creek	Very High	Low	Very High
Coastal wetland - Depression	High	Low	Very High
Coastal wetland - Donga	High	Low	Very High
Coastal wetland - Drain	High	Low	Very High
Coastal wetland - Dune slack	Very High	Moderate	Very High
Coastal wetland - Flat	Very High	Moderate	Very High
Coastal wetland - Hollow	Very High	Low	Very High
Coastal wetland - Lake shore	High	Low	Very High
Coastal wetland - Levee	High	Low	Very High
Coastal wetland - Marginal	High	Low	Very High
Coastal wetland - Oxbow Lake	High	Low	Very High
Coastal wetland - Pond	Very High	Low	Very High
Coastal wetland - Shore	Very High	Low	Very High
Coastal wetland - Swale	Very High	Moderate	Very High
Coastal wetland - Tidal River	High	Low	Very High
Herbaceous Freshwater VegetationI3	High	Low	Very High
Herbaceous Freshwater VegetationI4	High	Low	Very High
Limestone coastal cliffs	Very High	Low	Very High
Sand or GravelL2	High	Low	Very High
Broadleaved Indigenous HardwoodsP5	Moderate	Low	High
Cave	High	Moderate	High
Coastal wetland - Basin	High	Moderate	High
Coastal wetland - Coastal Lagoon	Very High	High	High
Coastal wetland - Estuary	Very High	High	High
Coastal wetland - Floodplain	Very High	High	High
Coastal wetland - Hapua	High	Moderate	High
Coastal wetland - Riparian	High	Moderate	High
DunelandsJ2	Moderate	Low	High
Ephemeral wetlands	Very High	High	High
Hall's totara/broadleaf forestM2	Moderate	Low	High
Hall's totara/broadleaf forestN1	Moderate	Low	High
Herbaceous Freshwater VegetationB8	High	Moderate	High
Herbaceous Freshwater VegetationK3	High	Moderate	High
Herbaceous Freshwater VegetationL2	Moderate	Low	High
Herbaceous Freshwater VegetationN5	High	Moderate	High
Herbaceous Freshwater VegetationN7	High	Moderate	High
Kahikatea-matai/tawa-mahoe forestB6	Moderate	Low	High
Kahikatea-matai/tawa-mahoe forestE3	Moderate	Low	High
Kahikatea-matai/tawa-mahoe forestK3	Moderate	Low	High
Kahikatea-pukatea-tawa forestF2	Moderate	Low	High
Kahikatea-totara forestI3	Moderate	Low	High
Matai-kahikatea-totara forestB6	Moderate	Low	High
Matai-kahikatea-totara forestE3	Moderate	Low	High
Matai-totara/black/mountain beech forestJ3	Moderate	Low	High
Mountain beech-red beech forestF2	Moderate	Low	High
Rimu-miro-totara/kamahi forestF2	Moderate	Low	High
Sand or GravelB7	Moderate	Low	High
Sand or GravelB9	Moderate	Low	High
Sand or GravelE1	Moderate	Low	High
Sand or GravelF1	Moderate	Low	High
Sand or GravelI4	Moderate	Low	High
Scrub, shrubland and tussock-grassland below treeline - FernlandK3	Moderate	Low	High
Scrub, shrubland and tussock-grassland below treeline - FernlandN4	Moderate	Low	High
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaJ2	Moderate	Low	High
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubP2	Moderate	Low	High
Acidic cliffs, scarps and tors	High	Very High	Moderate
Acidic scree	High	Very High	Moderate
Basic cliffs, scarps and tors	High	Very High	Moderate
Braided river	Very High	Very High	Moderate
Broadleaved Indigenous HardwoodsE4	Low	Low	Moderate
Broadleaved Indigenous HardwoodsJ2	Low	Low	Moderate
Broadleaved Indigenous HardwoodsQ2	Low	Low	Moderate
Broadleaved Indigenous HardwoodsR1	Moderate	Moderate	Moderate
Gravel or RockF3	Low	Low	Moderate
Gravel or RockM2	Low	Low	Moderate
Gravel or RockO2	Low	Low	Moderate
Hall's totara-miro/kamahi-southern rata broadleaf forestO2	Low	Low	Moderate
Hall's totara-miro/kamahi-southern rata broadleaf forestP2	Low	Low	Moderate
Hall's totara/broadleaf forestB3	Low	Low	Moderate
Hall's totara/broadleaf forestO1	Low	Low	Moderate
Hall's totara/broadleaf forestP2	Moderate	Moderate	Moderate
Hall's totara/silver-beech-kamahi-southern rata forestR1	Moderate	Moderate	Moderate
Herbaceous Freshwater VegetationB3	Moderate	Moderate	Moderate
Herbaceous Freshwater VegetationB9	Low	Low	Moderate
Herbaceous Freshwater VegetationE1	High	Very High	Moderate
Herbaceous Freshwater VegetationE3	Moderate	Moderate	Moderate
Herbaceous Freshwater VegetationE4	High	Very High	Moderate
Herbaceous Freshwater VegetationJ2	High	Very High	Moderate
Herbaceous Freshwater VegetationJ3	Low	Low	Moderate
Herbaceous Freshwater VegetationK1	High	Very High	Moderate
Herbaceous Freshwater VegetationK2	Low	Low	Moderate
Herbaceous Freshwater VegetationK4	High	Very High	Moderate
Herbaceous Freshwater VegetationN1	High	High	Moderate

Ecosystem	Sensitivity	Adaptive capacity	Vulnerability
Herbaceous Freshwater VegetationN2	High	Very High	Moderate
Herbaceous Freshwater VegetationN3	High	High	Moderate
Herbaceous Freshwater VegetationP1	Moderate	Moderate	Moderate
Herbaceous Freshwater VegetationP5	Low	Low	Moderate
Herbaceous Saline Vegetation	High	Very High	Moderate
Indigenous ForestK4	Low	Low	Moderate
Indigenous ForestN6	Low	Low	Moderate
Indigenous ForestN8	Low	Low	Moderate
Indigenous ForestP3	Low	Low	Moderate
Indigenous ForestQ2	Low	Low	Moderate
Kahikatea-matai/tawa-mahoe forestF2	Low	Low	Moderate
Kahikatea-matai/tawa-mahoe forestF3	Moderate	Moderate	Moderate
Kahikatea-matai/tawa-mahoe forestJ2	Moderate	Moderate	Moderate
Kahikatea-matai/tawa-mahoe forestJ3	Low	Low	Moderate
Kahikatea-pukatea-tawa forestB6	Low	Low	Moderate
Kahikatea-pukatea-tawa forestB7	Low	Low	Moderate
Kahikatea-pukatea-tawa forestE1	Moderate	Moderate	Moderate
Kahikatea-pukatea-tawa forestF3	Moderate	Moderate	Moderate
Kahikatea-pukatea-tawa forestJ3	Moderate	Moderate	Moderate
Kahikatea-pukatea-tawa forestN1	Moderate	Moderate	Moderate
Kahikatea-pukatea-tawa forestN3	Low	Low	Moderate
Kahikatea-totara forestJ2	Low	Low	Moderate
Kahikatea-totara forestN1	Low	Low	Moderate
Lake margin wetlands	Very High	Very High	Moderate
Lake or Pond	Very High	Very High	Moderate
limestone cliffs, scarps and tors	High	Very High	Moderate
Matai-kahikatea-totara forestF3	Moderate	Moderate	Moderate
Matai-kahikatea-totara forestL1	Moderate	Moderate	Moderate
Matai-kahikatea-totara forestQ4	Low	Low	Moderate
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestB3	Low	Low	Moderate
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestB8	Low	Low	Moderate
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestE3	Moderate	Moderate	Moderate
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestK3	Low	Low	Moderate
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestN1	Low	Low	Moderate
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestO1	Low	Low	Moderate
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestP1	Low	Low	Moderate
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestP5	Low	Low	Moderate
Matai-totara/black/mountain beech forestE3	Moderate	Moderate	Moderate
Matai-totara/black/mountain beech forestE4	Low	Low	Moderate
Matai-totara/black/mountain beech forestF2	Moderate	Moderate	Moderate
Matai-totara/black/mountain beech forestN2	Low	Low	Moderate
Matai-totara/black/mountain beech forestN3	Low	Low	Moderate
moraine	High	High	Moderate
Mountain beech-red beech forestB3	Low	Low	Moderate
Mountain beech-red beech forestK1	Moderate	Moderate	Moderate
Mountain beech-red beech forestP5	Low	Low	Moderate
Mountain beech forestE3	Moderate	Moderate	Moderate
Mountain beech forestF2	Low	Low	Moderate
Mountain beech forestF3	Low	Low	Moderate
Mountain beech forestR1	Moderate	Moderate	Moderate
outwash gravels	High	High	Moderate
Permanent Snow and IceT1	Moderate	Moderate	Moderate
quartzose cliffs, scarps and tors	High	Very High	Moderate
Red beech-silver beech forestE4	Moderate	Moderate	Moderate
Rimu-matai-miro-totara/kamahi forestF2	Low	Low	Moderate
Rimu-matai-miro-totara/kamahi forestJ3	Low	Low	Moderate
Rimu-matai-miro-totara/kamahi forestK1	Low	Low	Moderate
Rimu-matai-miro-totara/kamahi forestP1	Low	Low	Moderate
Rimu-miro/kamahi-red beech-hard beech forestE4	Low	Low	Moderate
Rimu-miro/kamahi-red beech-hard beech forestF2	Low	Low	Moderate
Rimu-miro/kamahi-red beech-hard beech forestF3	Low	Low	Moderate
Rimu-miro/kamahi-red beech-hard beech forestR1	Moderate	Moderate	Moderate
Rimu/tawa-kamahi forestF2	Low	Low	Moderate
Rimu/tawa-kamahi forestK1	Low	Low	Moderate
Rimu/tawa-kamahi forestN2	Low	Low	Moderate
Riparian	Very High	Very High	Moderate
River	Very High	Very High	Moderate
River - 4	Very High	Very High	Moderate
River - 5	Very High	Very High	Moderate
River - 6	Very High	Very High	Moderate
River - 7	Very High	Very High	Moderate
River - 8	High	Very High	Moderate
Sand or GravelB3	Low	Low	Moderate
Sand or GravelB8	Moderate	Moderate	Moderate
Sand or GravelE4	Moderate	Moderate	Moderate
Sand or GravelF2	Low	Low	Moderate
Sand or GravelF3	Moderate	Moderate	Moderate
Sand or GravelI3	Low	Low	Moderate
Sand or GravelJ2	Moderate	Moderate	Moderate
Sand or GravelJ3	Moderate	Moderate	Moderate
Sand or GravelL1	Low	Low	Moderate
Sand or GravelN3	Low	Low	Moderate
Sand or GravelN6	Low	Low	Moderate
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaE4	Moderate	Moderate	Moderate
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubK1	Moderate	Moderate	Moderate
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubK3	Low	Low	Moderate
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubL1	Low	Low	Moderate
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN3	Low	Low	Moderate
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubP1	Moderate	Moderate	Moderate
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandE4	Low	Low	Moderate

Ecosystem	Sensitivity	Adaptive capacity	Vulnerability
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandP2	Moderate	Moderate	Moderate
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandK2	Low	Low	Moderate
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandK3	Low	Low	Moderate
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldP2	Moderate	Moderate	Moderate
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaE4	Low	Low	Moderate
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaK1	Low	Low	Moderate
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaP2	Low	Low	Moderate
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubR1	Low	Low	Moderate
Silver beech forestE1	Low	Low	Moderate
Silver beech forestE4	Moderate	Moderate	Moderate
Silver beech forestK1	Moderate	Moderate	Moderate
sinkhole	High	Very High	Moderate
snow banks	High	Very High	Moderate
tarn	High	Very High	Moderate
Wetlands	High	Very High	Moderate
WetlandsK4	Low	Low	Moderate
Broadleaved Indigenous HardwoodsB3	Moderate	High	Low
Broadleaved Indigenous HardwoodsE1	Low	High	Low
Broadleaved Indigenous HardwoodsF3	Low	Moderate	Low
Broadleaved Indigenous HardwoodsK1	Negligible	Low	Low
Broadleaved Indigenous HardwoodsN2	Negligible	Low	Low
Broadleaved Indigenous HardwoodsN4	Low	High	Low
Broadleaved Indigenous HardwoodsP1	Moderate	High	Low
Broadleaved Indigenous HardwoodsP2	Low	High	Low
Broadleaved Indigenous HardwoodsQ1	Low	High	Low
DunelandsB9	Negligible	Low	Low
Gravel or RockB3	Moderate	Very High	Low
Gravel or RockB8	Negligible	Very High	Low
Gravel or RockB9	Negligible	Low	Low
Gravel or RockE1	Moderate	Very High	Low
Gravel or RockE3	Low	High	Low
Gravel or RockE4	Moderate	Very High	Low
Gravel or RockF2	Low	Moderate	Low
Gravel or RockJ2	Moderate	Very High	Low
Gravel or RockJ3	Low	High	Low
Gravel or RockK1	Moderate	Very High	Low
Gravel or RockK2	Low	High	Low
Gravel or RockK3	Moderate	Very High	Low
Gravel or RockK4	Low	Moderate	Low
Gravel or RockL1	Low	High	Low
Gravel or RockN1	Low	Very High	Low
Gravel or RockN2	Moderate	Very High	Low
Gravel or RockN3	Moderate	Very High	Low
Gravel or RockN4	Low	Very High	Low
Gravel or RockN5	Low	Moderate	Low
Gravel or RockN6	Moderate	High	Low
Gravel or RockO1	Negligible	Moderate	Low
Gravel or RockP1	Moderate	Very High	Low
Gravel or RockP2	Moderate	Very High	Low
Gravel or RockP5	Moderate	High	Low
Gravel or RockQ1	Moderate	Very High	Low
Gravel or RockQ2	Moderate	Very High	Low
Gravel or RockR1	Moderate	Very High	Low
Gravel or RockT1	Moderate	High	Low
Hall's totara-miro-rimu/kamahi-silver beech-southern rata forestF3	Low	Moderate	Low
Hall's totara-miro/kamahi-southern rata broadleaf forestO1	Negligible	Low	Low
Hall's totara-miro/kamahi-southern rata broadleaf forestP5	Negligible	Low	Low
Hall's totara-miro/kamahi-southern rata broadleaf forestR1	Low	High	Low
Hall's totara/broadleaf forestE1	Moderate	Very High	Low
Hall's totara/broadleaf forestE3	Moderate	High	Low
Hall's totara/broadleaf forestE4	Moderate	Very High	Low
Hall's totara/broadleaf forestF3	Low	Moderate	Low
Hall's totara/broadleaf forestJ2	Low	High	Low
Hall's totara/broadleaf forestK1	Low	High	Low
Hall's totara/broadleaf forestK3	Low	High	Low
Hall's totara/broadleaf forestN2	Negligible	Moderate	Low
Hall's totara/broadleaf forestN3	Low	High	Low
Hall's totara/broadleaf forestO2	Negligible	Low	Low
Hall's totara/broadleaf forestP1	Moderate	Very High	Low
Hall's totara/broadleaf forestP5	Low	High	Low
Hall's totara/broadleaf forestQ1	Low	High	Low
Hall's totara/broadleaf forestQ2	Moderate	Very High	Low
Hall's totara/broadleaf forestQ4	Negligible	Low	Low
Hall's totara/broadleaf forestR1	Moderate	High	Low
Hall's totara/silver-beech-kamahi-southern rata forestP2	Negligible	Moderate	Low
Hall's totara/silver-beech-kamahi-southern rata forestP5	Negligible	Moderate	Low
Hall's totara/silver-beech-kamahi-southern rata forestQ1	Negligible	Low	Low
Herbaceous Freshwater VegetationL1	Moderate	High	Low
Herbaceous Freshwater VegetationN4	Moderate	High	Low
Herbaceous Freshwater VegetationN6	Moderate	High	Low
Herbaceous Freshwater VegetationQ1	Moderate	High	Low
Herbaceous Freshwater VegetationQ2	Moderate	High	Low
Indigenous ForestE1	Low	High	Low
Indigenous ForestE4	Moderate	High	Low
Indigenous ForestK1	Low	Moderate	Low
Indigenous ForestP1	Moderate	Very High	Low
Indigenous ForestP2	Moderate	High	Low
Indigenous ForestP5	Low	Moderate	Low
Indigenous ForestR1	Moderate	High	Low
Indigenous ForestT1	Moderate	High	Low

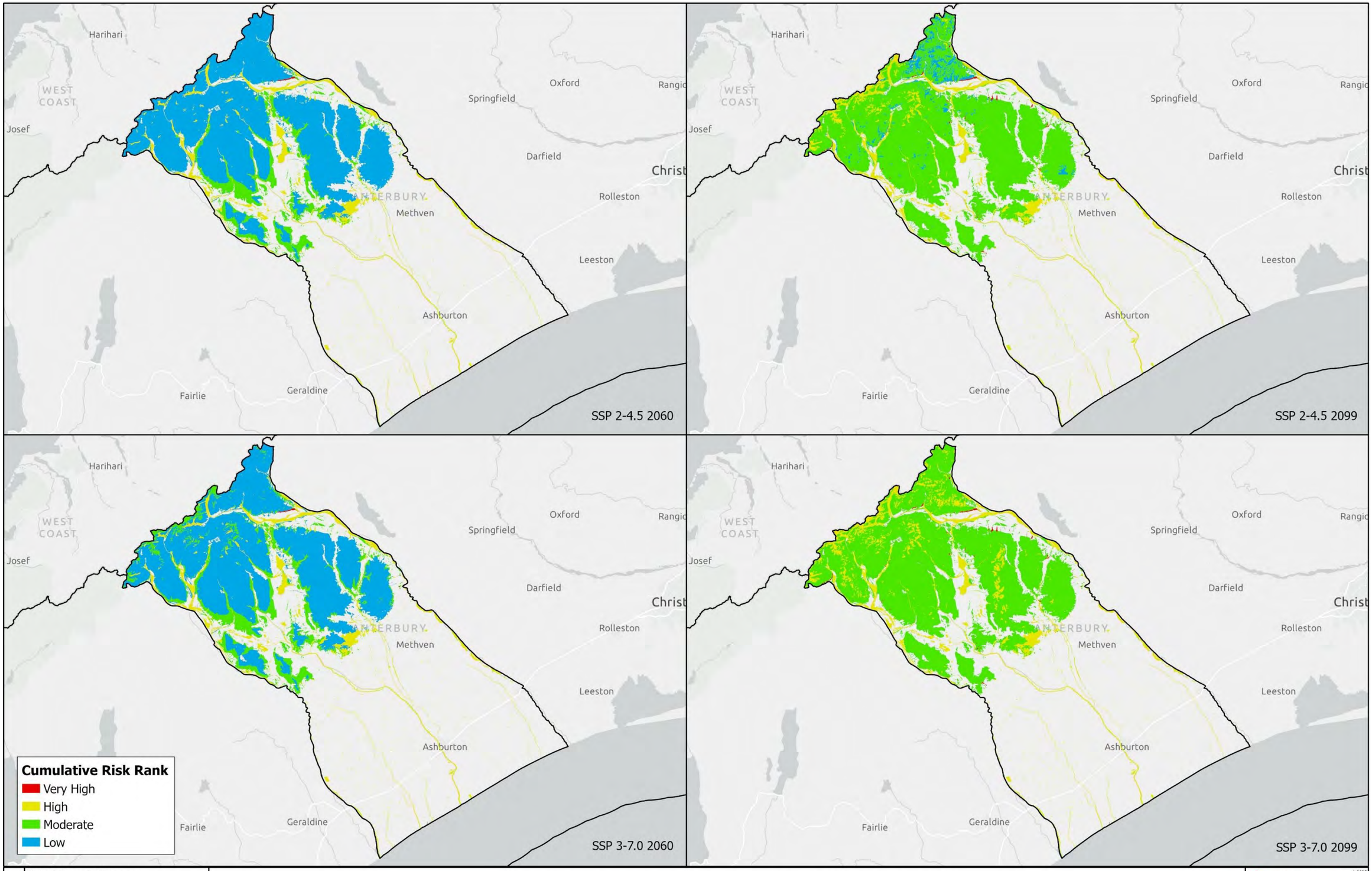
Ecosystem	Sensitivity	Adaptive capacity	Vulnerability
Kahikatea-matai/tawa-mahoe forestB3	Low	Moderate	Low
Kahikatea-matai/tawa-mahoe forestB8	Low	Moderate	Low
Kahikatea-matai/tawa-mahoe forestE1	Moderate	High	Low
Kahikatea-matai/tawa-mahoe forestN1	Low	Moderate	Low
Kahikatea-matai/tawa-mahoe forestN2	Negligible	Low	Low
Kahikatea-pukatea-tawa forestB3	Moderate	High	Low
Kahikatea-pukatea-tawa forestB8	Moderate	High	Low
Kahikatea-pukatea-tawa forestB9	Negligible	Low	Low
Kahikatea-pukatea-tawa forestJ2	Moderate	High	Low
Kahikatea-totara forestN3	Negligible	Low	Low
Matai-kahikatea-totara forestB3	Low	Very High	Low
Matai-kahikatea-totara forestB8	Low	High	Low
Matai-kahikatea-totara forestE1	Moderate	Very High	Low
Matai-kahikatea-totara forestE4	Low	High	Low
Matai-kahikatea-totara forestJ2	Moderate	High	Low
Matai-kahikatea-totara forestJ3	Low	Moderate	Low
Matai-kahikatea-totara forestK1	Negligible	Low	Low
Matai-kahikatea-totara forestK3	Negligible	Moderate	Low
Matai-kahikatea-totara forestN1	Low	Very High	Low
Matai-kahikatea-totara forestN2	Moderate	Very High	Low
Matai-kahikatea-totara forestN3	Moderate	Very High	Low
Matai-kahikatea-totara forestQ2	Moderate	Very High	Low
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestE1	Moderate	Very High	Low
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestE4	Low	High	Low
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestF3	Low	Moderate	Low
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestK1	Negligible	Moderate	Low
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestL1	Negligible	Low	Low
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestN2	Low	Moderate	Low
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestN3	Moderate	Very High	Low
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestQ2	Moderate	Very High	Low
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestQ4	Negligible	Low	Low
Matai-totara/black/mountain beech forestB3	Moderate	Very High	Low
Matai-totara/black/mountain beech forestB8	Low	Moderate	Low
Matai-totara/black/mountain beech forestE1	Moderate	Very High	Low
Matai-totara/black/mountain beech forestF3	Low	Moderate	Low
Matai-totara/black/mountain beech forestJ2	Low	Moderate	Low
Matai-totara/black/mountain beech forestK1	Negligible	Moderate	Low
Matai-totara/black/mountain beech forestN1	Low	High	Low
Matai-totara/black/mountain beech forestP1	Low	Moderate	Low
Matai-totara/black/mountain beech forestP2	Negligible	Moderate	Low
Matai-totara/black/mountain beech forestP5	Negligible	Moderate	Low
Matai-totara/black/mountain beech forestR1	Low	Moderate	Low
Mountain beech-red beech forestE1	Moderate	Very High	Low
Mountain beech-red beech forestE4	Moderate	High	Low
Mountain beech-red beech forestJ2	Negligible	Low	Low
Mountain beech-red beech forestP1	Moderate	Very High	Low
Mountain beech-red beech forestP2	Low	High	Low
Mountain beech-red beech forestR1	Low	Moderate	Low
Mountain beech forestB3	Moderate	Very High	Low
Mountain beech forestE1	Moderate	Very High	Low
Mountain beech forestE4	Moderate	Very High	Low
Mountain beech forestJ2	Moderate	Very High	Low
Mountain beech forestK1	Low	Very High	Low
Mountain beech forestN1	Low	Moderate	Low
Mountain beech forestN2	Negligible	Moderate	Low
Mountain beech forestP1	Moderate	Very High	Low
Mountain beech forestP2	Moderate	High	Low
Mountain beech forestP5	Low	Moderate	Low
Mountain beech forestQ1	Low	High	Low
Mountain beech forestQ2	Negligible	Low	Low
Permanent Snow and IceP1	Low	Moderate	Low
Permanent Snow and IceP2	Low	Moderate	Low
Permanent Snow and IceR1	Moderate	High	Low
Red beech-silver beech forestE1	Low	High	Low
Red beech-silver beech forestP1	Low	Moderate	Low
Rimu-matai-miro-totara/kamahi forestE1	Moderate	Very High	Low
Rimu-matai-miro-totara/kamahi forestE3	Low	Moderate	Low
Rimu-matai-miro-totara/kamahi forestE4	Low	High	Low
Rimu-matai-miro-totara/kamahi forestF3	Low	Moderate	Low
Rimu-matai-miro-totara/kamahi forestN2	Low	Moderate	Low
Rimu-miro-totara/kamahi forestE1	Negligible	Low	Low
Rimu-miro-totara/kamahi forestF3	Low	Moderate	Low
Rimu-miro/kamahi-red beech-hard beech forestE1	Low	High	Low
Rimu-miro/kamahi-red beech-hard beech forestP1	Negligible	Moderate	Low
Rimu-miro/kamahi-red beech-hard beech forestP5	Low	Moderate	Low
Rimu/tawa-kamahi forestE1	Moderate	High	Low
Rimu/tawa-kamahi forestF3	Low	Moderate	Low
Rimu/tawa-kamahi forestJ3	Negligible	Moderate	Low
Sand or GravelN1	Moderate	High	Low
Sand or GravelN2	Negligible	Low	Low
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldN4	Negligible	High	Low
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldP1	Low	High	Low
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldP2	Low	Moderate	Low
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldQ1	Low	High	Low
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaE1	Moderate	High	Low
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaK1	Low	High	Low
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaN4	Moderate	High	Low
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaN6	Negligible	Low	Low
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaP1	Moderate	High	Low
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaP2	Negligible	Low	Low

Ecosystem	Sensitivity	Adaptive capacity	Vulnerability
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaQ1	Low	Moderate	Low
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaQ2	Low	High	Low
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubE1	Negligible	Moderate	Low
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubE4	Low	High	Low
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubK4	Low	High	Low
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN4	Moderate	Very High	Low
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN5	Low	High	Low
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN6	Low	Very High	Low
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN7	Negligible	Low	Low
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubQ1	Low	High	Low
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubQ2	Moderate	High	Low
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandE1	Negligible	High	Low
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandN4	Low	Moderate	Low
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandP1	Moderate	Very High	Low
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandQ1	Low	Moderate	Low
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandQ2	Negligible	Low	Low
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandR1	Negligible	Moderate	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandE1	Negligible	High	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandE4	Moderate	High	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandJ2	Negligible	Low	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandK1	Moderate	High	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandN4	Moderate	Very High	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandN5	Negligible	Moderate	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandN6	Negligible	Moderate	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandP1	Moderate	Very High	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandP2	Low	Moderate	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandQ1	Moderate	High	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandQ2	Moderate	High	Low
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandR1	Low	Moderate	Low
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldP1	Moderate	Very High	Low
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldQ1	Moderate	High	Low
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldR1	Moderate	Very High	Low
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldT1	Low	Moderate	Low
Scrub, tussock-grassland and herbfield above treeline - FernlandP1	Low	Moderate	Low
Scrub, tussock-grassland and herbfield above treeline - FernlandQ1	Negligible	Moderate	Low
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaE1	Moderate	High	Low
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaP1	Low	High	Low
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaP5	Negligible	Low	Low
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaR1	Negligible	Moderate	Low
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubE1	Low	High	Low
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubE4	Low	High	Low
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubP1	Moderate	High	Low
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubQ1	Moderate	High	Low
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandE1	Low	High	Low
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandE4	Low	Moderate	Low
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandP1	Moderate	Very High	Low
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandP2	Moderate	High	Low
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandQ1	Moderate	High	Low
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandR1	Moderate	High	Low
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandT1	Negligible	Moderate	Low
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandE1	Low	High	Low
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandE3	Negligible	Low	Low
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandE4	Low	High	Low
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandP1	Moderate	Very High	Low
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandP2	Moderate	Very High	Low
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandQ1	Moderate	Very High	Low
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandR1	Moderate	Very High	Low
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandT1	Low	Moderate	Low
Silver beech forestF3	Negligible	Low	Low
Silver beech forestP1	Moderate	Very High	Low
Silver beech forestP2	Low	Moderate	Low
Silver beech forestP5	Low	Moderate	Low
Silver beech forestR1	Moderate	High	Low

8.3 Risk

Climate change risk is mapped by district in **Figures 12a-j.** Overall, ecosystem risk varies substantially by district. Please note that this assessment of risk considers cumulative hazard impact (see section 7.1.5). Therefore, it may underrepresent risk to ecosystems where they are particularly vulnerable to one specific climate hazard.

Below, risk, vulnerability and exposure are additionally discussed for broad groupings of ecosystem types.



Data Acknowledgment
Map contains data sourced from LINZ
Cown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

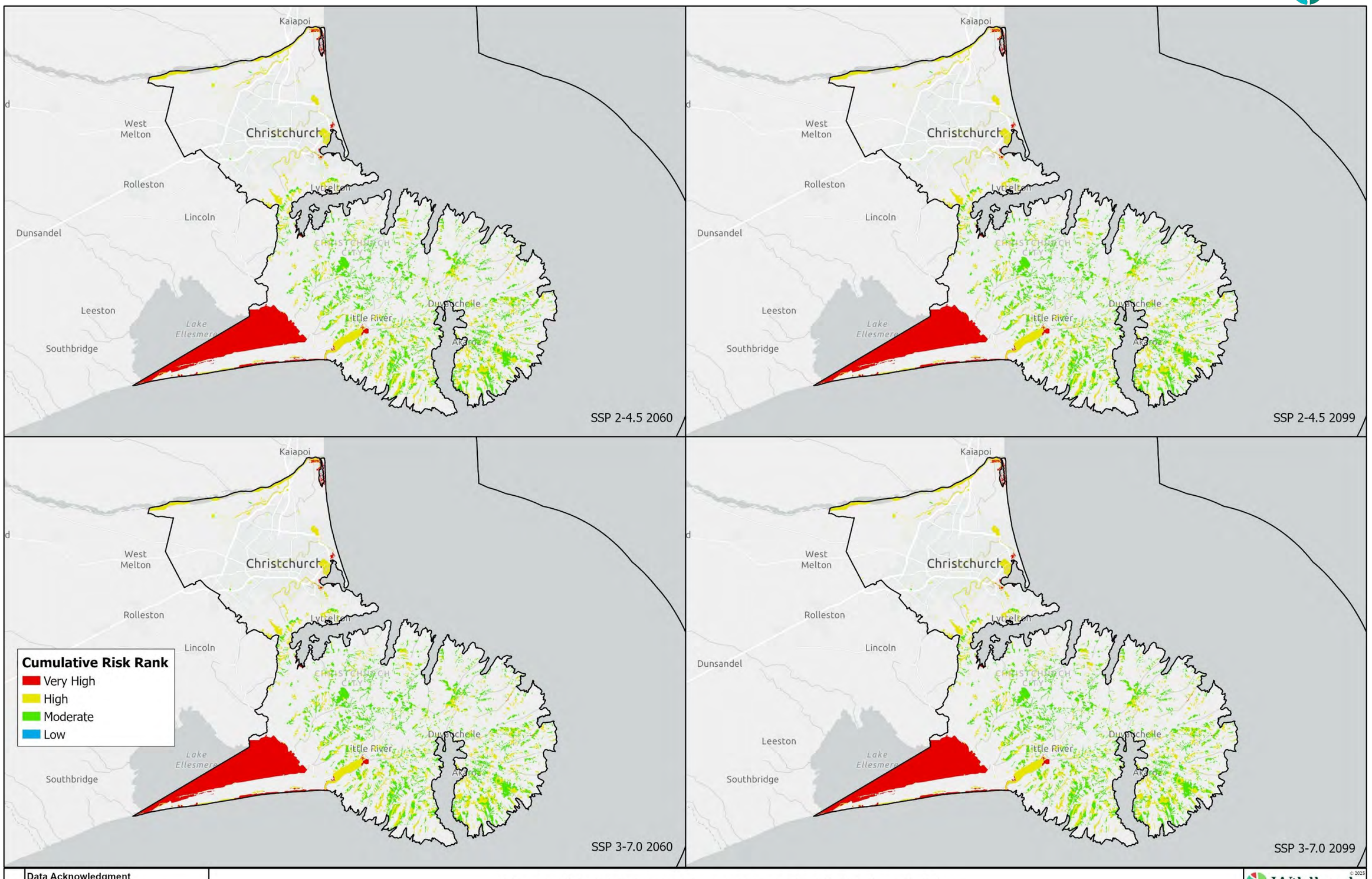
Report: 7603
Client:
Ref: 12084
Path: E:\gis\Waitaha Climate Change\mxd\
File: Figure_Risk_Ashburton.mxd

Figure 12a. Risk level of ecosystems in Ashburton District

0 50 100 Km

© 2025 Wildlands
www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:1,000,000
Date: 20/11/2025
Cartographer: LW
Format: A3R



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: E:\gis\Waitaha Climate Change\mxd\
File: Figure_Risk_Christchurch City.mxd

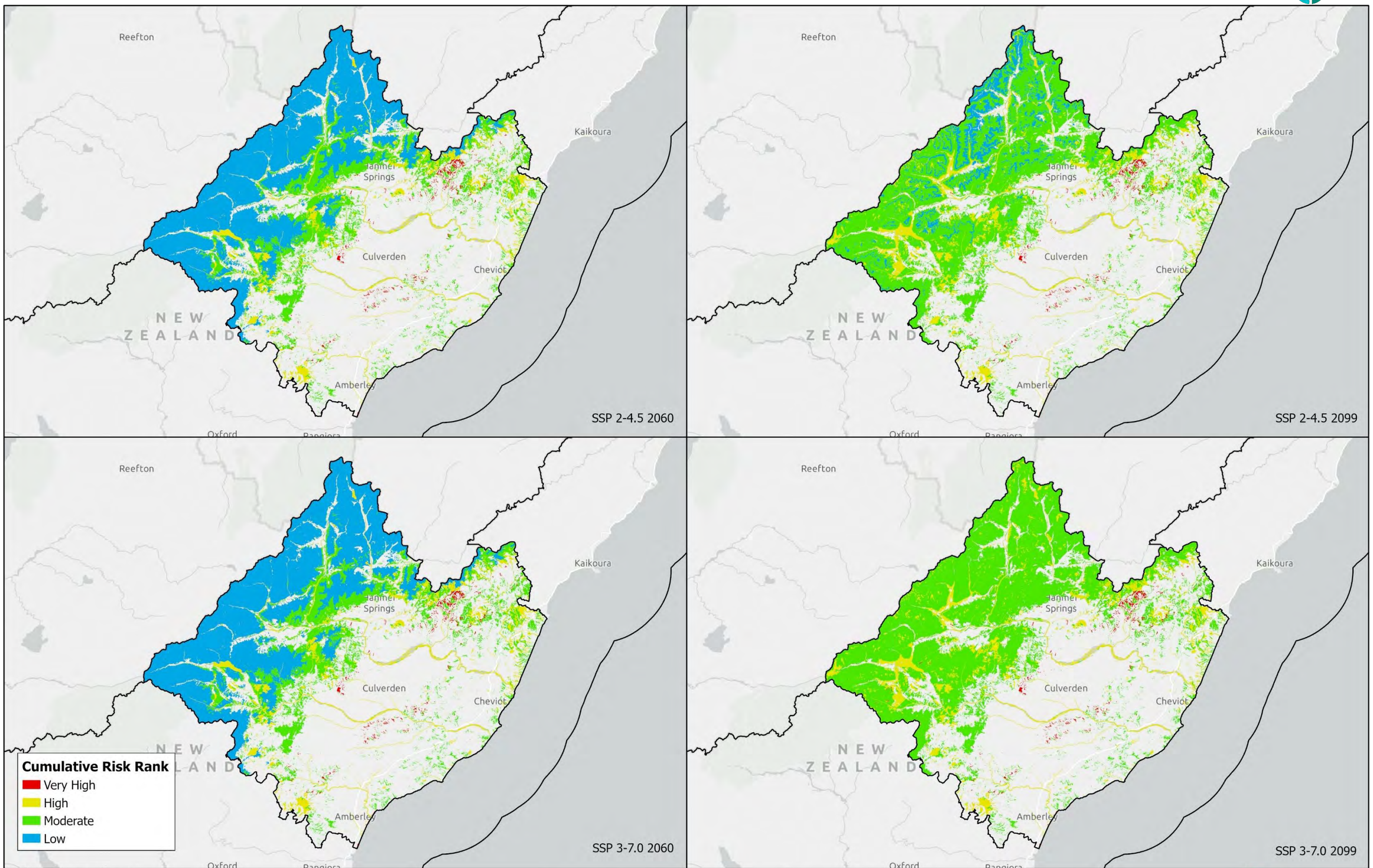
N

Figure 12b. Risk level of ecosystems in Christchurch City

0 50 100 Km

© 2025 Wildlands www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:500,000
Date: 20/11/2025
Cartographer: LW
Format: A3R



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: E:\gis\Waitaha Climate Change\mxd\
File: Figure_Risk_Hurunui.mxd

Figure 12c. Risk level of ecosystems in Hurunui

0 50 100 Km

© 2025 Wildlands www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:1,130,000
Date: 20/11/2025
Cartographer: LW
Format: A3R

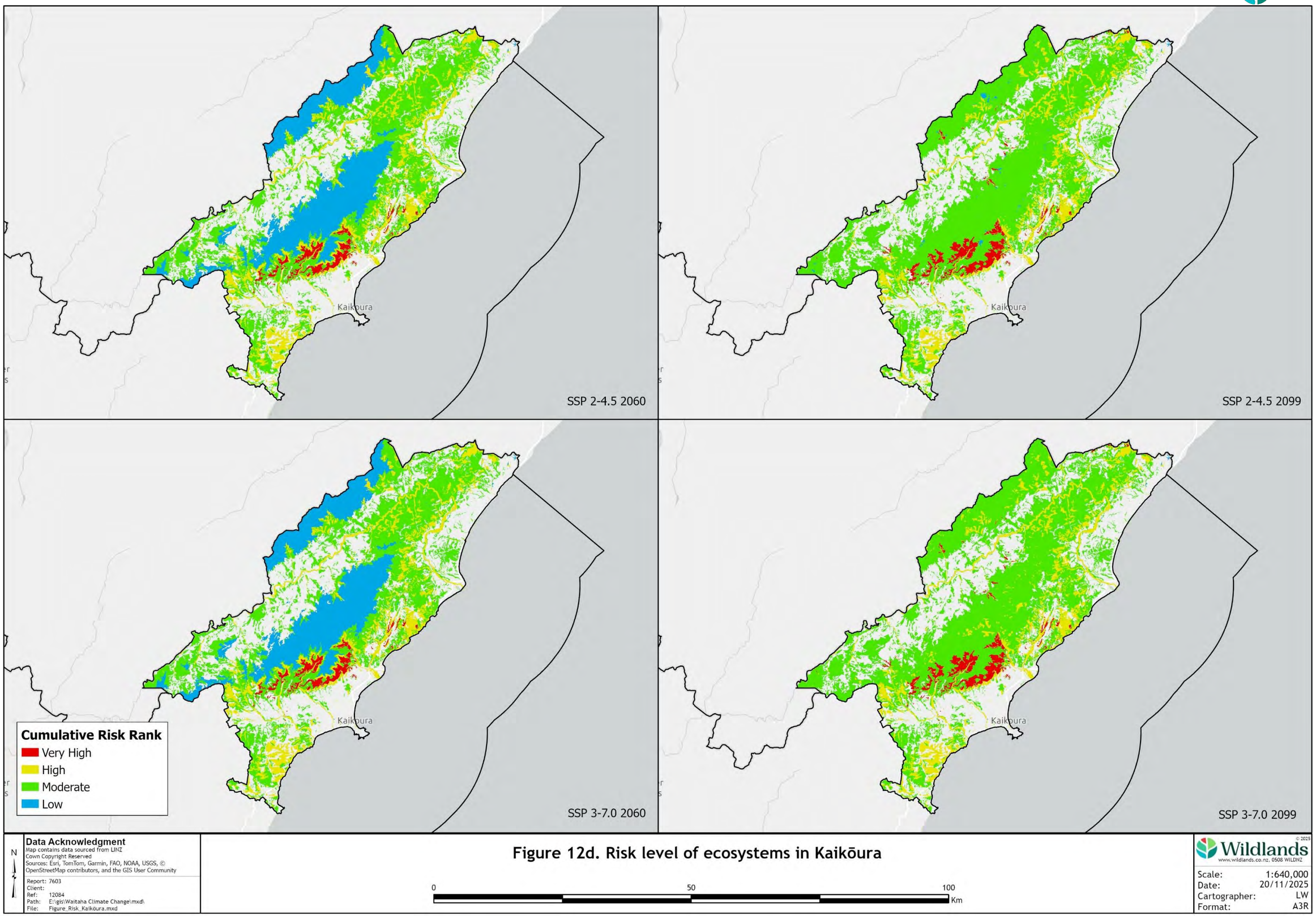
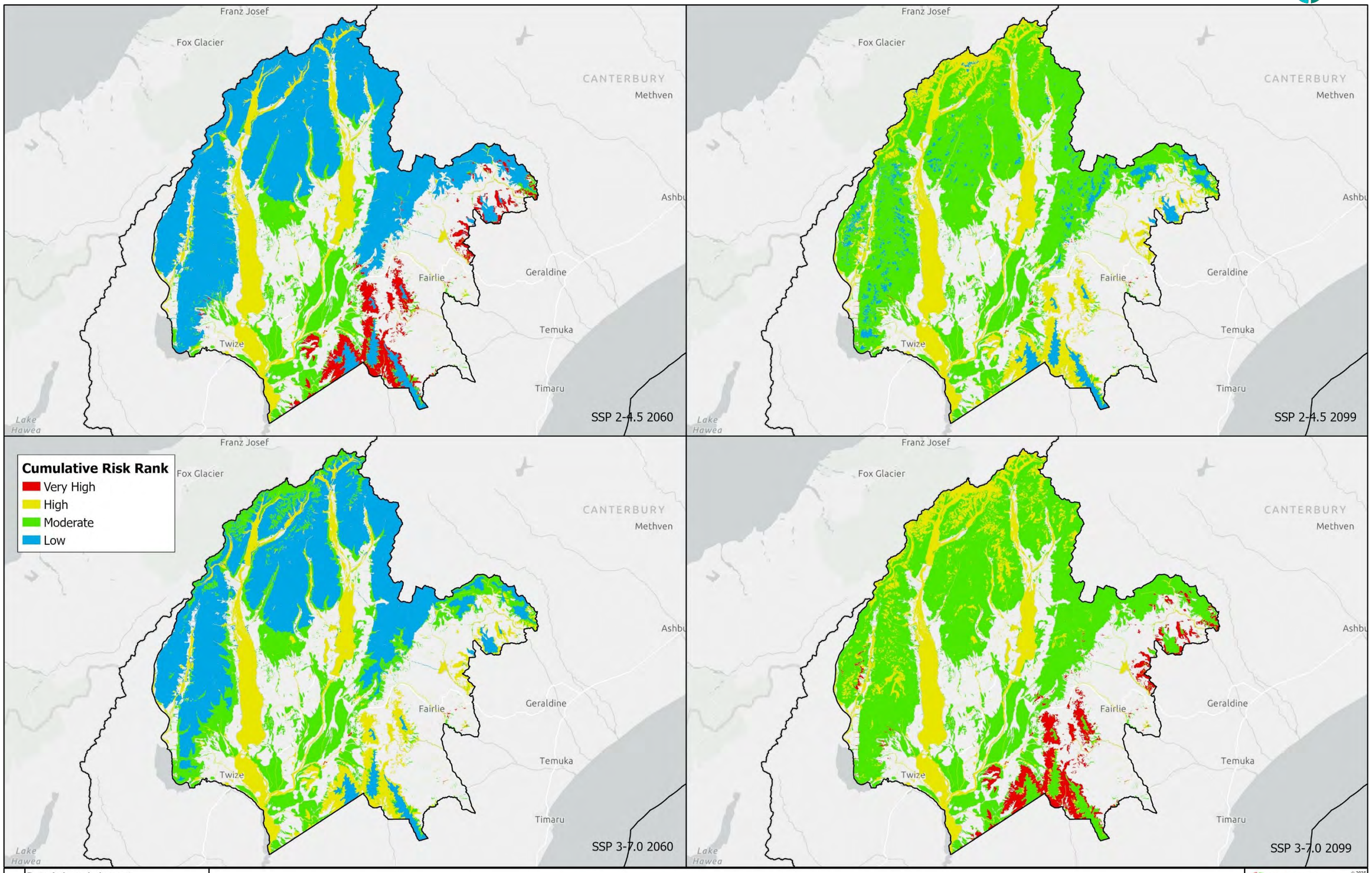


Figure 12d. Risk level of ecosystems in Kaikōura



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: E:\gis\Waitaha Climate Change\mxd\
File: Figure_Risk_Mackenzie.mxd

Figure 12e. Risk level of ecosystems in Mackenzie

0 50 100 Km

Wildlands © 2025
www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:1,000,000
Date: 20/11/2025
Cartographer: LW
Format: A3R

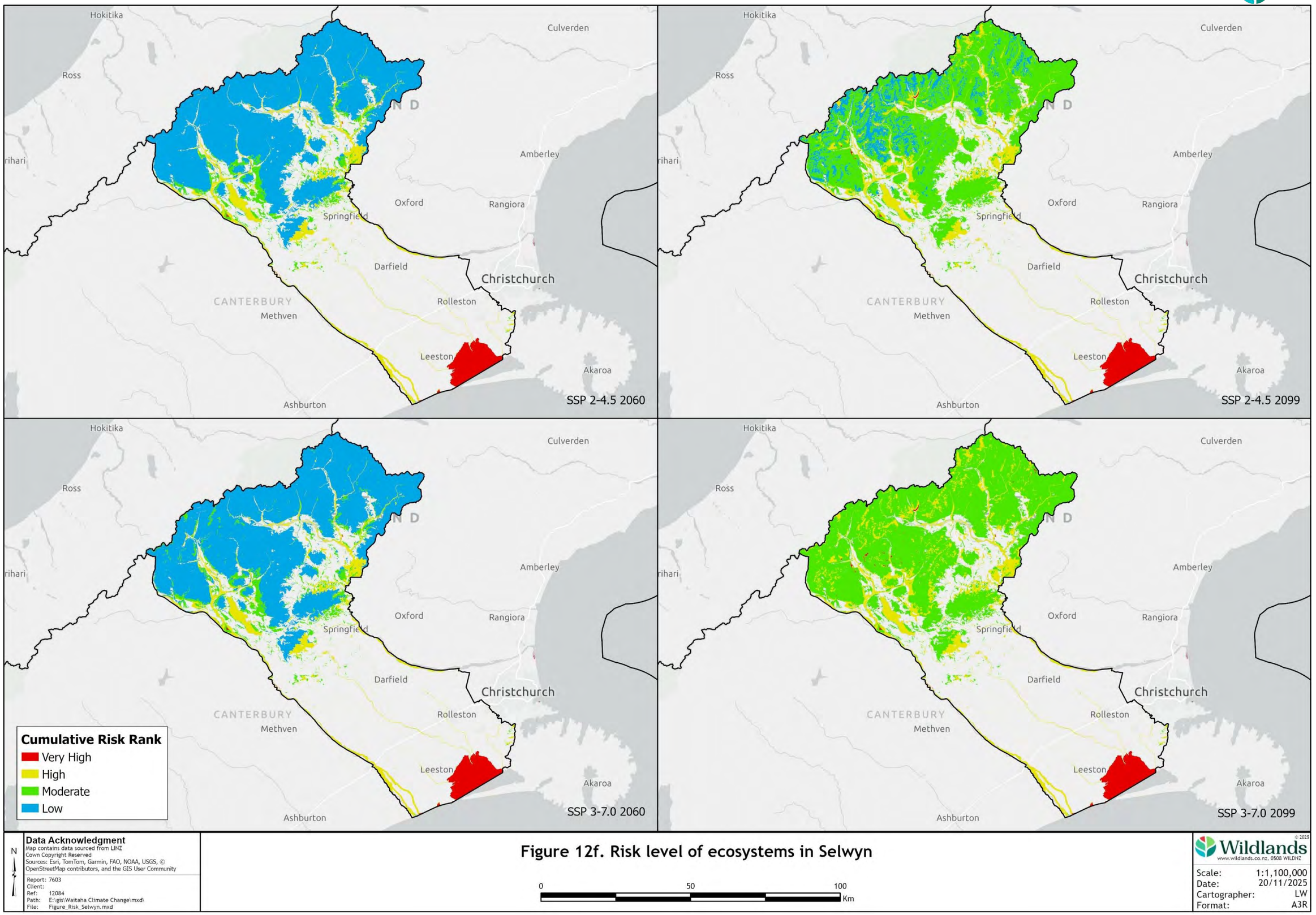
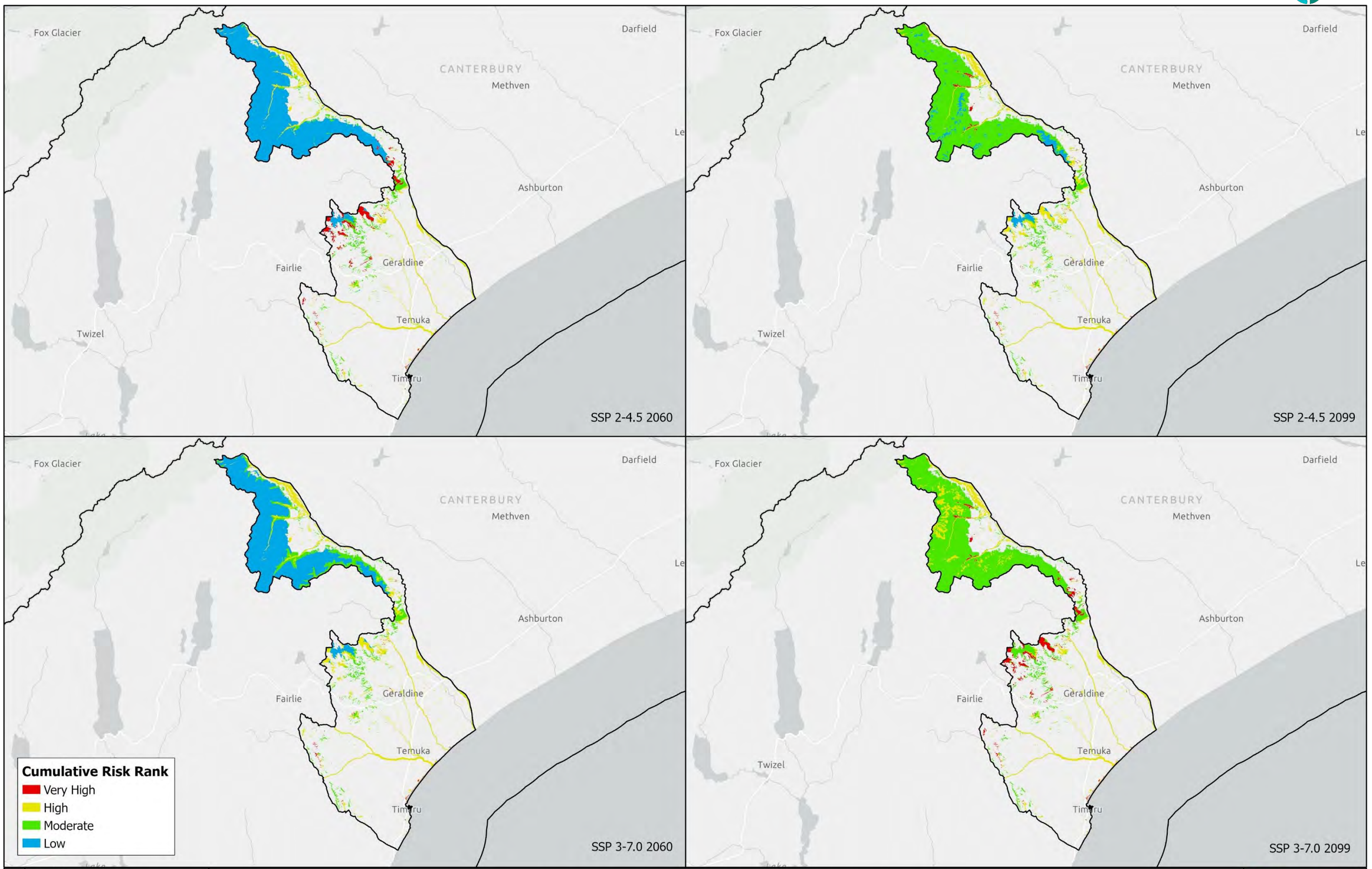


Figure 12f. Risk level of ecosystems in Selwyn



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

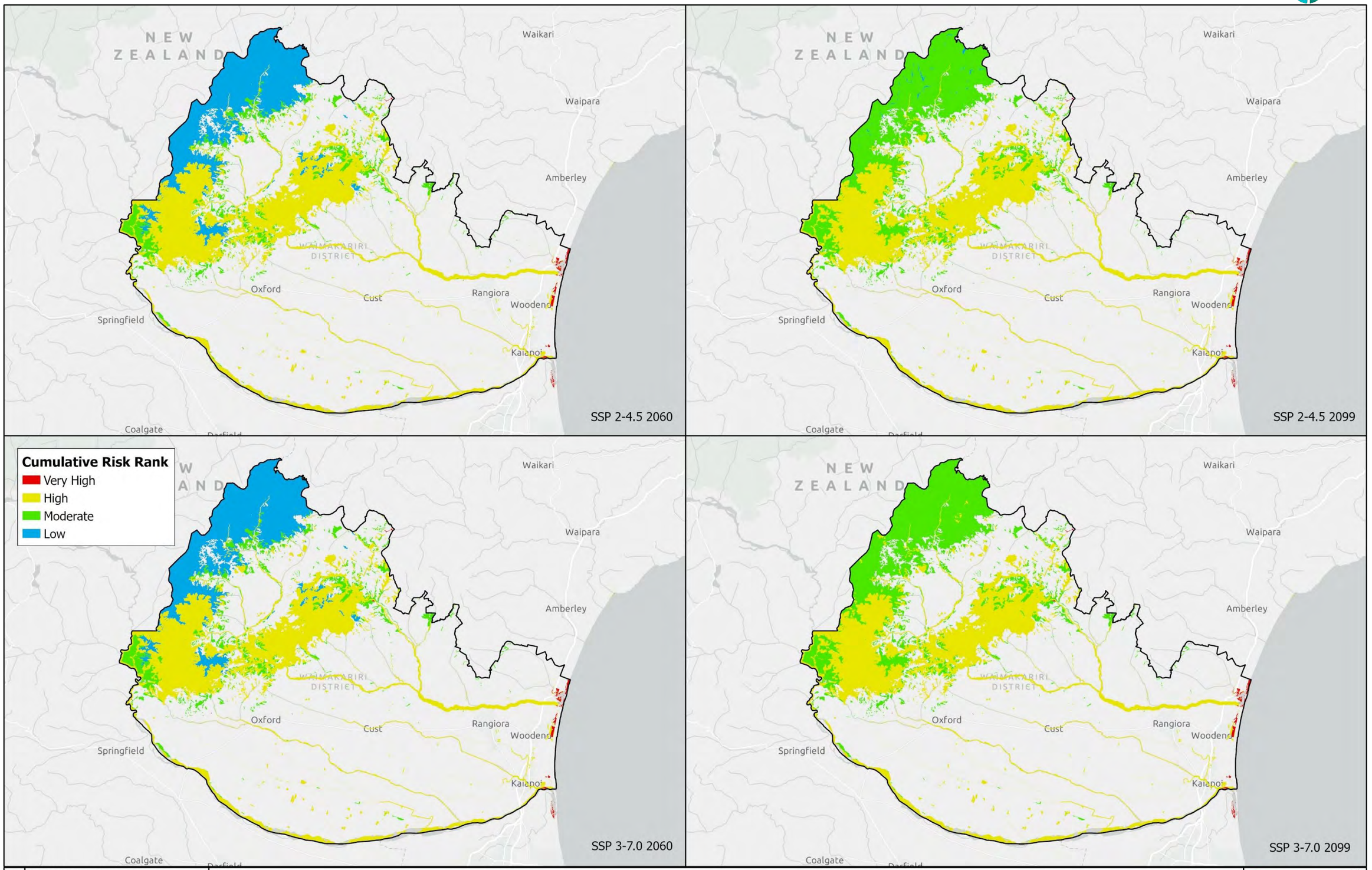
Report: 7603
Client:
Ref: 12084
Path: E:\gis\Waitaha Climate Change\mxd\
File: Figure_Risk_Timaru.mxd

Figure 12g. Risk level of ecosystems in Timaru

0 50 100 Km

© 2025 Wildlands
www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:1,000,000
Date: 20/11/2025
Cartographer: LW
Format: A3R



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: E:\gis\Waitaha Climate Change\mxd\
File: Figure_Risk_Waimakariri.mxd

Figure 12h. Risk level of ecosystems in Waimakariri

0 50 100 Km

© 2025 Wildlands www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:500,000
Date: 20/11/2025
Cartographer: LW
Format: A3R

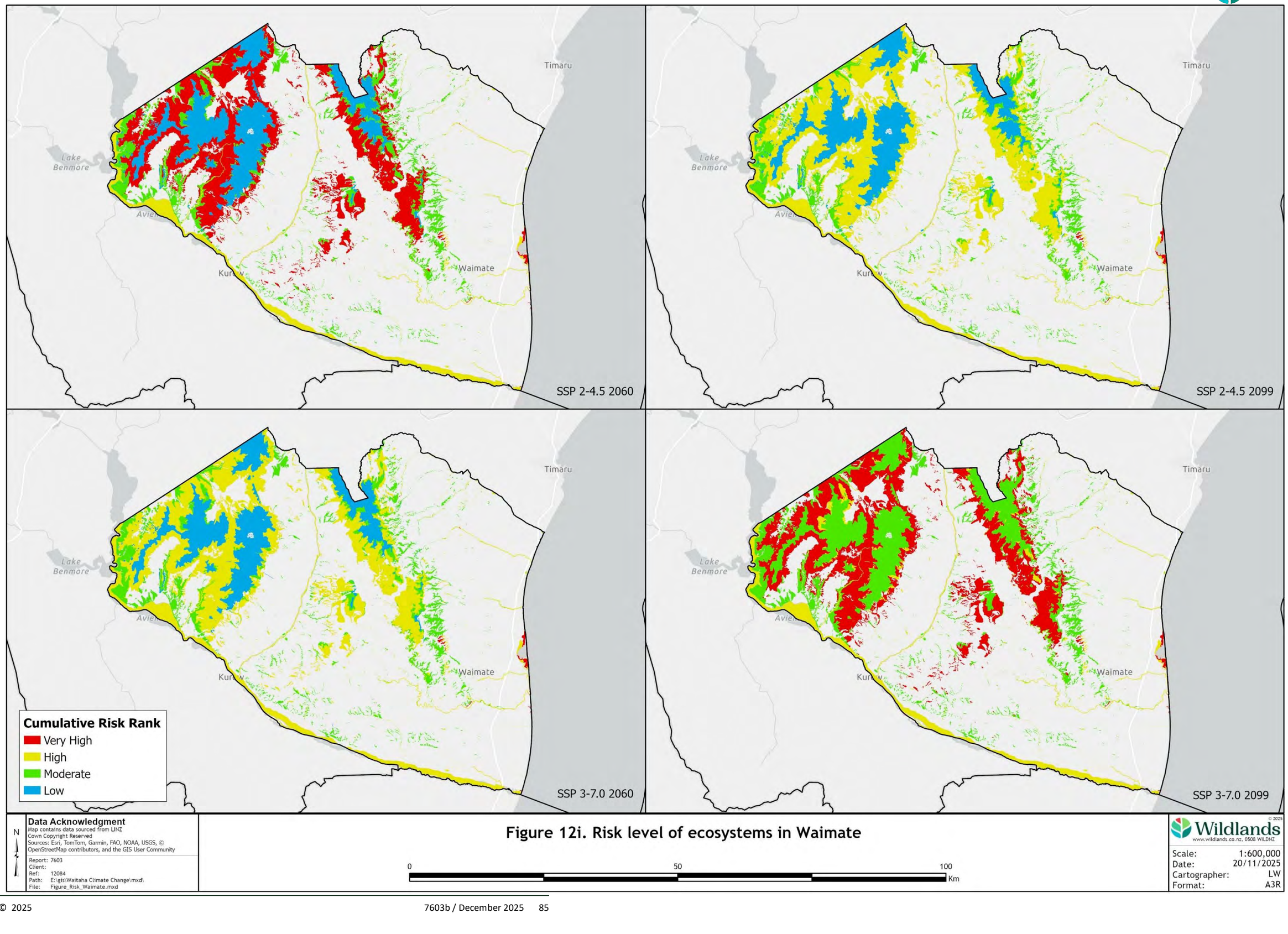
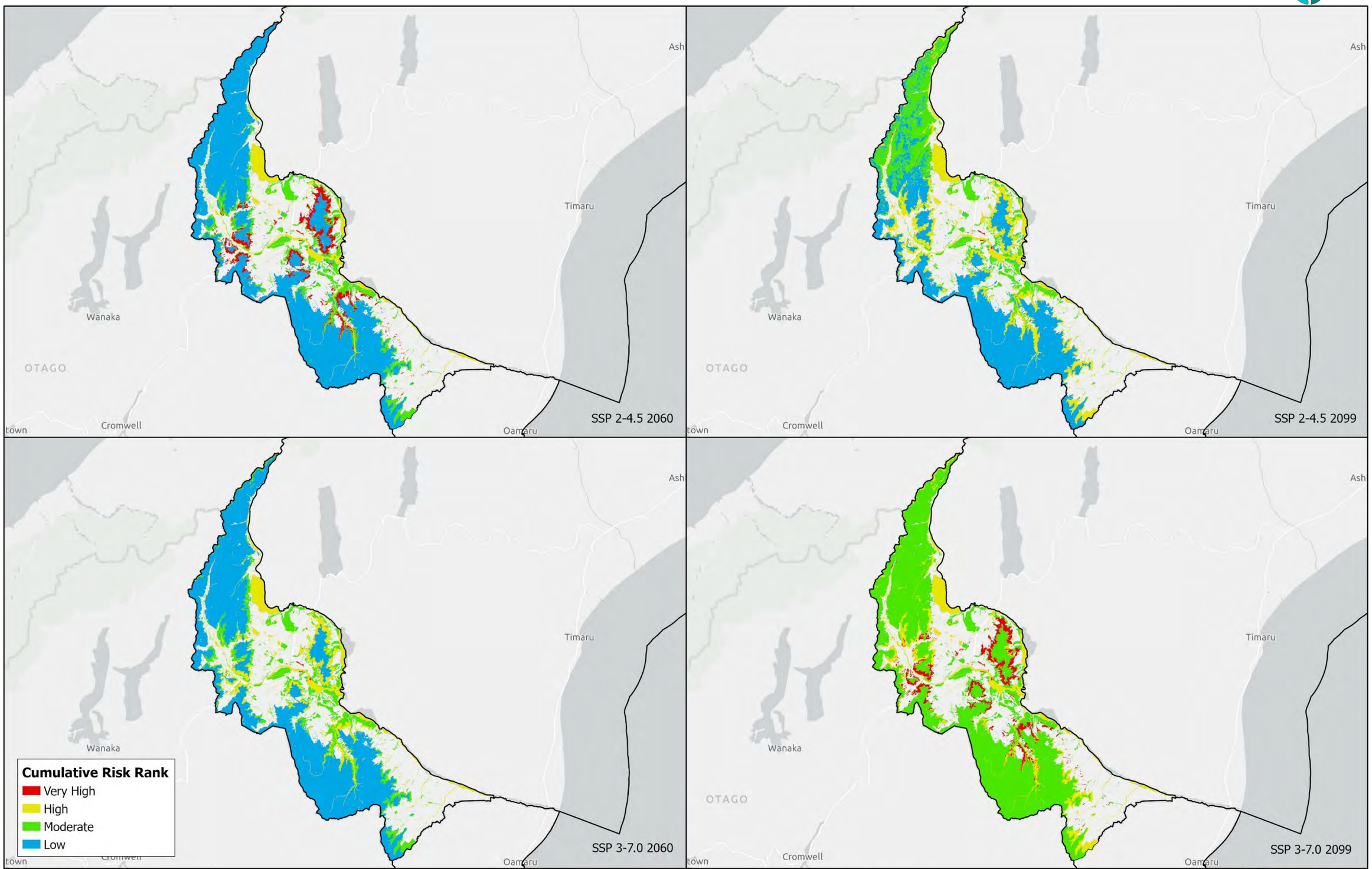


Figure 12i. Risk level of ecosystems in Waimate



Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Report: 7603
Client:
Ref: 12084
Path: E:\gis\Waitaha Climate Change\mxd\
File: Figure_Risk_Waitaki.mxd

Figure 12j. Risk level of ecosystems in Waitaki

0 50 100 Km

© 2025 Wildlands www.wildlands.co.nz, 0508 WILDNZ

Scale: 1:1,200,000
Date: 20/11/2025
Cartographer: LW
Format: A3R

8.3.1 Alpine Grass/Herbfields

Alpine grasslands and herbfields are cold-adapted, high-elevation community found above the treeline. They are typically dominated by native tussock grasses (especially *Chionochloa*) and herbaceous plants like *Celmisia*, speargrass (*Aciphylla*), buttercups (*Ranunculus*) and cushion plants such as *Raoulia*.

Alpine grasslands and herbfields included 28 ecosystems, of which 14 are considered to be in good condition. Good condition ecosystems include alpine grass/herbfields and tussock grasslands above the treeline. These occur in LENZ environments E, P, Q, R and T.

Location: These ecosystems are located in all districts except Christchurch City and Banks Peninsula (**Figure 13**).

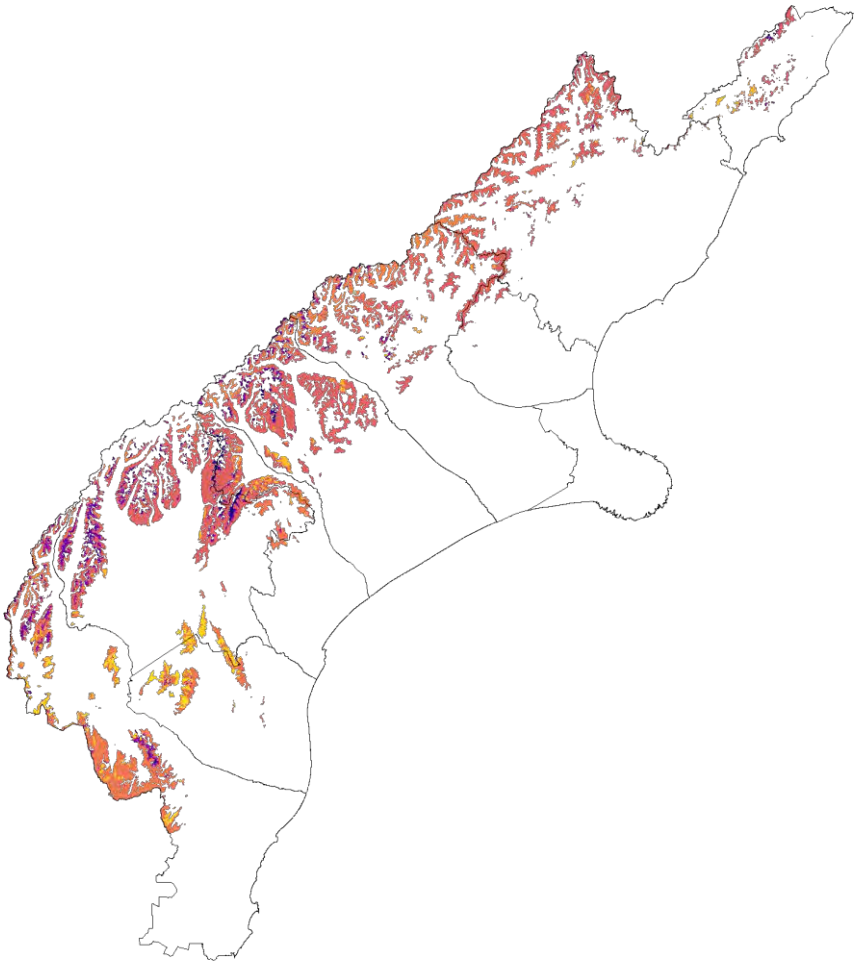


Figure 13—The distribution of alpine grass and herbfield ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: These ecosystems are most exposed to losses of cold temperature conditions and competition from invasive weeds, although they will also be exposed to changes in precipitation, erosion and landslides, and heatwaves. Some of these ecosystems have a Very High exposure to more than two hazards by mid-century, although most have an exposure level of Negligible or Low. By the

end of the century, most alpine grasslands and herbfields have a Very High exposure to more than two hazards, particularly under SSP 3 – 7.0.

Vulnerability: Most alpine grasslands and herbfields have a vulnerability score of Low or Moderate. Although many of these ecosystems have a Moderate sensitivity, they typically have Moderate to Very High adaptive capacity.

Risk: Most alpine grasslands and herbfields have a risk score of Low by mid-century, with Moderate and High risk for some individual ecosystems. My late-century, most alpine grasslands and herbfields have a risk score of Moderate, with some having Low or High risk.

8.3.2 Alpine Shrubland

Alpine shrublands comprise woody, low-stature vegetation above or near the treeline, dominated by hardy subalpine shrubs such as snow tōtara (*Podocarpus nivalis*), mountain toatoa (*Phyllocladus alpinus*), *Dracophyllum*, Hebe (*Veronica* species), *Coprosma* species, and porcupine shrub (*Melicytus alpinus*). These shrublands are adapted to cold, windy, and exposed conditions, forming a key structural component of the lower alpine ecosystem.

Alpine shrublands included 20 ecosystems. We were not able to identify ecosystems that were of a successional/degraded quality, however it is likely that some of these habitats have been disturbed. Habitats included mānuka and kānuka, matagouri and grey scrub, as well as more general sub alpine scrubland. They occurred in LENZ environments E, K, P, Q, R and T.

Location: These ecosystems are located in all districts except Christchurch City and Banks Peninsula.



Figure 14—The distribution of alpine shrubland ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: These ecosystems are most exposed to losses in cold temperatures and competition from invasive weeds, although they will also be exposed to changes in precipitation, erosion and landslides, and heatwaves. By mid-century, alpine shrublands have a highly mixed exposure score to more than two hazards (Negligible – Very High). By the end of the century, most alpine shrublands will have High to Very High exposure to more than two hazards.

Vulnerability: Most alpine shrublands have a Low vulnerability, with several ecosystems being ranged as Moderate or High. These ecosystems vary in sensitivity from Negligible to Moderate and vary in adaptive capacity from Negligible to Very High.

Risk: Most alpine shrublands have a Low to Moderate risk score by mid-century. By late century, most of these ecosystems will be at Moderate risk, with some ecosystems with High or Very High risk.

8.3.3 Alpine Naturally Uncommon Ecosystem

Alpine NUEs included four ecosystems: acidic screes, moraines, outwash gravels and snow banks. These habitats occur in exposed, high-alpine or periglacial zones, where cold, unstable substrates and/or poor, coarse soils limit plant growth. These areas support sparse, specialised vegetation adapted to low nutrients, frequent disturbance and extreme climate regimes.

We did not assess the LENZ environments that these habitats were found in. We were also unable to assess whether some of these habitats were successional or degraded. Further investigations may thus delineate a larger number of ecosystems.

Location: These ecosystems are located in all districts except Christchurch City and Banks Peninsula.

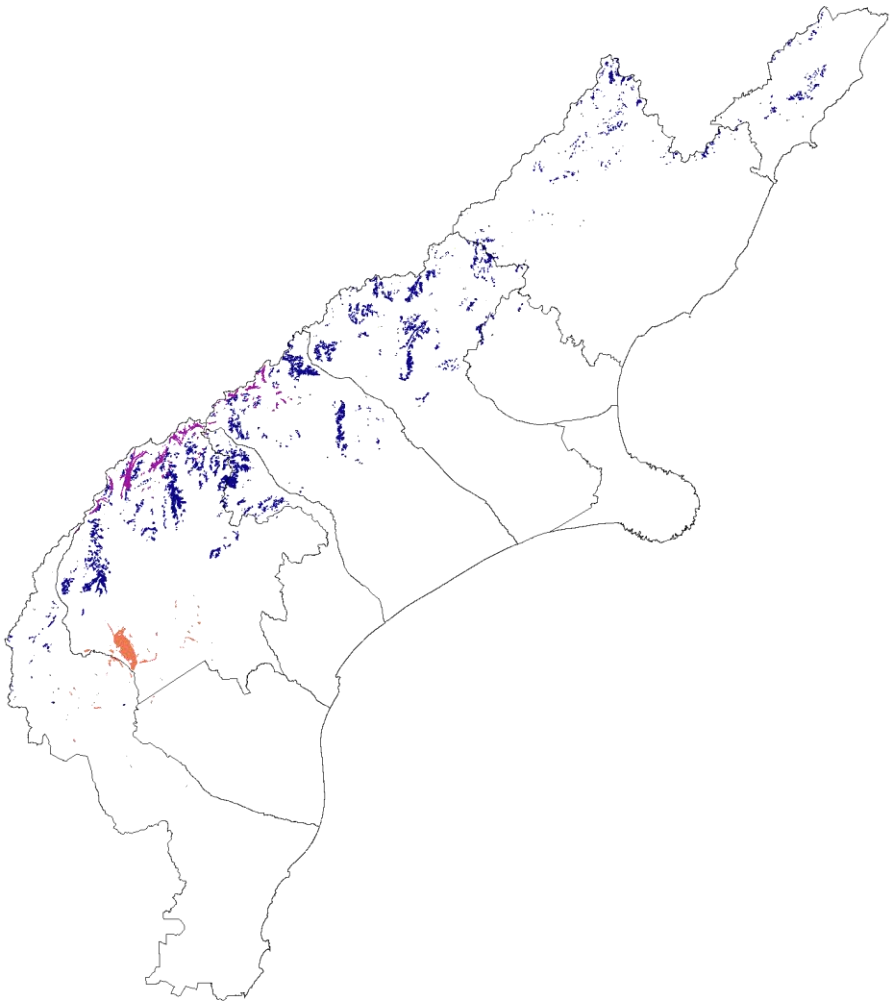


Figure 15—The distribution of alpine Naturally Uncommon Ecosystems (NUEs) in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: These ecosystems are most exposed to losses in cold temperatures and erosion and landslides. Competition from invasive weeds, and heatwaves are also important. Exposure to flooding is important for outwash gravels. Exposure to more than two hazards for these ecosystems varies from Low to Very High by mid-century; by late-century, exposure to more than two hazards is Very High for most ecosystems.

Vulnerability: Alpine NUEs all have a vulnerability score of Moderate. While their sensitivity is High, the adaptive capacity of these ecosystems is High to Very High.

Risk: Risk for alpine NUEs varies from Low to High by mid-century. By the end of the century, most of these ecosystems are likely to be at High risk.

8.3.4 Permanent Snow and Ice

Permanent snow and ice ecosystems in Waitaha Canterbury are found along the Main Divide. They are cold, largely unvegetated high-mountain zones dominated by glaciers, perennial snowfields, and icecaps. These areas are critical sources of meltwater for rivers, but support very few vascular plants due to their extreme conditions.

Permanent snow and ice included four ecosystems, which were not characterised further. These habitats were found in LENZ environments P (1 and 2), R and T.

Location: These ecosystems were mapped in Ashburton, Hurunui, Mackenzie, Selwyn, Timaru and Waitaki Districts and are found exclusively in the high alpine (nival) zone.



Figure 16—The distribution of permanent ice and snow ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: These ecosystems are most exposed to losses in cold temperatures, erosion and landslides, and changes in rainfall. These ecosystems will also be increasingly exposed to unusually high heat. The exposure of these ecosystems to more than two hazards is Negligible to Moderate by mid-century, and mostly Very High by mid-century. We note that these ecosystems are well known to be highly shaped by extreme cold conditions, therefore considering the cumulative risk of multiple hazards should not be a strong consideration.

Vulnerability: The vulnerability of these ecosystems is predicted to be mostly Low. We consider that this categorisation should not be given a lot of weight, and that these ecosystems should be instead

considered to have a Very High vulnerability. Some aspects of our calculations are not optimised for this ecosystem type. For example, few notable species in permanent snow and ice habitats result in a lower sensitivity score, however it is the presence of unique conditions and geomorphological processes, not notable species that is a driver of value for these ecosystems.

Risk: Risk for permanent snow and ice ecosystems is predicted to be mostly Low by mid-century and mostly Moderate by late-century. We consider this to be an underrepresentation due to methodology not being optimised for this ecosystem type. Instead, all permanent snow and ice ecosystems should be considered to have a Very High risk score now and in the future.

8.3.5 Sub Alpine Scrub/Shrubland

This habitat type represents scrub and shrubland types found at lower elevations. In Waitaha Canterbury, many subalpine shrub and scrublands are successional following historic clearance or other disturbances, however these ecosystems would have also occurred throughout the region prior to human arrival to the country.

This broad category included 79 ecosystems, of which 33 were considered to be of good quality. Habitats included mānuka and kānuka, matagouri and grey scrub, as well as more general sub alpine scrubland. Good quality habitats occurred in LENZ environments E, J, K, L, N, P, Q and R.

Location: These ecosystems were found in all districts.

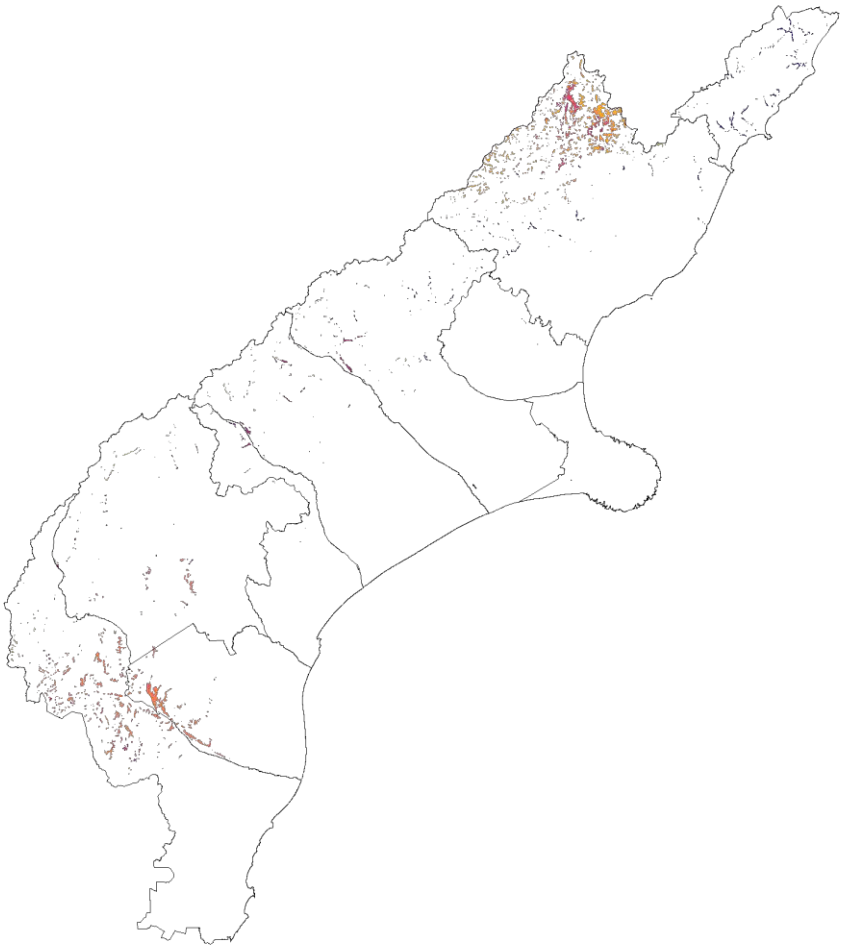


Figure 17—The distribution of sub-alpine scrub and shrublands in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: These ecosystems are very exposed to invasive plant species. Increased exposure to extreme heat, losses of cold conditions, and changing precipitation, particularly in more severe climate scenarios is also a concern. Drought may be increasingly important late-century. Exposure to more than two hazards for these ecosystems varies in the mid-century timeframe, with ecosystems evaluations varying from Negligible to Very High. By late-century, most ecosystems are considered to have Very High exposure to more than two hazards in both climate scenarios, although this evaluation is near-universal under SSP 3 – 7.0.

Vulnerability: The vulnerability of sub alpine scrub and shrubland ecosystems varies, although most are evaluated as Low to Moderate. While the adaptive capacity of these ecosystems is very highly variable (Low – Very High) this is moderated by a lower sensitivity: while sensitivity varies, the most common value is Low.

Risk: The risk to sub alpine scrub and shrubland ecosystems is very variable. By mid-century, risk varies between Low and Very High for individual ecosystems. By the end of the century, the most common risk scores are Moderate or High.

8.3.6 Sub Alpine Grass/Herbfield

Sub-alpine grass/herbfield is an ecosystem found below the alpine zone, although the ecosystem hosts many of the same species as its alpine counterpart. These vegetation types are adapted to cold, windy conditions with a short growing season and relatively poor, well-drained soils.

Sub alpine grasslands included 52 ecosystems, of which 18 were considered to be of good quality. Habitats included areas mapped as alpine grass/herbfield and tall tussock grasslands where these occurred below the natural treeline. Good quality habitats occurred in LENZ environments E, J, K, N, P and Q.

Location: These ecosystems are located in all districts except Christchurch City and Banks Peninsula.

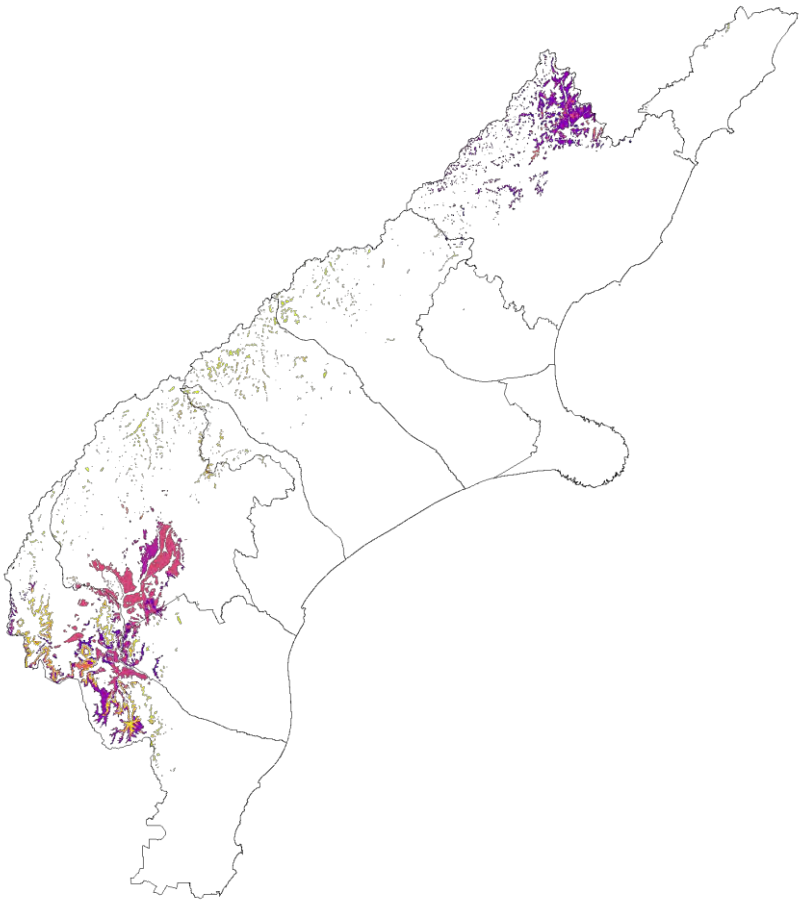


Figure 18—The distribution of sub-alpine grass and herbfield habitats in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: These ecosystems are very exposed to invasive plant species. Increased exposure to erosion and landslides is a strong trend under all projections. These ecosystems are also exposed to extreme heat, drought losses of cold conditions, and changing precipitation, particularly in more severe climate scenarios by the end of the century. Exposure of these ecosystems to more than two hazards is variable by mid-century (Negligible – Very High). By late-century, a greater number of ecosystems are classified as Very Highly exposed to more than two climate hazards, although this depends on the scenario considered. Under SSP 3 – 7.0, almost all ecosystems have a Very High exposure to more than two hazards.

Vulnerability: The vulnerability of the majority of these ecosystems is Low, although individual ecosystems have higher vulnerability classifications. While the adaptive capacity of these ecosystems is highly variable (Low – Very High), this is moderated by the sensitivity, which is Moderate or lower for all ecosystems.

Risk: The risk exposure of these ecosystems is Low to Moderate by mid-century, although individual ecosystems have higher risk classifications. By the end of the century, the risk level is Moderate or higher for most of these ecosystems, although under SSP 3 – 7.0, risk levels of Moderate or higher levels are expected for all ecosystems.

8.3.7 Beech forest

Beech forest canopies are dominated by one or few beech species (formerly grouped as genus *Nothofagus,* these are now classified within *Fuscospora* and *Lophozonia*). These forests are most typical of exposed hills and montane sites. Their understorey tends to be species-poor, typically consisting of divaricating shrubs, ferns or ground herbs, reflecting dry, nutrient-poor soils.

Beech forest included 79 beech-dominated ecosystems. This included 37 ecosystems that were considered to be of good quality. Beech forests included mountain beech, mountain beech-red beech, silver beech and red beech-silver beech forests. Good quality habitats occurred in LENZ environments B, E, F, J, K, N, P, Q and R.

Location: Beech forests were mapped in all districts except Timaru and Waimate.

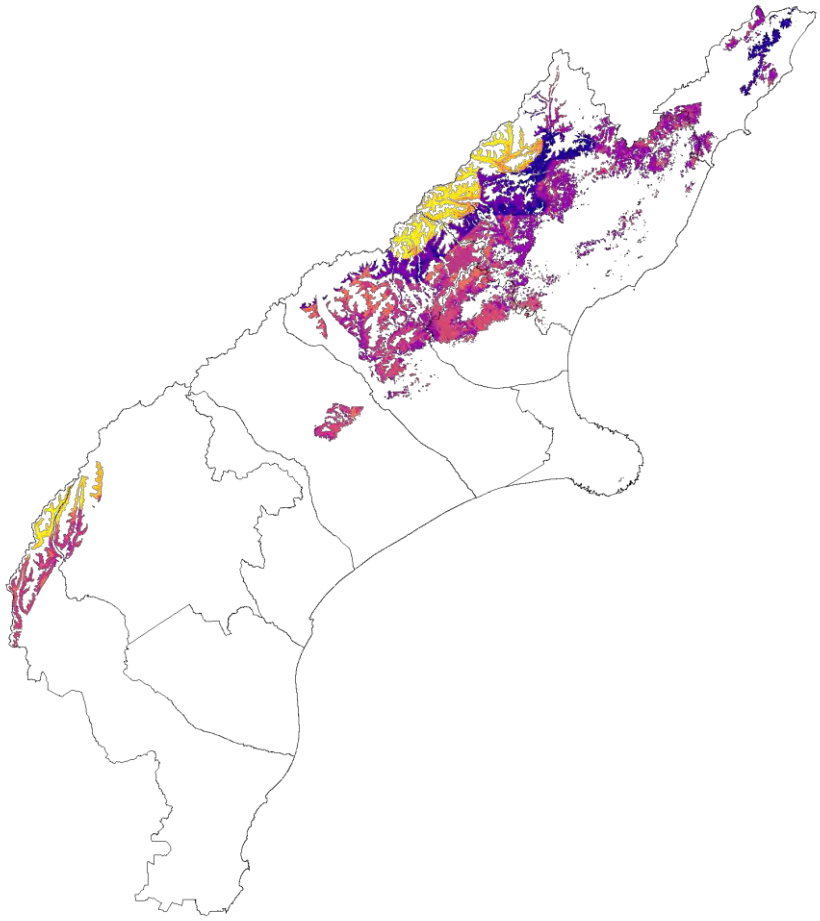


Figure 19—The distribution of beech forest ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: Losses of extreme cold, changes in rainfall, and extreme heat are major sources of exposure for many of these ecosystems by the end of the century. Some exposure to drought is also projected. These ecosystems also have some exposed to erosion and landslides in all projections. The exposure of these ecosystems to more than two climate hazards is highly variable by mid-century (Low – Very High); by the end of the century, the exposure is expected to be Very High for the majority.

Vulnerability: The vulnerability of the majority of these ecosystems is low or medium, although individual ecosystems have higher vulnerability classifications. While the adaptive capacity of these ecosystems is highly variable (Low – Very High), this is moderated by the sensitivity, which is Moderate or lower for all ecosystems.

Risk: By mid-century, the most common risk category for these ecosystems is Low, although around half of ecosystems have a higher risk classification. By the end of the century, the risk level is Moderate or higher for most of these ecosystems, although higher levels of risk are predicted under SSP 3 – 7.0.

8.3.8 Podocarp-hardwood forests

Podocarp-hardwood forests are ancient New Zealand ecosystems characterised by emergent podocarp trees like rimu, tōtara, kahikatea, miro and mataī, with an understorey of diverse hardwood species, shrubs, ferns and tree-ferns. Podocarp-hardwood forests in Waitaha Canterbury are remnants of mixed native forest on lower, moist slopes and gullies.

Podocarp-hardwood forests were very diverse, and included 307 ecosystems. Of these, 140 were considered of good quality. Forest types included in this category spanned:

- Hall's tōtara/broadleaf forest
- Hall's tōtara/silver-beech-kamahi-southern rata forest
- Hall's tōtara-miro/kamahi-southern rata broadleaf forest
- Hall's tōtara-miro-rimu/kamahi-silver beech-southern rata forest
- Kahikatea-mataī/tawa-mahoe forest
- Kahikatea-pukatea-tawa forest
- Kahikatea-tōtara forest
- Kauri/tarairē-kōhēkōhē-tawa forest
- Mataī-kahikatea-tōtara forest
- Mataī-tōtara/black/mountain beech forest
- Mataī-tōtara-kahikatea-rimu/broadleaf-fuchsia forest
- Rimu/tawa-kamahi forest
- Rimu-mataī-miro-tōtara/kamahi forest
- Rimu-miro/kamahi-red beech-hard beech forest
- Rimu-miro-tōtara/kamahi forest

Location: Podocarp-hardwood forests were mapped in all districts.

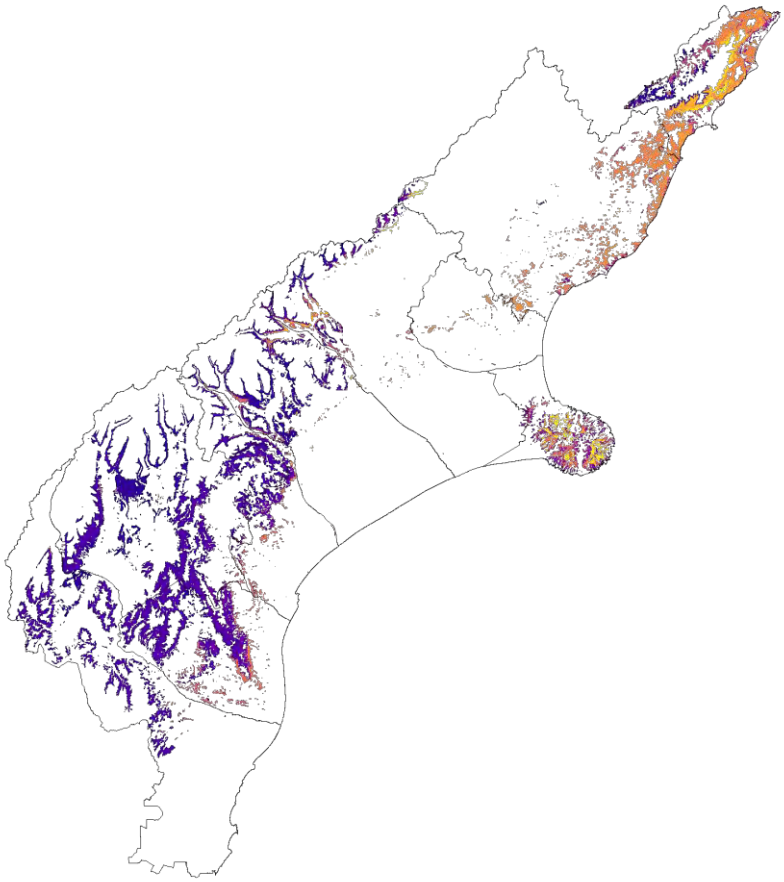


Figure 20—The distribution of podocarp-hardwood forest habitats in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: Podocarp hardwood forests is a diverse grouping, so there is not cohesive set of exposures that affect all of these ecosystems. For example, Hall's totara-miro/kamahi-southern rata broadleaf forest is more exposed to erosion and landslides than other forest types, while Kahikatea-tōtara forest is more exposed to fire. Most ecosystem types are strongly exposed to competition with invasive weeds and losses of cold temperatures, and many podocarp hardwood forests are predicted to be exposed to changes in rainfall and extreme heat by the end of the century. The exposure of these ecosystems to more than two climate hazards is High or Very High by mid-century, even under the moderate climate scenario. By the end of the century, a Very High exposure to more than two hazards is predicted for more than half of these ecosystems under the moderate climate scenario; under a severe climate scenario, a ranking of Very High is near-universal.

Vulnerability: The most common vulnerability level for these ecosystems is Low, although about a third of these ecosystems have higher vulnerability. While the adaptive capacity of these ecosystems is highly variable (Low – High), this is moderated by the sensitivity, which is Moderate or lower for most ecosystems.

Risk: The risk to the majority of these ecosystems is expected to be Moderate both within the mid- and late-century timeframes, although some have rankings of Low, High, or Very High. Risk rankings are higher in the late-century timeframe, particularly under the more severe climate scenario.

8.3.9 Broadleaved Indigenous Hardwoods

Broadleaved indigenous hardwoods included 15 ecosystems and all were considered of good quality. This categorisation was taken when ecosystem occurred in locations that were not given a forest-based potential vegetation classifications – thus this grouping primarily represents ecosystems identified due to mismatches between different mapping sources. Therefore, little can be said regarding the nature of these forests without further detailed assessment and mapping. It is likely that many of these forests should be included into other groupings.

Location: These ecosystems were mapped in all districts.

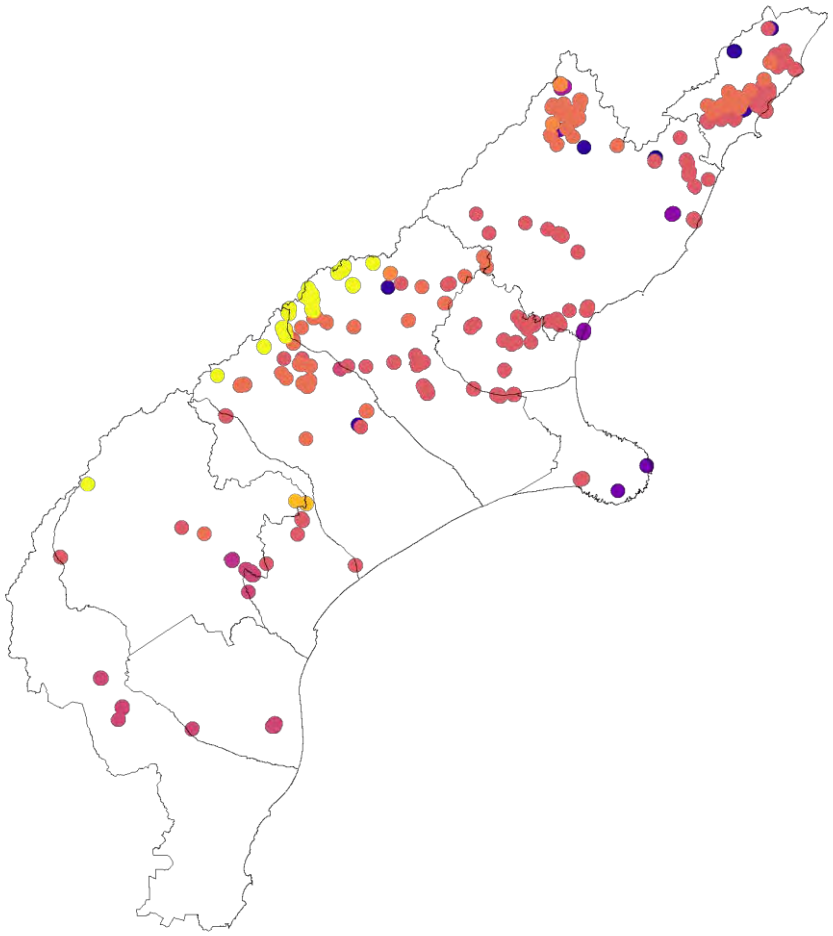


Figure 21—The distribution of broadleaved indigenous hardwood ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type. Note the area of this ecosystem has been exaggerated to increase visibility.

Exposure: Losses of extreme cold, changes in rainfall, and extreme heat are major sources of exposure for many of these ecosystems by the end of the century. These ecosystems are not especially exposed to drought. Erosion and landslide exposure is higher for some of these ecosystems than for others. The exposure of these ecosystems to more than two hazards is highly variable by mid-century (Low – Very High). By late century, exposure to more than two climate hazards is Very High for the majority of ecosystems.

Vulnerability: The majority of these ecosystems have a vulnerability of Low to Moderate. While both adaptive capacity and sensitivity are very highly variable among ecosystems, characteristics tend to offset each other: ecosystems that are sensitive due to isolated habitat patches also have a large climatic range.

Risk: The risk to these ecosystems is most commonly Moderate under both the mid- and late-century timeframes, with both higher and lower categorisations for the minority of ecosystems. However, by the late-century, most ecosystems are classified as being at Moderate risk or higher.

8.3.10 Indigenous Forest

Indigenous forests included 16 ecosystems, all of which were of good quality. These ecosystems represent forests that are known to be indigenous but could not be provided with specifics regarding their species composition. Therefore, little can be said regarding the nature of these forests without further detailed assessment and mapping. It is likely that many of these forests should be included into other groupings.

Location: Indigenous forests were mapped in all districts except Waimate and Christchurch City and Banks Peninsula.

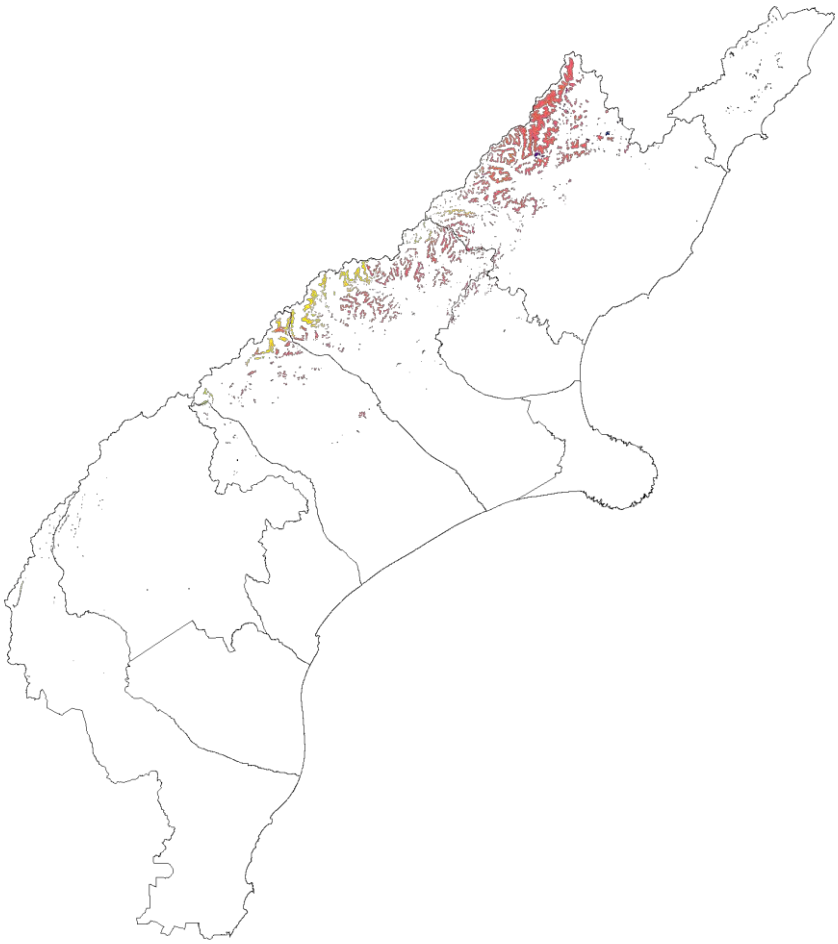


Figure 22—The distribution of indigenous forest ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: Many of these ecosystems are projected to be exposed to erosion and landslides by mid-century. Many of these ecosystems will be exposed to changes in rainfall, extreme heat and cold conditions by the end of the century. Many of these ecosystems compete with invasive weeds. By mid-century, the majority of these ecosystems have an exposure of Low or Negligible to more than two hazards, with a few ecosystems being at Very High risk. However, by late century, this picture changes: under the moderate climate scenario, exposure to more than two climate hazards is very mixed (Negligible – Very High), while under the more severe climate scenario, an exposure ranking of Very High is near-universal.

Vulnerability: The vulnerability of these ecosystems is Low – Moderate. Both adaptive capacity and sensitivity vary substantially among these ecosystem types.

Risk: The risk exposure of the majority of ecosystems is Low in the mid-century timeframe, and Moderate in the late-century timeframe. However, for a minority of ecosystems, risk has been assessed as High in both timeframes.

8.3.11 Gravel or Rock

Gravel or rock habitats are very diverse and appear to span many different geomorphologies, including parts of alluvial fans, portions of active braided river beds that were not captured within that ecosystem, disturbed alpine areas such as screes and areas of wind scour, as well as coastal rocky habitats. In each of these environments, the ecosystem is likely to host different species. Gravel or rock habitats included 37 ecosystems, and spanned all LENZ environments mapped in Waitaha Canterbury. We were unable to distinguish degraded or successional versions of this environment.

Location: Gravel or rock habitats were mapped in all districts.

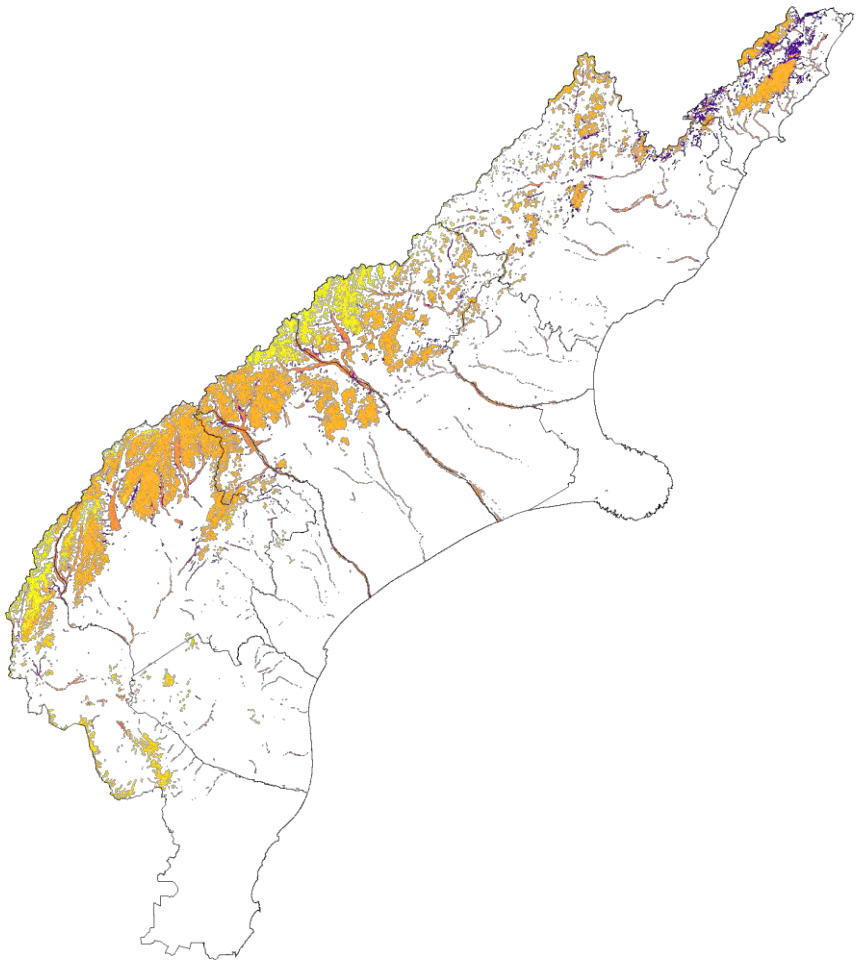


Figure 23—The distribution of gravel or rock ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: Losses of extreme cold, changes in rainfall, and extreme heat are major sources of exposure for many of these ecosystems by the end of the century. Some of these ecosystems are more exposed to drought than others. Erosion and landslide exposure, as well as fire and flooding exposure, is higher for some of these ecosystems than for others. These ecosystems are highly exposed to invading weeds. The exposure to more than two hazards is highly variable among these ecosystems in the mid-century, being Negligible to Very High in both scenarios, although the risk rankings are highly dependent on the climate scenario used. By late-century, the most common exposure rating to more than two climate hazards is Very High.

Vulnerability: The majority of these ecosystems are assessed as having a Low vulnerability, although a few are assessed as Moderate. While sensitivity varies from Negligible to Moderate, adaptive capacity for these ecosystems is assessed as High or Very High for most ecosystems.

Risk: Risk to these ecosystems is assessed as Low – Moderate by mid-century. By late century, the risk to most ecosystems is assessed as Moderate.

8.3.12 Sand or Gravel

Sand or gravel included 22 ecosystems. These mostly comprised areas mapped as such in the LCDB, although areas mapped as dunelands were also included in this group. These ecosystems are mostly found in coastal areas. We were unable to distinguish degraded or successional versions of this environment.

Location: Sand or gravel ecosystems were mapped in all districts except Waitaki. Note that in the mapping below, the area of this habitat has been exaggerated to increase visibility.

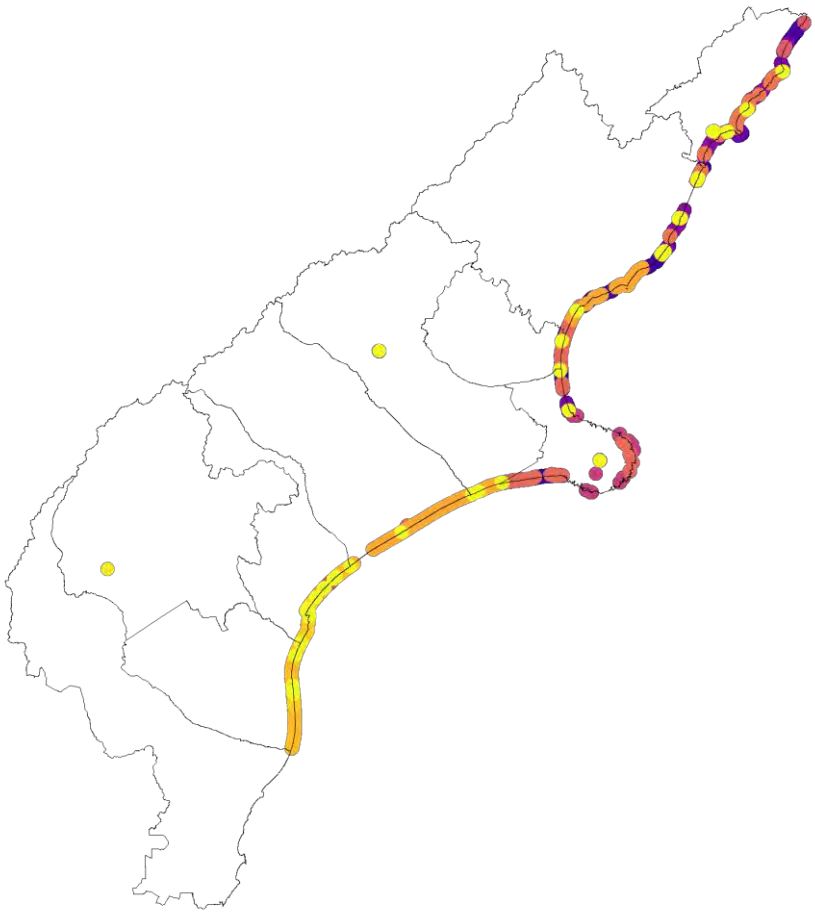


Figure 24—The distribution of sand or gravel ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type. Note the area of this ecosystem has been exaggerated to increase visibility.

Exposure: Losses of extreme cold are the greatest source of exposure for these ecosystems. Many will also have moderate-high exposure to coastal inundation. Changes to rainfall, extreme heat and drought will affect some of these ecosystems by the end of the century. The exposure of these ecosystems to more than two climate hazards is highly variable among ecosystems, ranging from Negligible to Very High. The rankings of individual ecosystems are relatively stable across both climate scenarios and timeframes.

Vulnerability: The vulnerability of these ecosystems is most commonly assessed as Moderate, although High vulnerability is also common. While the sensitivity of these ecosystems is most commonly Moderate (ranging from Negligible to High), adaptive capacity is most commonly assessed as Low (although it varies among ecosystems).

Risk: While risk is assessments vary among ecosystems, the most common risk assessment level is High across both climate scenarios and within the mid- and late-century timeframes.

8.3.13 Landslide

Landslides scar hilly and alpine parts of Waitaha Canterbury due to slips, rockfalls or debris flows. Over time, these areas undergo ecological succession: topsoil slowly recovers, and pioneering vegetation—including grasses, shrubs and eventually native trees—begins to re-establish, although soil carbon and nutrients can take decades or even centuries to fully recover. Landslides are a geomorphic process rather than a defined plant community, although specific species (early successional species) do best in these environments.

Landslides included 7 ecosystems, which were defined based on their LENZ category. They included habitats in B, E, P Q and R environments. We were unable to distinguish degraded or successional versions of this environment and assumed that all landslides comprised such vegetation.

Location: Landslides were mapped in Ashburton, Hurunui, Kaikōura, Mackenzie, Selwyn, Timaru and Waitaki Districts. Note that in the mapping below, the area of this habitat has been exaggerated to increase visibility.

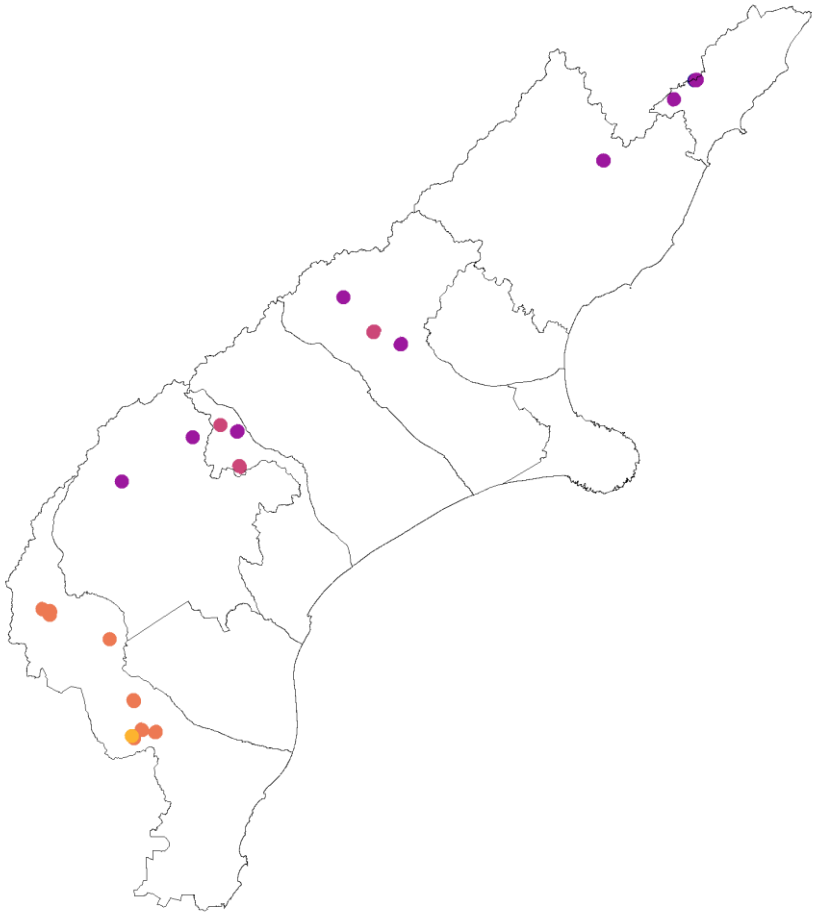


Figure 25—The distribution of landslide ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type. Note the area of this ecosystem has been exaggerated to increase visibility.

Exposure: Exposure to extreme heat and the loss of cold conditions are typically high for these ecosystems by the end of the century. Many are also within the distributions of invasive weeds. Many of these ecosystems may be exposed to drought and wind by the end of the century, but this depends on the climate projection. At the mid-century timeframe, the exposure of these ecosystems to more than two climate hazards strongly diverge, depending on the land environment they are in, with ranking at either Negligible or Very High. By late century, exposure to more than two climate hazards is expected to be Very High for the majority of these ecosystems.

Vulnerability: Vulnerability of these ecosystems is typically Low or Moderate. While adaptive capacity varies from Low to High, the most common sensitivity level is Low, with some ecosystems assessed as Moderate.

Risk: Within the mid-century time frame, the risk is assessed as Low for more than half of these ecosystems, although some assessments of Moderate-High have also been made. By the end of the century, most risk assessments for these ecosystems are Moderate – Very High.

8.3.14 Cliffs, scarps and tors

Steep rock outcrops—vertical cliffs, steep scarps and tors—host species assemblages that are often found nowhere else, and so many of these habitats are recognised as Naturally Uncommon Ecosystems. In these environments, soils are shallow or absent, exposing bare rock and vertical crevices. Vegetation is often highly specialised, and can be strongly driven by the geology of the area. These environments are critically important as refuges - fauna are safe from predators and flora from grazers.

We identified six ecosystems of this type in Waitaha Canterbury: acidic, basic, limestone and quartzose cliffs, scarps and tors, and acidic and limestone coastal cliffs. We did not assess the LENZ environments that these habitats were found in. We were also unable to assess whether some of these habitats were successional or degraded. Further investigations may thus delineate a larger number of ecosystems.

Location: Cliffs, scarps and tors have been mapped in all districts in the region. Note that in the mapping below, the area of this habitat has been exaggerated to increase visibility.

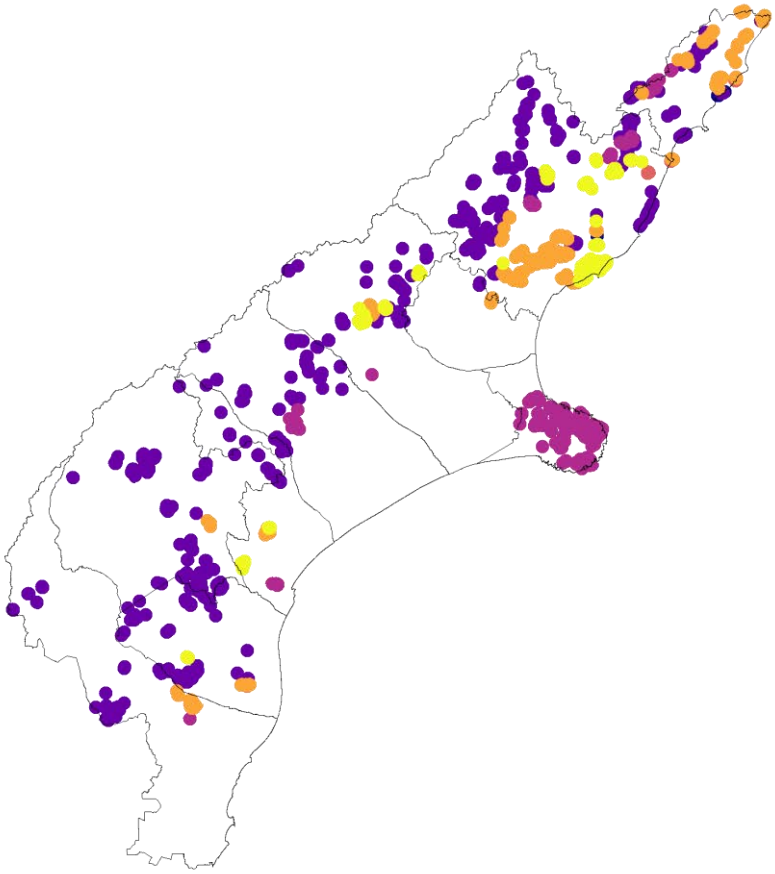


Figure 26—The distribution of cliff, scarp and tor ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type. Note the area of this ecosystem has been exaggerated to increase visibility.

Exposure: Exposure to extreme heat and the loss of cold conditions are typically high for these ecosystems by the end of the century. Most are also within the distributions of invasive weeds. Many of these ecosystems may be exposed to changes in rainfall by the end of the century. Exposure of these ecosystems to more than two climate hazards is mostly Very High in both mid- and late-century timeframes.

Vulnerability: The vulnerability of most ecosystems is Moderate, although coastal cliffs are assessed as Very High. Sensitivity of most of these ecosystems is High. The adaptive capacity of most ecosystems is Very High, except coastal cliffs, which are assessed as having a Low adaptive capacity.

Risk: Across both climate scenarios, and in both mid- and late-century timeframes, the risk to cliffs, scarps and tors is predicted to be High, except in the case of coastal cliffs, where risk is Very High.

8.3.15 Subterranean ecosystems

Subterranean ecosystems include two ecosystems: caves and sinkholes. We were unable to distinguish degraded or successional versions of this environment. These ecosystems are characterised by unique geological conditions. Caves are natural underground chambers typically formed by water dissolving rock over time, while sinkholes are surface depressions created in similar geologies.

We did not assess the LENZ environments that these habitats were found in. Further investigations may thus delineate a larger number of ecosystems.

Description:

Location: These are located in Ashburton, Christchurch City and Banks Peninsula, Hurunui Kaikōura, Mackenzie, Selwyn, Timaru, Waimakariri and Waimate Districts. Note that in the mapping below, the area of this habitat has been exaggerated to increase visibility.

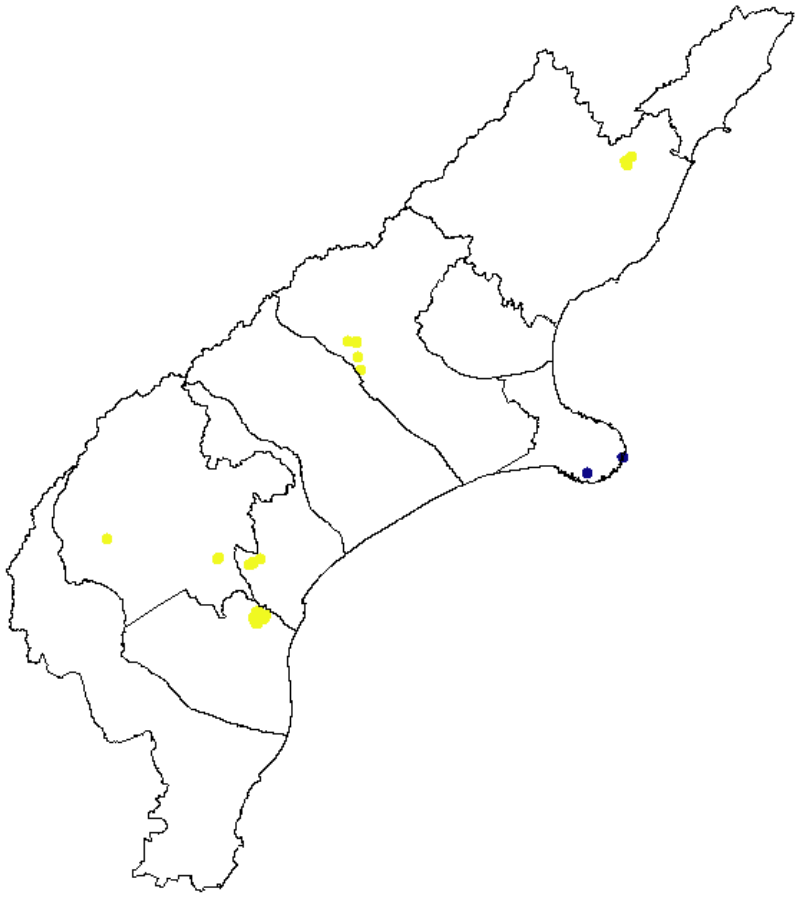


Figure 27—The distribution of subterranean ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type. Note the area of this ecosystem has been exaggerated to increase visibility.

Exposure: These ecosystems are not particularly exposed to climate change, with loss of cold conditions a notable exception. Some caves will be exposed to coastal inundation by mid-century. The exposure of subterranean ecosystems to more than two climate hazards is Low for caves, and Very High for sinkholes.

Vulnerability: We predict a High vulnerability for caves, and a Moderate vulnerability for sinkholes. We consider that this categorisation should not be given a lot of weight, as some aspects of our calculations are not optimised for this ecosystem type. The physical characteristics of caves and sinkholes protect them from many aspects of climate change. For example, they are unlikely to be invaded by plant species or be affected by large fluctuations in temperature.

Risk: Overall, we assess that risk to caves is Moderate and to sinkholes is High, irrespective of time horizon or the climate scenario considered. However, due to our uncertainty in vulnerability

predictions for these ecosystems, we recommend that these ecosystems are assessed separately in more targeted works.

8.3.16 Fernland

Fernlands included nine ecosystems, of which four were considered to be in good condition. These were mapped in areas both above and below the treeline, and some were mapped as successional or degraded communities.

Location: These ecosystems were mapped in all districts except Waimakariri and Christchurch City and Banks Peninsula.

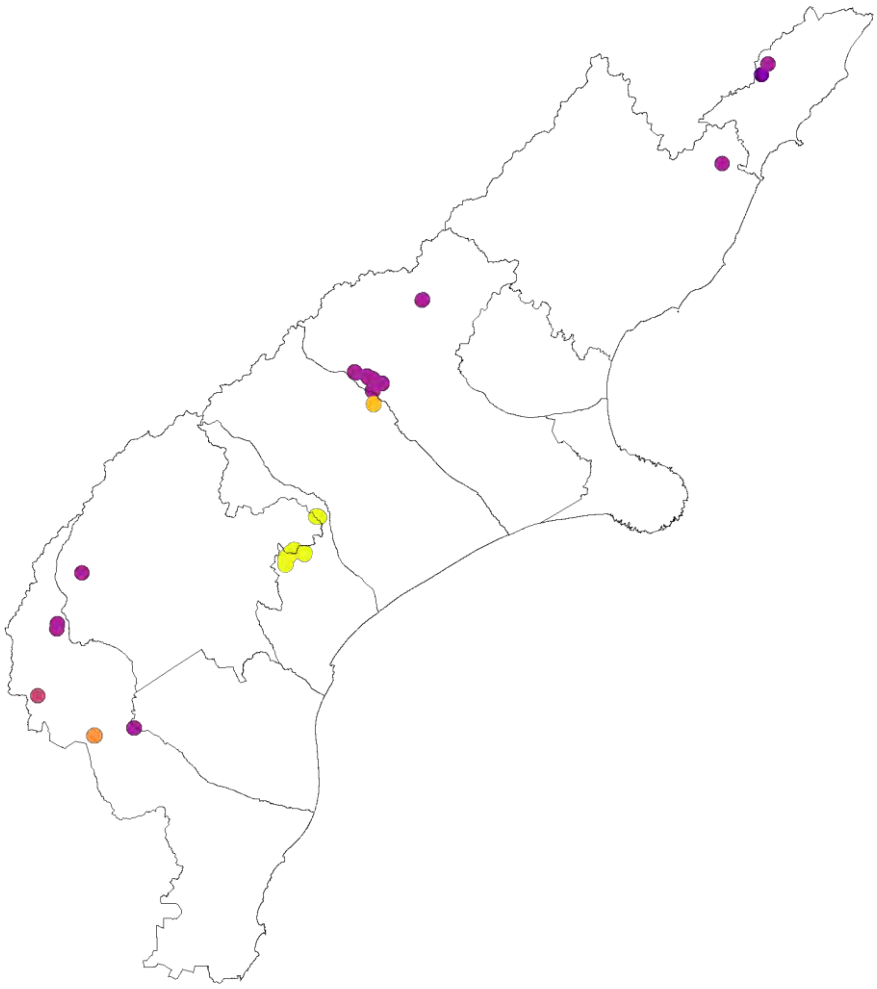


Figure 28—The distribution of fernland ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type. Note the area of this ecosystem has been exaggerated to increase visibility.

Exposure: Most of these ecosystems will be highly exposed to extreme heat and changes in rainfall by the end of the century. Some ecosystems may be highly exposed to drought and erosion or landslides. Exposure of these ecosystems to more than two climate hazards by mid-century varies by type. Ecosystems identified as "scrub, shrubland and tussock-grassland below treeline – fern land" mostly have an exposure of Very High. In comparison, "fernland – successional/degraded" is mostly Negligible.

By the end of the century, under SSP 2 – 4.5, similar assessments are made. However, under SSP 3 – 7.0, all ecosystems are assessed as Very Highly exposed to more than two climate hazards.

Vulnerability: The vulnerability of fernland is variable (Low – High). This is due to substantial variability among ecosystems in both sensitivity (Negligible - High) and Adaptive capacity (Low - High), although a majority of these ecosystems have an adaptive capacity of Low.

Risk: Risk to fernland ecosystems varies by type, as driven by trends in exposure. "Scrub, shrubland and tussock-grassland below treeline – fern land" ecosystems mostly have an exposure of High or higher across both mid- and late-century timeframes, as well as in both climate scenarios. In contrast, degraded habitat types mostly have a Low risk, except in the more severe climate scenario in the late-century timeframe.

8.3.17 Depleted grassland

Depleted grassland in Waitaha Canterbury are typically areas of former short tussock grassland that have been degraded by over-grazing, fire, rabbit browsing, and invasion by weeds like *Hieracium* species. As a result, these grasslands often have sparse native tussock cover, a high proportion of bare ground, and low biomass and productivity.

We identified 16 ecosystem types in this category, and consider these all to be degraded. These were defined by their LENZ environment, and spanned environments B, E, K, N, P, Q and R.

Location: We mapped these ecosystem types in all districts except Christchurch City and Banks Peninsula, and Waimakariri Districts.

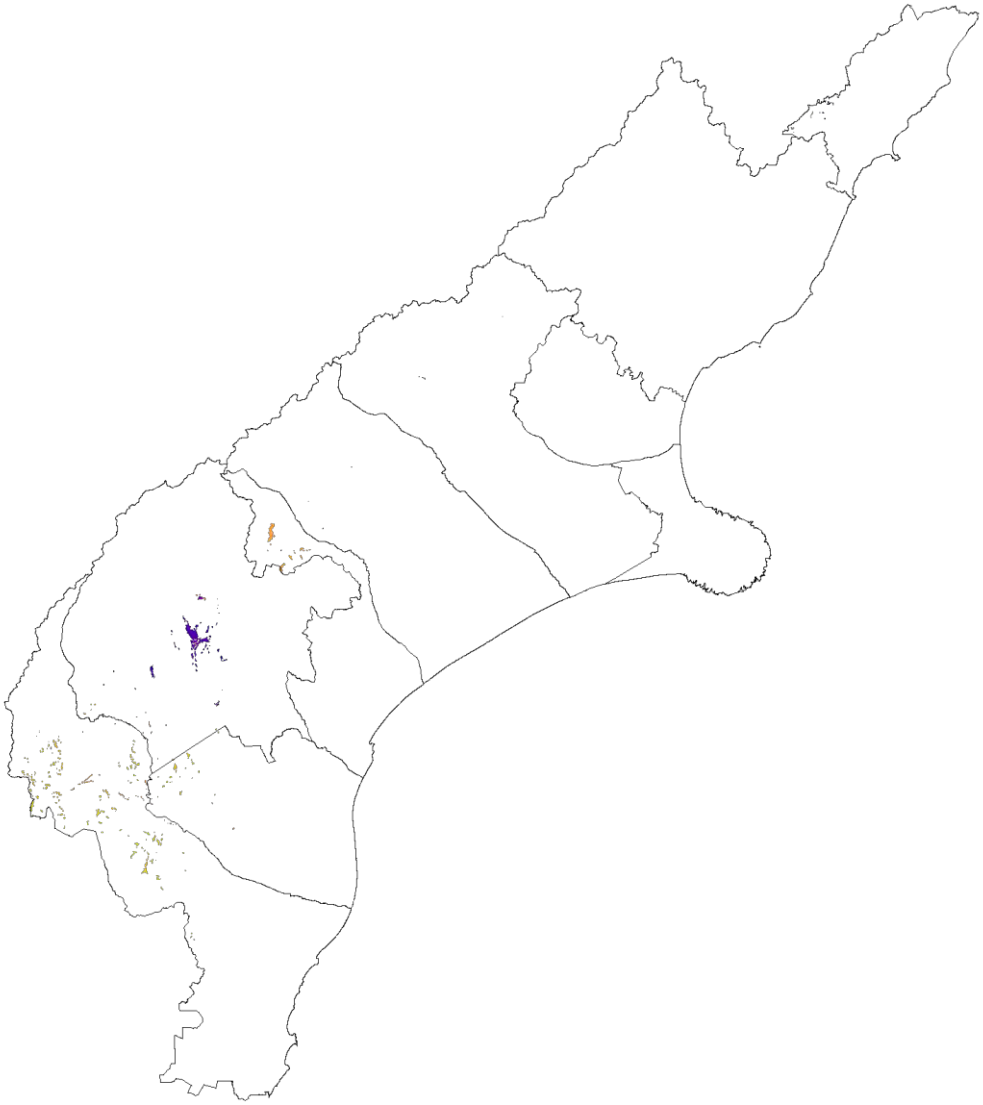


Figure 29—The distribution of depleted grassland ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: The exposure of these ecosystems to various hazards is highly variable among ecosystem types. Losses of extreme cold, fire, flooding, extreme heat and changes in rainfall are important sources of exposure for some ecosystems but not others. Most of these ecosystems compete with invasive plant species. The exposure of depleted grasslands to more than two climate hazards by mid-century is very variable (Negligible – Very High). By the end of the century, the majority of these ecosystems are assessed as having Very High exposure, although this is trend is strongest in a more severe climate scenario.

Vulnerability: The vulnerability of most depleted grassland ecosystems is Moderate or Low. Adaptive capacity can vary from Low to Very High, however the sensitivity of the majority is Low, with a couple of Moderate evaluations.

Risk: Risk to depleted grassland ecosystems by mid-century is variable, typically being assessed as Low or High, and remains unchanged into the late-century under the milder climate scenario. Under the more severe climate scenario, these ecosystems are mostly assessed as Moderate or High.

8.3.18 Freshwater ecosystems

This grouping includes nine ecosystems – lakes, ponds and tarns, riparian habitats, and rivers of various orders. In Waitaha Canterbury, freshwater ecosystems are highly diverse and interconnected. Waterways run from glacial high-country lakes to braided rivers and lowland streams, and are critical for ecological processes in adjoining terrestrial and marine ecosystems, cultural values, and recreation. They support a rich diversity of indigenous plants, invertebrates, fish, and water-birds.

We did not assess the LENZ environments that these habitats were found in, as many ecosystems spanned many LENZ categories. We were also unable to assess whether some of these habitats were successional or degraded. Further investigations may thus delineate a larger number of ecosystems.

Location: We mapped freshwater ecosystems in all districts. Note that the mapping below underrepresents the full distribution of freshwater ecosystems in the region – it does not include some mapping of braided rivers.

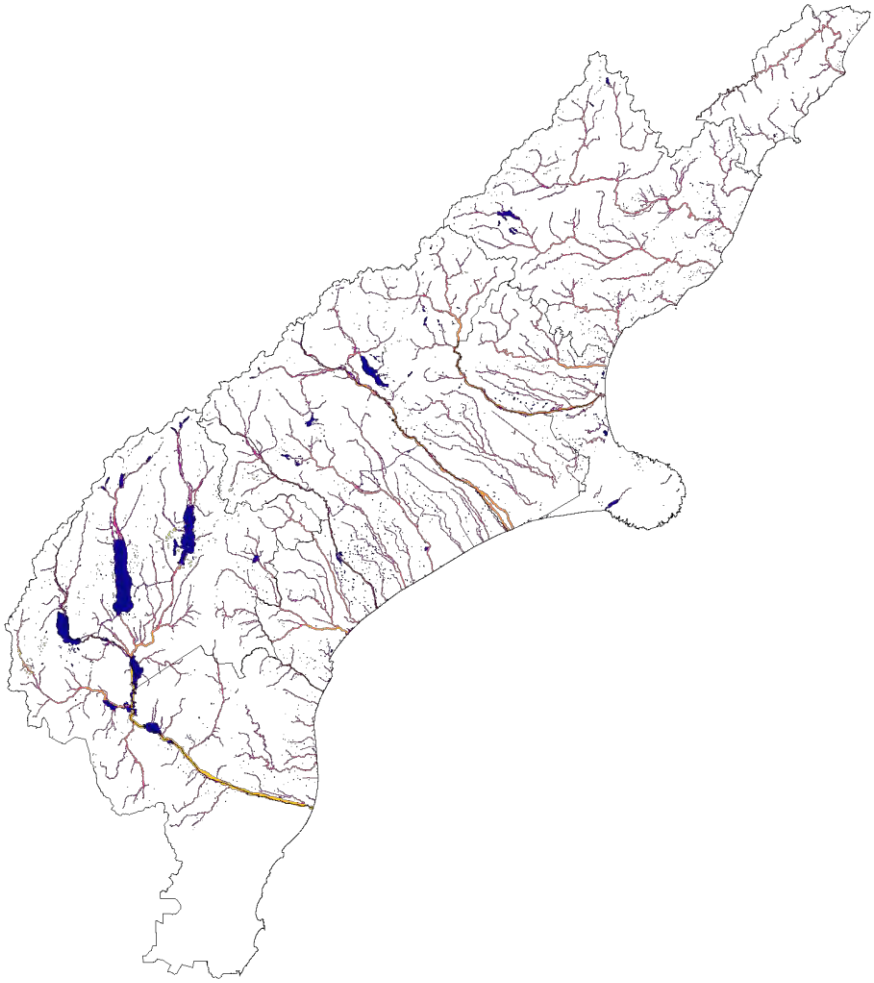


Figure 30—The distribution of freshwater ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: Due to their geometry, freshwater ecosystems will be exposed to most hazards to some extent. However, some portions of these ecosystems will equally be outside of hazard areas. Many ecosystems will be highly exposed to changes in extreme temperatures by the end of the century.

Vulnerability: Freshwater ecosystems are all assessed as Moderately vulnerable. All ecosystems are identified as having a Very High adaptive capacity and a High or Very High Sensitivity. We consider that this assessment should be interpreted with caution for these ecosystems. For example, these ecosystems occupy a large climatic range, often due to their long span from the mountains to the sea. However, these ecosystems typically have an entirely different physical structure and often have substantial differences in species composition along their length, and their health can rely on different processes occurring in different reaches. We have tried to tailor this assessment by the inclusion of specific sensitivity criteria, such as interdependency. However, we consider that freshwater ecosystems could benefit from a targeted, standalone assessment.

Risk: Risk to freshwater ecosystems across both mid- and late-century timeframes, and across both climate scenarios considered, is High for the majority of ecosystems.

8.3.19 Inland wetlands

Inland wetlands included 37 ecosystem types, of which 29 are considered to be of good quality. These were mapped in LENZ environments B, E, I J, K, L, N, P and Q.

Location: We mapped inland wetlands in all districts in the region. Note that the mapping below underrepresents the full distribution of wetlands in the region – it does not include some mapping.

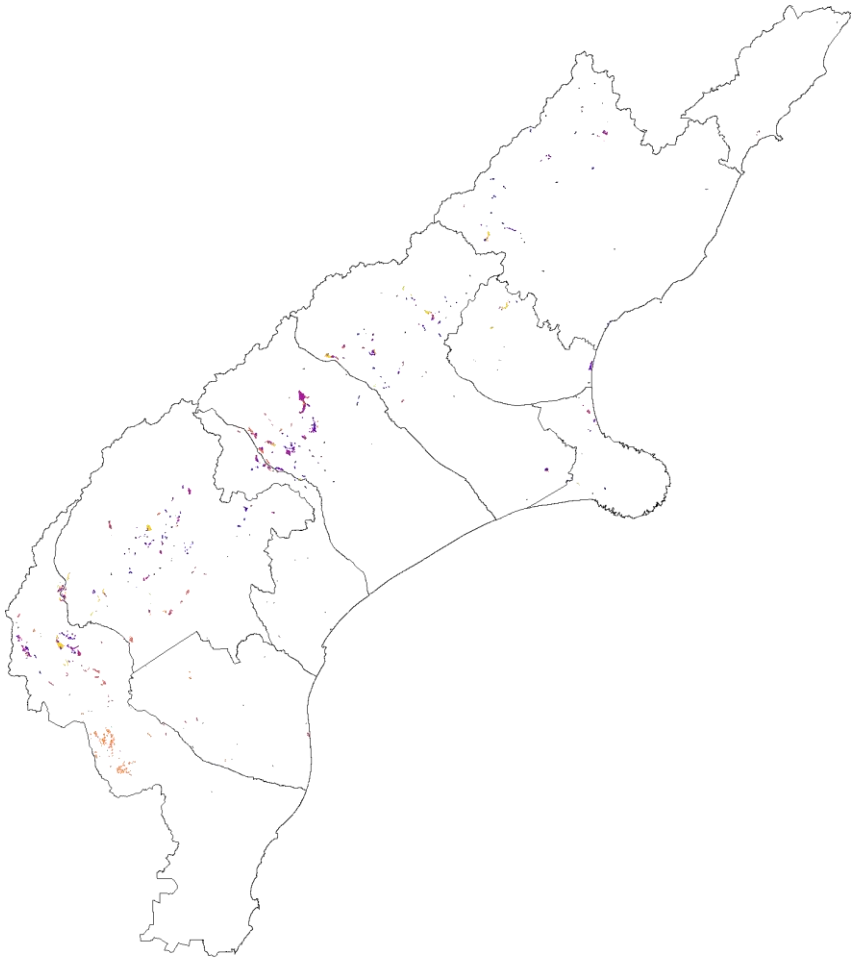


Figure 31—The distribution of inland wetland ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: Inland wetland types vary substantially in their exposure to different hazards. In addition to changes in extreme temperatures by the end of the century, many inland wetlands are also in areas that are fire- or flooding prone. Many wetlands are in areas exposed to invasive weeds. The exposure of these ecosystems to more than two climate hazards is most often High or Very High by mid-century, although there is some variability. By the end of the century, most ecosystems are assessed as Very High under both climate scenarios.

Vulnerability: Most inland wetland ecosystems are assessed as Moderately vulnerable, although this varies from Low-to Very High. There is substantial variation in both sensitivity and adaptive capacity among these ecosystem types, with no clear patterns emerging. Management should consider the specific land environment in which wetlands are situated.

Risk: Risk to inland wetlands across both mid- and late-century timeframes, and across both climate scenarios considered, is High or Very High for the majority of ecosystems, although there is some variability in assessments particularly in the mid-century timeframe.

8.3.20 Coastal wetlands

Coastal wetlands in Canterbury are brackish or salt-influenced ecosystems—such as estuaries, lagoons, and swales—where freshwater from rivers mixes with the ocean. These wetlands provide critical habitat for native plants like mākaka (marsh ribbonwood), wīwī (sea rush), and oioi (jointed wire rush), and are essential for birds, fish, and mahinga kai values. Coastal wetlands have recently been well-mapped in the region, and comprise 25 ecosystem types:

- Abandoned channel
- Backswamp
- Basin
- Channel
- Coastal lagoon
- Creek
- Depression
- Donga
- Drain
- Dune slack
- Estuary
- Flat
- Floodplain
- Hapua
- Hollow
- Lake shore
- Levee
- Marginal
- Oxbow lake
- Pond
- Riparian
- Shore
- Swale
- Tidal river

We additionally included areas mapped as herbaceous saline vegetation.

Location: We mapped these ecosystems in all districts except Waitaki.

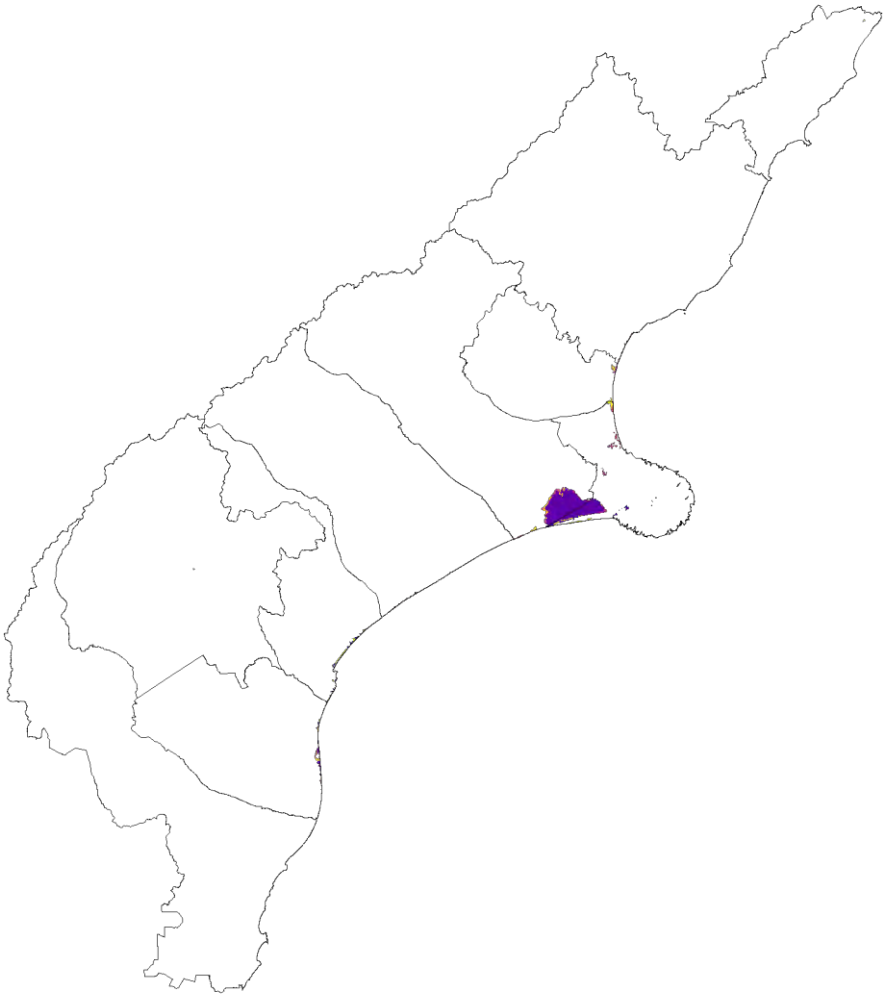


Figure 32—The distribution of coastal wetland ecosystems in Waitaha Canterbury. Each colour represents a unique ecosystem type.

Exposure: Coastal wetland ecosystems are very exposed to losses of extreme cold conditions, and exposure of many of these ecosystem types to coastal inundation is also high. Changes in rainfall will affect a large portion of the range of many coastal wetlands by the end of the century. Exposure to more than two hazards concurrently is highly variable among coastal ecosystem wetland types, being rated as Negligible to Very High across both timeframes and climate change scenarios considered.

Vulnerability: Vulnerability is assessed as High or Very High for all ecosystem types. Adaptive capacity is assessed as mostly Low or Moderate (although some High evaluations occur), while sensitivity is High or Very High for all ecosystem types.

Risk: Risk is mostly High to Very High across both timeframes and climate change scenarios considered.

9.0 Conclusions

This work represents a major undertaking in addressing the complex challenge of climate change for ecosystems in Waitaha Canterbury. We have carried out extensive mapping of ecosystems and hazards, and transparently evaluated both sensitivity and adaptive capacity. We also developed a robust framework for climate vulnerability and risk assessments that works even where on-the-ground data are scarce.

We consider this body of work to be a first attempt at tackling this important task, and hope that future work addresses limitations identified here. In particular, improved ecosystem mapping would deliver the greatest gains in refining vulnerability assessments. Future work should aim to replicate and extend this analysis once mapping and baseline data are enhanced. We nevertheless consider that the potential contributions of this work to conservation management in Waitaha Canterbury are substantial.

Although there are limitations, as clearly described in each section, our findings offer valuable new information for practical management by the project team. The sensitivity, adaptive capacity and exposure can be used to provide reommendations on management (we recommend as per a **Table 13**, following the approach taken by Brumby *et al.* (2025). Ultimately, this lays a stronger foundation for informed decision-making and better protection of Waitaha Canterbury's ecosystems in a changing climate.

Table 13—Method for deriving risk group, and management recommendations for each ecosystem.

Risk group	Sensitivity	Adaptive capacity	Cumulative exposure	Recommended actions
Highly Vulnerable	Moderate- Very High	Low- Moderate	High - Very High	Specific research and/or interventions generally needed
Potential Adapters	Moderate- Very High	High- Very High	High – Very High	Monitor and plan precautionary adaptive responses
Potential Persisters	Negligible - Low	Low- Moderate	High – Very High	Monitor population trends as a precaution
Latent Risk	Moderate- Very High	Low- Moderate	Negligible - Moderate	Monitor environmental variables and re-assess if predictions worsen
Sensitive Only	Moderate- Very High	High- Very High	Negligible - Moderate	No immediate action required but monitor populations and plan to adapt management if needed
Exposed Only	Negligible - Low	High- Very High	High – Very High	No immediate action required but monitor populations and plan to adapt management if needed
Low Adaptive Capacity Only	Negligible - Low	Low- Moderate	Negligible - Moderate	No immediate action required but monitor populations and plan to adapt management if needed
Low Vulnerability	Negligible - Low	High- Very High	Negligible - Moderate	No immediate action required but monitor populations and plan to adapt management if needed

Acknowledgments

We would like to thank AnaCapri Mauro (ECan) for facilitating this project and Ellery Mayence (DOC) for discussions regarding mapping of Naturally Uncommon Ecosystems.

References

Brumby A, Marshall J, Murray T, O'Donnell C, Richards R. 2025. Trait-based climate change vulnerability assessments of terrestrial taxa in Aotearoa New Zealand. Wellington: Department of Conservation. Science for Conservation 343.

Cieraad E, Walker S, Price R, Barringer J 2015. An updated assessment of indigenous cover remaining and legal protection in New Zealand's land environments. *New Zealand Journal of Ecology* 39: 309–315.

Dawson, J. (1988). Snow Banks. In Forest Vines to Snow Tussocks: The Story of New Zealand Plants (p. 192). Victoria University Press.

Etherington, T. R., Peltzer, D. A., & Wyse, S. V. (2022). Future climates are predicted to alter the potential distributions of non-native conifer species in New Zealand. New Zealand Journal of Ecology, 46(1), 1–14. JSTOR.

Gibson, P. B., Campbell, I., Lewis, H., Rampal, N., Fedaeff, N., Woolley, J-M. (2024a). User Guidance of CMIP6 Downscaled Data for Aotearoa New Zealand. NIWA Report prepared for MfE, https://climatedata.environment.govt.nz/files/CMIP6_guidance_doc_June2024.pdf, 20p.

Gibson, P. B., Stuart, S., Sood, A., Stone, D., Rampal, N., Lewis, H., Broadbent, A., Thatcher, M., & Morgenstern, O. (2024b). Dynamical downscaling CMIP6 models over New Zealand: added value of climatology and extremes. Climate Dynamics, https://doi.org/10.1007/s00382-024-07337-5, 27p.

IPCC (2022). *AR6 Working Group II Report: Impacts, Adaptation and Vulnerability.*

IPCC (2022b). *Annex II: Glossary* [Möller, V., R. van Diemen, J.B.R. Matthews, C. Méndez, S. Semenov, J.S. Fuglestvedt, A. Reisinger (eds.)]. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 2897–2930, doi:10.1017/9781009325844.029.

Johnson, P., & Gerbeaux, P. (2004). *Wetland types in New Zealand*. Department of Conservation. https://www.orc.govt.nz/media/xalnctf3/wetland-types-in-new-zealand-johnson-gerbeaux-2004.pdf

Kirk, Robert (1967). *Beach morphology and sediments of the Canterbury Bight*. Christchurch: University of Canterbury.

Macara G. R. 2016. THE CLIMATE AND WEATHER OF CANTERBURY 2nd edition NIWA SCIENCE AND TECHNOLOGY SERIES NUMBER 68 ISSN 1173-0382

Melia, N., Dean, S., Pearce, H. G., Harrington, L., Frame, D. J., & Strand, T. (2022). Aotearoa New Zealand's 21st-century wildfire climate. Earth's Future, 10, e2022EF002853. https://doi.org/10.1029/2022EF002853

Ministry for the Environment. 2024. Coastal hazards and climate change guidance. Wellington: Ministry for the Environment.

Naish, T. et al. (2024) The significance of vertical land movements at convergent plate boundaries in probabilistic sea-level projections for AR6 scenarios: the New Zealand case. *Earth's Future*

Paulik, R., Wild, A., Stephens, S., Welsh, R., & Wadhwa, S. (2023). National assessment of extreme sea-level driven inundation under rising sea levels. Frontiers in Environmental Science, Volume 10-2022. https://doi.org/10.3389/fenvs.2022.1045743

R Core Team (2005). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria.

Singers, N.J.D.; Rogers, G.M. 2014: A classification of New Zealand's terrestrial ecosystems. Science for Conservation 325. Department of Conservation, Wellington. 87 p.

Te Rūnanga o Ngāi Tahu (2018). HE RAUTAKI MŌ TE HURINGA O TE ĀHUARANGI - CLIMATE CHANGE STRATEGY.

Tonkin & Taylor Ltd. 2022. Canterbury Climate Change Risk Assessment. Prepared for Environment Canterbury. Version 5.0. 247 p.

Tuck M, Dickson M, Ryan E, Ford M, Konlechner T. A national scale coastal change dataset for Aotearoa New Zealand. Data Brief. 2024 Nov 3;57:111104. doi: 10.1016/j.dib.2024.111104. PMID: 39624661; PMCID: PMC11609698.

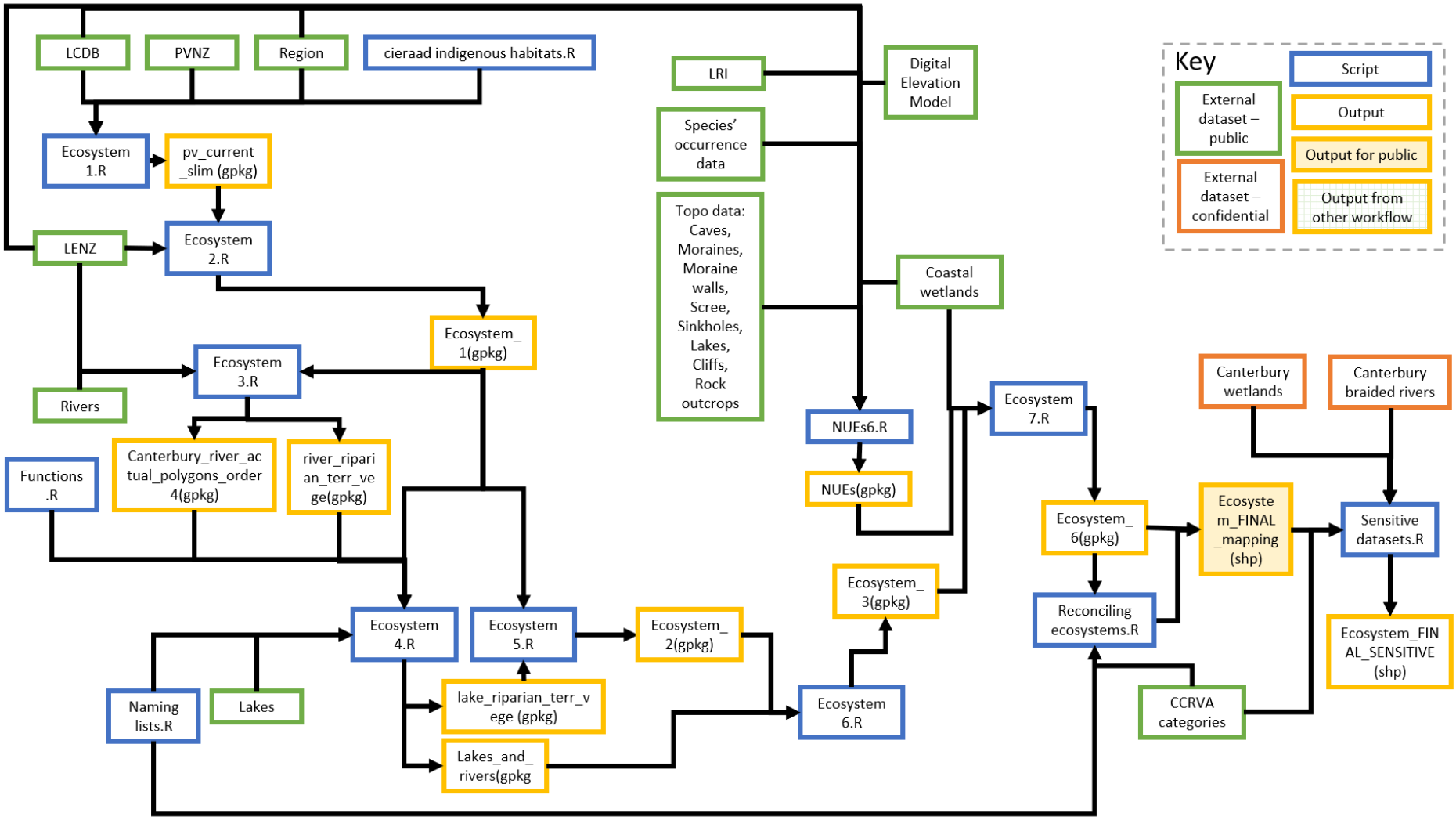
Wildland Consultants (2025). Climate Change in Waitaha Canterbury– Data Review. Wildland Consultants Contract Report No. 7603a. Prepared for Environment Canterbury. 56pp.

Williams PA, Wiser S, Clarkson B, Stanley MC 2007. New Zealand's historically rare terrestrial ecosystems set in a physical and physiognomic framework. New Zealand Journal of Ecology 31: 119-128.

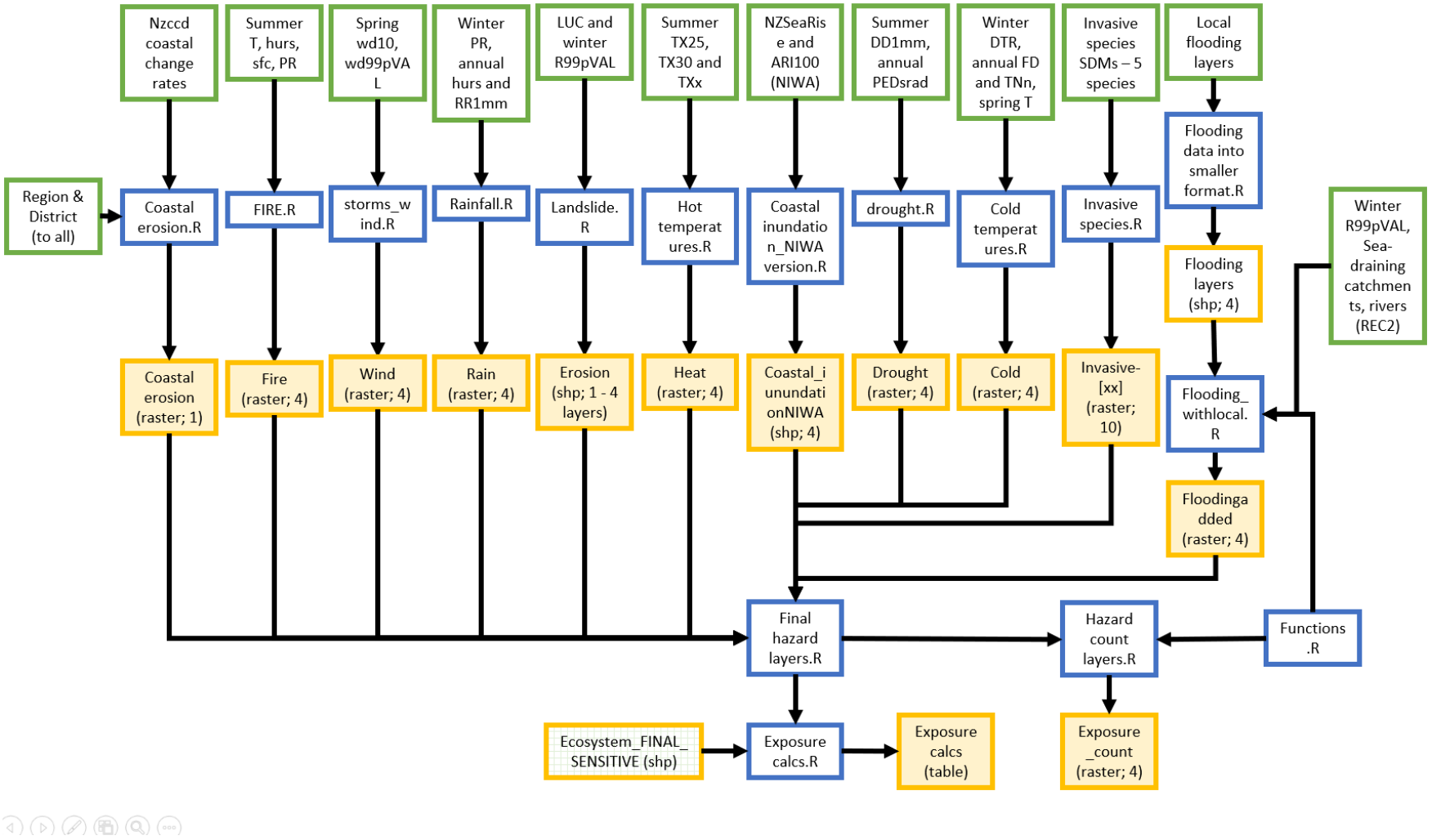
Wiser SK, Buxton RP, Clarkson BR, Richardson SJ, Smale MC, West C, Williams PA 2007. New Zealand Naturally Uncommon Ecosystems factsheets. www.landcareresearch.co.nz/publications/naturally-uncommon-ecosystems/ Date accessed: 6 May 2025

Appendix 1

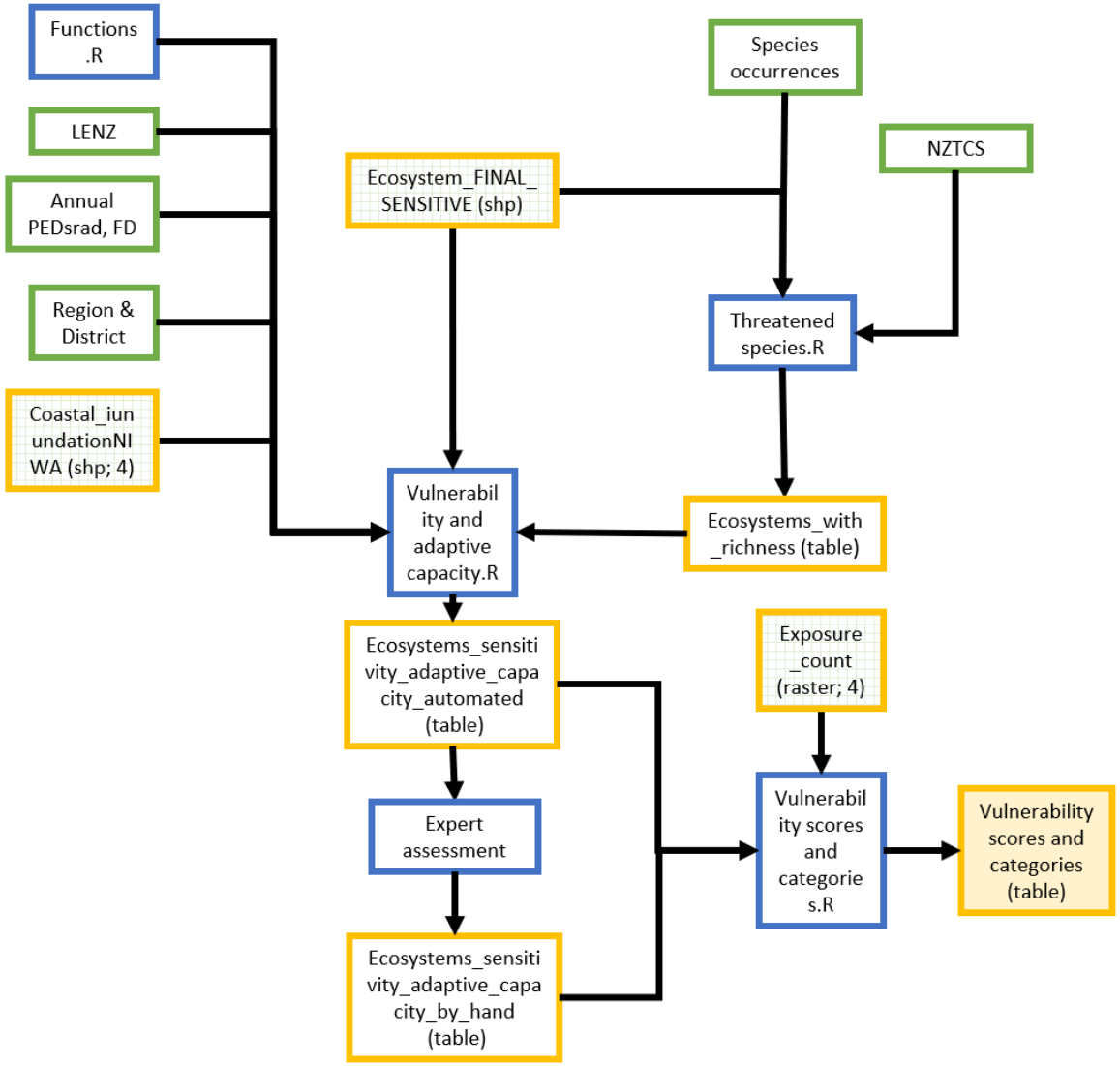
Dataset and analysis workflow – Identifying and mapping ecosystems



Dataset and analysis workflow – Climate change exposure



Dataset and analysis workflow – Ecosystem vulnerability



Appendix 2

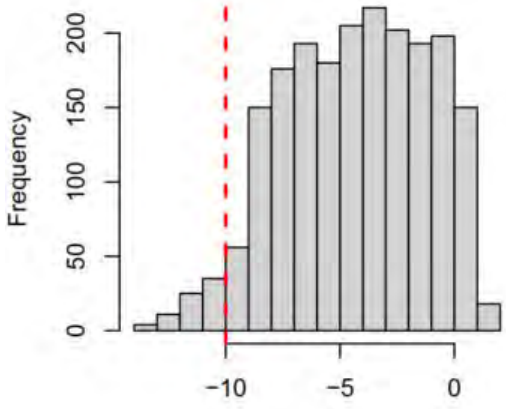
Reconciling ecosystems

LCDB value taken	1. LCDB mapping of aquatic, rocky or nival habitat currently indicates that the area is unsuitable for the PV. 2. LCDB records of forest (an advanced secessional community) in areas where PV indicates that this is not possible suggests that the PV categorisation is incorrect in this location.
PV value taken	3. Typological resolution in PV categorisation is greatest and is preferentially taken.
PV value + "successional or degraded"	4. Areas where forest is expected in the PV layer that host these categories are assumed to be degraded or successional variants 5. Areas where wetlands are expected in the PV layer but dryland habitats are reported in the LCDB are assumed to have degraded hydrological function.
Names mixed	6. Best typological resolution for these communities is provided by LCDB. More nuance is provided by PV by describing whether this community is above or below the natural treeline.
NA	7. No overlap in Waitaha

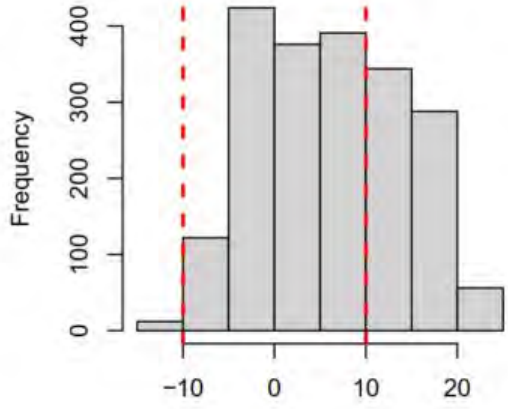
	Land cover database (LCDB) designation																		
Potential vegetation designation	Broadleaved Indigenous	Estuarine Open Water	Gravel or Rock	Herbaceous Freshwater	Herbaceous Saline	Lake or Pond	River	Sand or Gravel	Indigenous Forest	Manuka and/or Kanuka	Tall Tussock Grassland	Alpine	Landslide	Matagouri or Grey Scrub	Sub Alpine Shrubland	Depleted Grassland	Fernland	Flaxland	Permanent Snow and Ice
Dunelands																			
Hall's totara-miro-rimu/kamahi-silver beech-southern rata forest																			
Hall's totara-miro/kamahi-southern rata broadleaf forest																			
Hall's totara/broadleaf forest																			
Hall's totara/silver-beech-kamahi-southern rata forest																			
Kahikatea-matai/tawa-mahoe forest																			
Kahikatea-pukatea-tawa forest																			
Kahikatea-totara forest																			
Kauri/taraire-kohekohe-tawa forest																			
Matai-kahikatea-totara forest																			
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest																			
Matai-totara/black/mountain beech forest																			
Mountain beech forest																			
Mountain beech-red beech forest																			
Red beech-silver beech forest																			
Rimu-matai-miro-totara/kamahi forest																			
Rimu-miro-totara/kamahi forest																			
Rimu-miro/kamahi-red beech-hard beech forest																			
Rimu/tawa-kamahi forest																			
Scrub, shrubland and tussock-grassland below treeline																			
Scrub, tussock-grassland and herbfield above treeline																			
Silver beech forest																			
Wetlands																			
Unclassified																			

Appendix 3

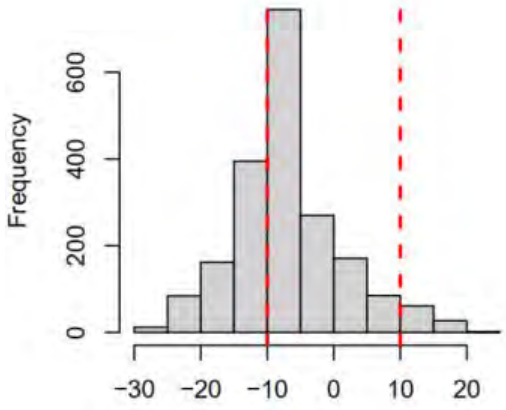
Climate variable threshold selection



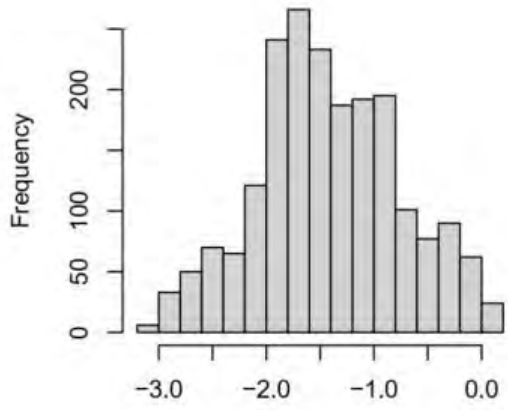
Change in number of rainy days (>=1mm) in 2099 under the 3-7.0 pathway



Change in total rainfall in summer (mm) in 2099 under the 3-7.0 pathway



Change in total rainfall in winter (mm) in 2099 under the 3-7.0 pathway



Change in average relative humidity (annual) in 2099 under the 3-7.0 pathway

Figure 9—Predicted changes in four variables (clockwise from top left: number of rainy days (>=1mm), total rainfall summer, total rainfall winter, and average relative humidity) representing rainfall hazard in Waitaha Canterbury for one climate scenario (2099 under the +3-7.0 pathway). Y axis represents how common that level of change is across the landscape (frequency of grid cells). Red lines indicate thresholds used for exposure analysis.

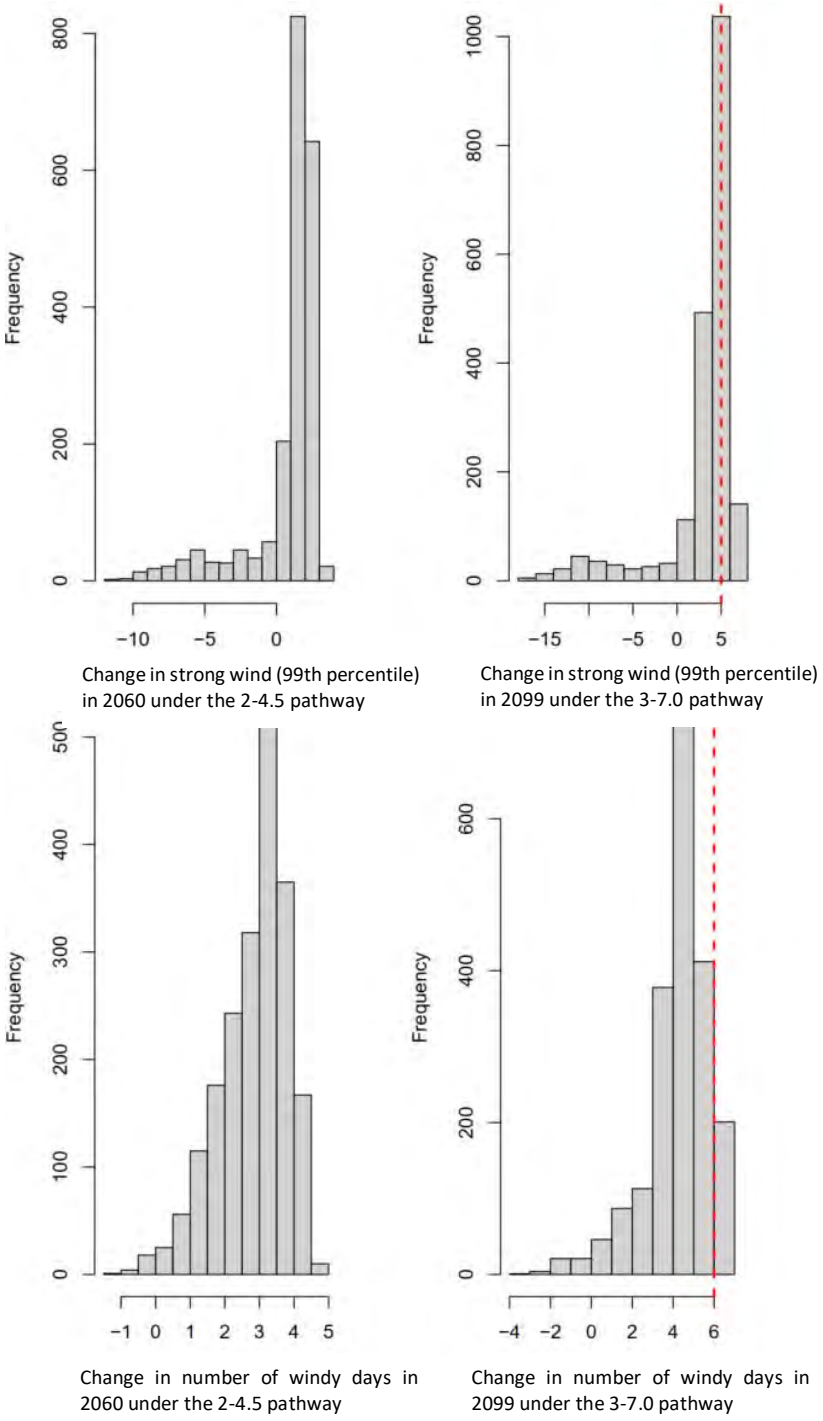


Figure 10—Predicted changes in two variables (Top: strong wind (99th percentile), bottom: number of windy days (>10m/s)) representing storm/wind hazard in Waitaha Canterbury for one two climate scenarios (left panels: 2060 under the 2-4.5 pathway; right panels: 2099 under the 3-7.0 pathway). Y axis represents how common that level of change is across the landscape (frequency of grid cells). Red lines indicate thresholds used for exposure analysis.

Table 14—Habitat suitability under current and future climates for five invasive plant species (0 – not suitable, 1 –climatically suitable). Colouration indicates *climatic* suitability only and does not account for other limitations of species' distributions that can ultimately exclude them from the site.

Species	Current (1979-2013)	Future (2061-2080)
Old man's beard (*Clematis vitalba*)		
Khasia berry (*Cotoneaster simonsii*)		
Lodgepole pine (*Pinus contorta*)		
Russell Lupin (*Lupinus polyphyllus*)		
Douglas fir (*Pseudotsuga menziesii*)		



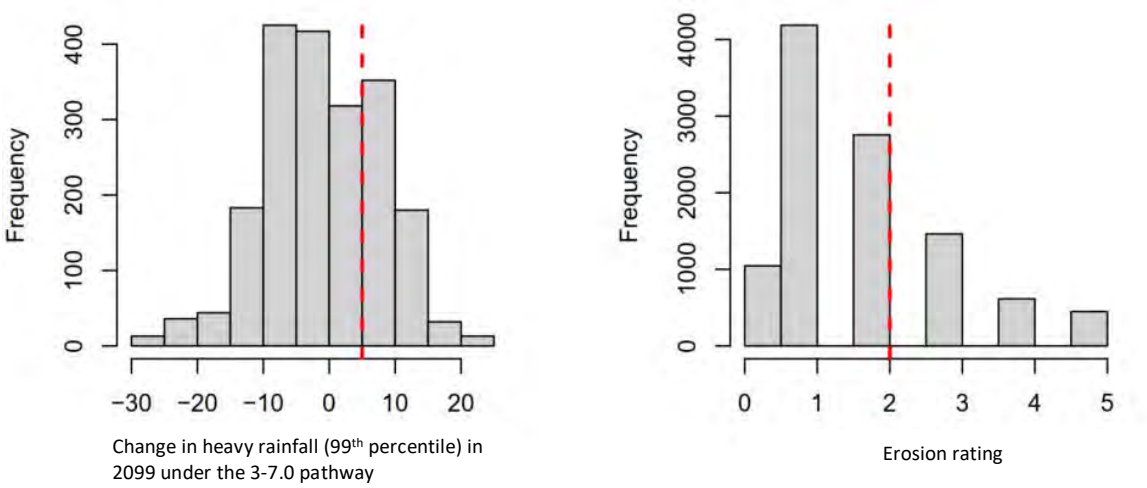
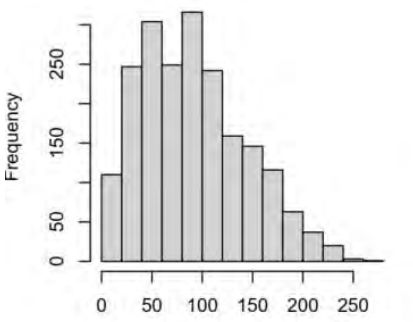
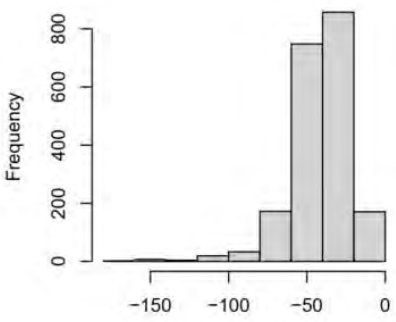


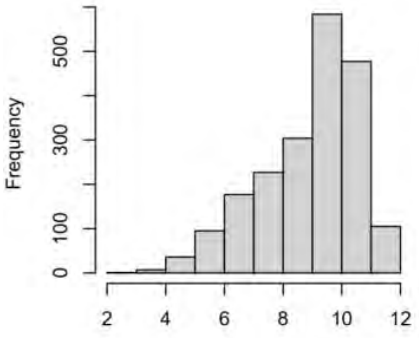
Figure 11—Predicted changes in heavy rainfall (99th percentile) in 2099 under the 3-7.0 pathway is presented in the left panel. On the right, the New Zealand Land Resource Inventory (NZLRI) erosion layer (climate-independent). Together, these represent landslides/soil erosion hazard in Waitaha Canterbury. Y axis represents how common a particular condition is across the landscape (frequency of grid cells). Red lines indicate thresholds used for exposure analysis.



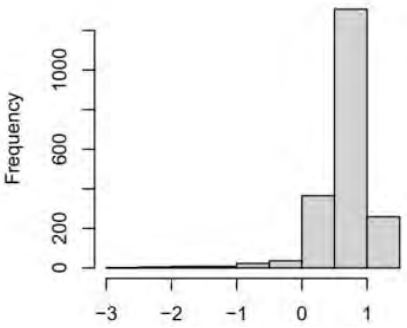
Number of frost days (<0°C) currently.



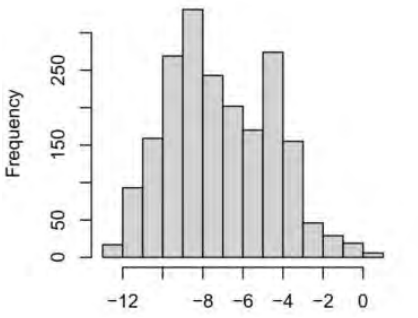
Change in number of frost days (<0°C) in 2099 under the 3-7.0 pathway.



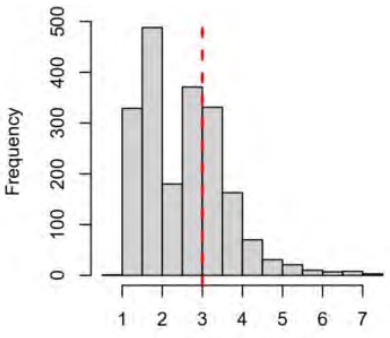
Average daily air temperature range (winter; °C) currently.



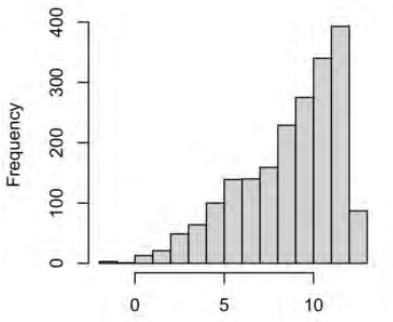
Change in average daily air temperature range (winter; °C) in 2099 under the 3-7.0 pathway.



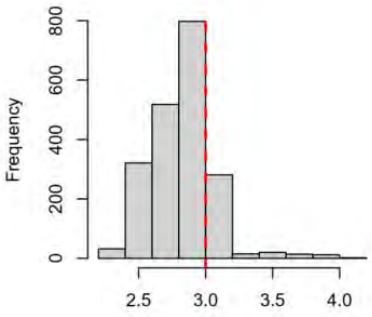
Temperature on the coldest day of the year (°C) currently.



Change in temperature on the coldest day (°C) in 2099 under the 3-7.0 pathway.

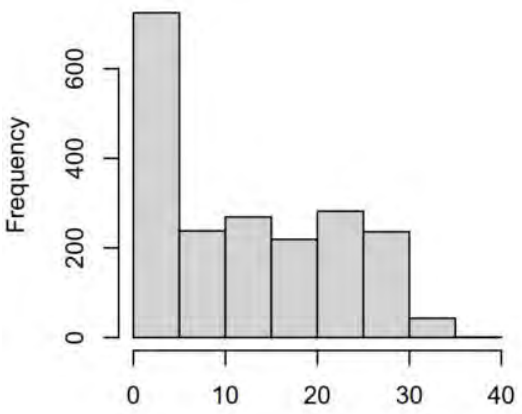


Mean temperature in spring (°C) currently.

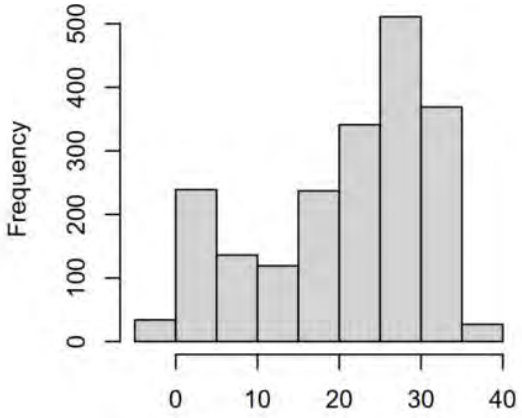


Change in mean temperature in spring (°C) in 2099 under the 3-7.0 pathway.

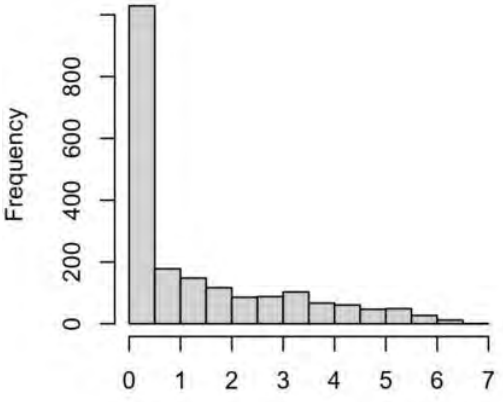
Figure 12—Predicted change in four variables representing extreme cold in Waitaha Canterbury currently (left-hand panels) and for one climate scenario (right-hand panels; 2099 under the 3-7.0 pathway). Y axis represents how common that level of change is across the landscape (frequency of grid cells). From top: number of frost days (<0°C), average daily air temperature range (winter), temperature on the coldest day of the year and mean temperature in the spring. Red lines indicate thresholds used for exposure analysis.



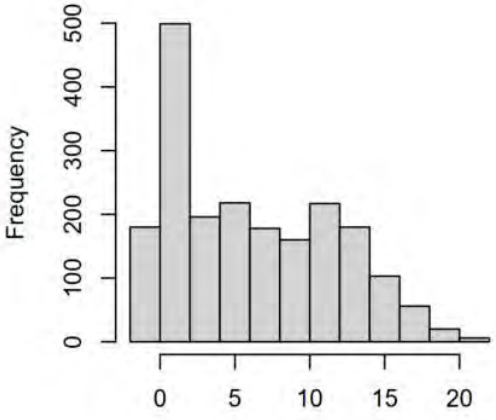
Number of hot days (>25°C) currently.



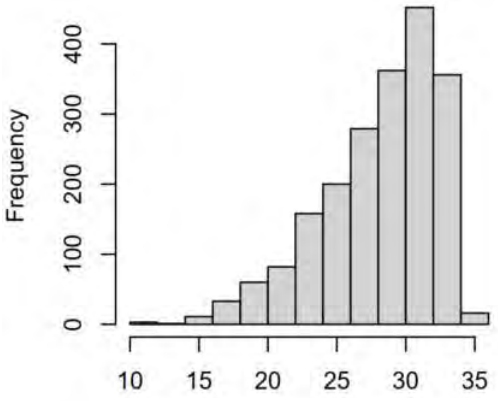
Change in number of hot days (>25°C) in 2099 under the 3-7.0 pathway.



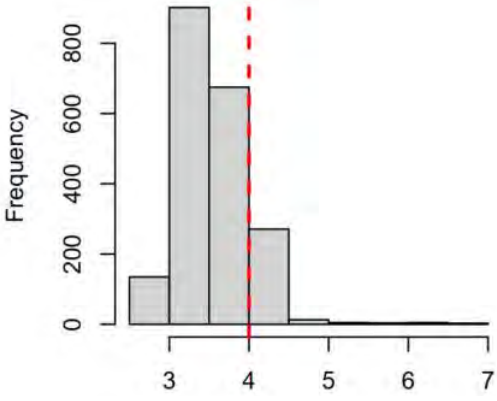
Number of very hot days (>30°C) currently.



Change in number of very hot days (>30°C) in 2099 under the 3-7.0 pathway.

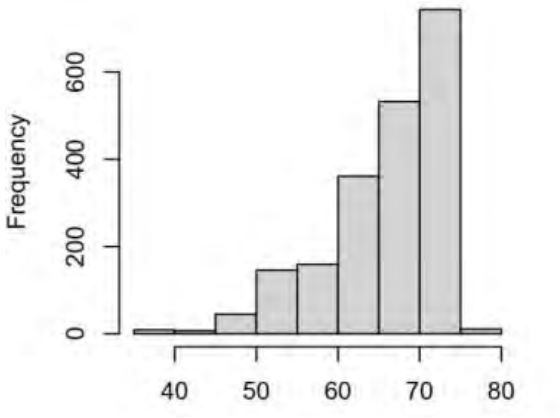


Temperature on the hottest day of the year (°C) currently.

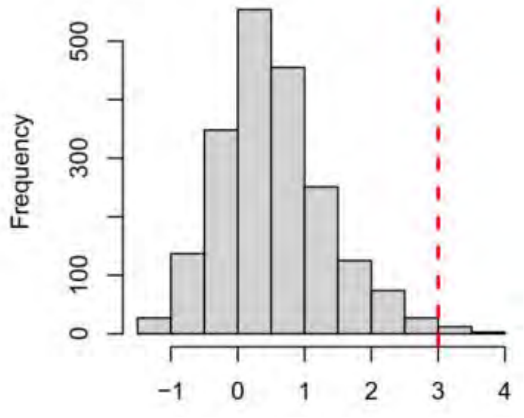


Change in temperature on the hottest day of the year (°C) in 2099 under the 3-7.0

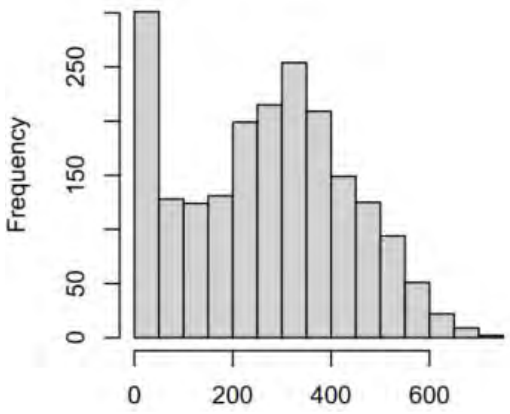
Figure 13—Predicted changes in three variables representing extreme heat in Waitaha Canterbury currently (left-hand panels) and for one climate scenario (right-hand panels; 2099 under the 3-7.0 pathway). Y axis represents how common that level of change is across the landscape (frequency of grid cells). From top: number of hot days (>25°C), number of extremely hot days (>30°C), and temperature on the hottest day of the year. Red lines indicate thresholds used for exposure analysis.



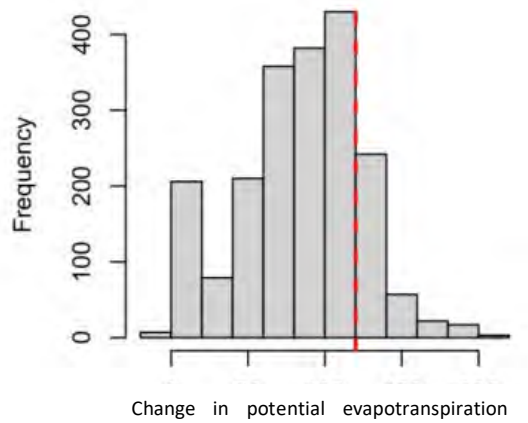
Number of dry days in summer (<1mm) currently.



Change in number of dry days in summer (<1mm) in 2099 under the 3-7.0 pathway.

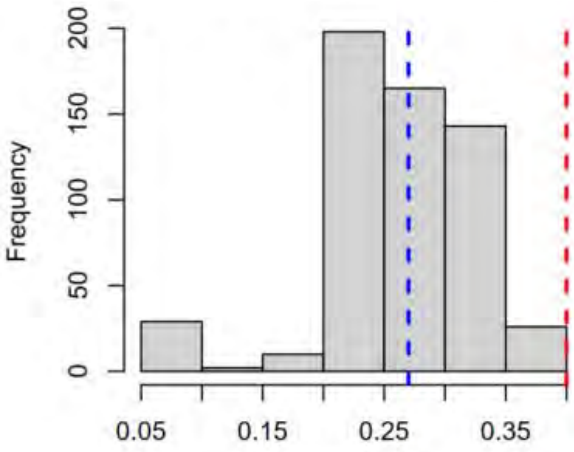


Potential evapotranspiration deficit (PED) currently.

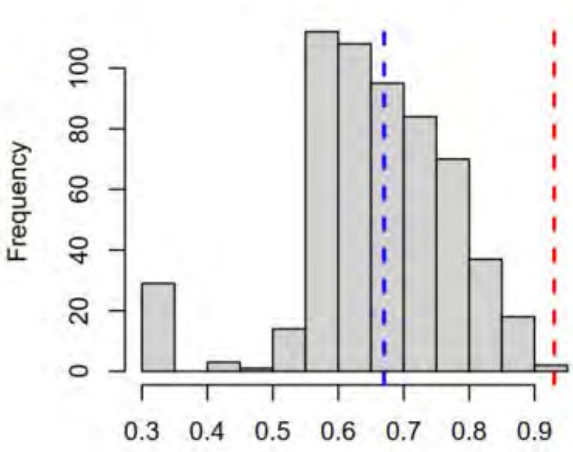


Change in potential evapotranspiration deficit (PED) in 2099 under the 3-7.0 pathway.

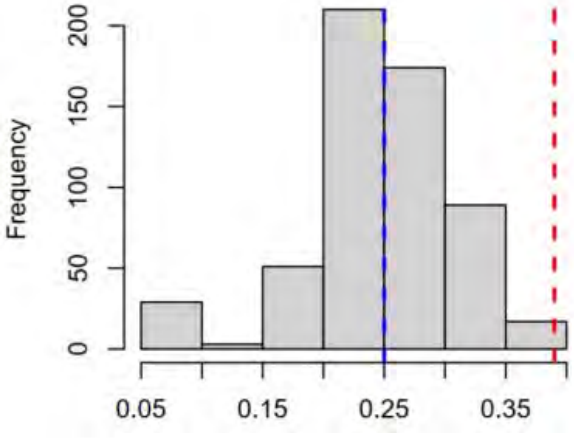
Figure 14—Predicted changes in two variables representing drought in Waitaha Canterbury currently (left-hand panels) and for one climate scenario (right-hand panels; 2099 under the 3-7.0 pathway). Y axis represents how common that level of change is across the landscape (frequency of grid cells). From top: number of dry days in summer (<1mm) and potential evapotranspiration deficit (PED). Red lines indicate thresholds used for exposure analysis.



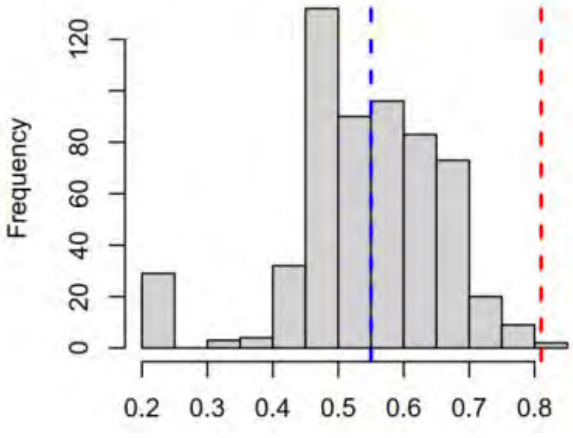
Mean sea-level rise in 2060 under the 2-4.5 pathway.



Mean sea-level rise in 2099 under the 3-7.0 pathway.



Mean sea-level rise in 2060 under the 2-4.5 pathway.



Mean sea-level rise in 2099 under the 2-4.5 pathway.

Figure 15—Predicted sea-level rise in Waitaha Canterbury under four future climate scenarios (m). Frequency indicates the number of locations at which each quantum of sea level rise is expected. The distribution is provided together with the regional median sea level rise (blue) and the regional maximum sea level rise (red). These thresholds were used in conjunction with NIWA 1 AEP model results (not shown here).

Appendix 4

Ecosystem exposure to climate change

Exposure of ecosystems to climate change hazards in Waitaha Canterbury under: **SSP2-4.5 in the mid-century timeframe** (245_60), **SSP2-4.5 in the late-century timeframe** (245_99), **SSP3-7.0 in the mid-century timeframe** (370_60) and **SSP3-7.0 in the late-century timeframe** (245_60).

CV = Old Man's Beard (*Clematis vitalba*), CS = Khasia berry (*Cotoneaster simonsii*), LP = Russell Lupin (*Lupinus polyphyllus*), PC = Lodgepole pine (*Pinus contorta*) and PM = Douglas fir (*Pseudotsuga menziesii*). Area exposed excludes overlap with invasive species.

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Alpine Grass/Herbfield_successional/degradedE1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Alpine Grass/Herbfield_successional/degradedP1	1%	14%	2%	100%	0%	21%	0%	54%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	70%	0%	51%	1%	61%	0%	0%	0%	3%	0%	71%	84%	75%	54%	0%	0%	0%	0%	9%	27%	16%	44%
Alpine Grass/Herbfield_successional/degradedP2	15%	88%	81%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	0%	66%	0%	66%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	10%	19%	97%
Alpine Grass/Herbfield_successional/degradedQ1	0%	0%	0%	87%	0%	3%	0%	46%	0%	5%	0%	0%	0%	0%	0%	0%	0%	20%	0%	81%	2%	3%	1%	90%	0%	0%	0%	14%	0%	100%	100%	100%	100%	0%	0%	0%	0%	9%	67%	22%	23%
Alpine Grass/Herbfield_successional/degradedQ2	0%	0%	0%	41%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
Alpine Grass/Herbfield_successional/degradedR1	7%	72%	13%	100%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	19%	0%	10%	1%	50%	0%	0%	0%	0%	0%	2%	12%	6%	2%	0%	0%	0%	0%	60%	60%	78%	88%
Alpine Grass/Herbfield_successional/degradedT1	1%	78%	4%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	5%	3%	74%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	15%	17%	25%	25%
Braided river	36%	82%	57%	95%	0%	8%	1%	35%	21%	24%	30%	22%	27%	25%	40%	38%	2%	28%	10%	57%	9%	34%	4%	55%	0%	0%	0%	35%	76%	90%	80%	50%	90%	0%	0%	0%	0%	4%	3%	4%	6%
Broadleaved Indigenous HardwoodsB3	24%	100%	24%	100%	0%	0%	0%	86%	0%	0%	0%	0%	14%	0%	14%	14%	0%	9%	0%	86%	0%	86%	0%	100%	0%	0%	0%	0%	100%	100%	100%	76%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Broadleaved Indigenous HardwoodsE1	62%	92%	88%	100%	0%	12%	5%	71%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	97%	0%	97%	29%	100%	0%	0%	0%	0%	98%	100%	100%	99%	100%	0%	0%	0%	0%	90%	0%	0%	0%
Broadleaved Indigenous HardwoodsE4	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	67%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Broadleaved Indigenous HardwoodsF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	84%	0%	0%	0%	84%	0%	0%	0%	0%	32%	100%	0%	0%	100%	26%	28%	26%	28%	0%	0%	0%	0%
Broadleaved Indigenous HardwoodsJ2	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	36%	36%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	36%	0%	100%	1%	8%	1%	12%	0%	0%	0%	0%
Broadleaved Indigenous HardwoodsK1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	16%	100%	100%	100%	100%	0%	0%	0%	0%	29%	29%	29%	29%
Broadleaved Indigenous HardwoodsN2	0%	100%	0%	100%	0%	0%	0%	17%	0%	17%	17%	17%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Broadleaved Indigenous HardwoodsN4	8%	69%	8%	93%	0%	0%	0%	0%	0%	6%	6%	0%	3%	26%	26%	26%	0%	3%	0%	93%	3%	19%	18%	81%	0%	0%	0%	81%	77%	100%	92%	92%	98%	0%	0%	0%	0%	0%	31%	31%	31%
Broadleaved Indigenous HardwoodsNA	84%	97%	92%	100%	0%	58%	46%	78%	2%	3%	3%	3%	22%	0%	11%	14%	0%	51%	3%	87%	0%	82%	3%	86%	0%	0%	0%	5%	95%	100%	93%	42%	100%	0%	0%	0%	0%	15%	1%	1%	1%
Broadleaved Indigenous HardwoodsP1	11%	75%	15%	97%	0%	4%	1%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	0%	80%	0%	69%	46%	78%	0%	0%	0%	11%	69%	96%	100%	99%	99%	0%	0%	0%	0%	46%	3%	13%	23%
Broadleaved Indigenous HardwoodsP2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	82%	100%	100%	82%	0%	0%	0%	0%	81%	70%	100%	100%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Broadleaved Indigenous HardwoodsP5	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Broadleaved Indigenous HardwoodsQ1	0%	55%	0%	100%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	55%	0%	100%	0%	96%	2%	96%	0%	0%	0%	98%	96%	100%	100%	100%	100%	0%	0%	0%	0%	4%	4%	4%	4%
Broadleaved Indigenous HardwoodsQ2	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Broadleaved Indigenous HardwoodsR1	0%	68%	6%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	1%	1%	82%	0%	0%	0%	0%	0%	6%	44%	44%	40%	0%	0%	0%	0%	57%	76%	79%	79%
Coastal wetland - Abandoned Channel	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	78%	84%	78%	87%	0%	0%	0%	0%
Coastal wetland - Backswamp	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	12%	0%	0%	0%	0%	100%	100%	0%	0%	100%	5%	20%	5%	22%	0%	0%	0%	0%
Coastal wetland - Basin	100%	100%	100%	100%	0%	0%	0%	0%	12%	12%	79%	12%	64%	0%	64%	64%	0%	0%	0%	12%	0%	88%	0%	100%	0%	0%	0%	0%	70%	70%	6%	0%	70%	64%	82%	64%	84%	0%	0%	0%	0%
Coastal wetland - Channel	100%	100%	100%	100%	0%	0%	0%	0%	48%	48%	66%	48%	10%	0%	9%	9%	0%	0%	0%	1%	1%	73%	0%	100%	0%	0%	0%	0%	40%	42%	0%	0%	42%	50%	58%	50%	60%	0%	0%	0%	0%
Coastal wetland - Coastal Lagoon	100%	100%	100%	100%	0%	0%	0%	0%	90%	90%	98%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	78%	0%	100%	0%	0%	0%	0%	99%	99%	0%	0%	99%	23%	24%	23%	24%	0%	1%	1%	0%
Coastal wetland - Creek	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%
Coastal wetland - Depression	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Coastal wetland - Donga	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Coastal wetland - Drain	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Coastal wetland - Dune slack	100%	100%	100%	100%	0%	0%	0%	0%	27%	27%	27%	27%	0%	0%	0%	0%	0%	0%	0%	0%	0%	61%	0%	100%	0%	0%	0%	0%	17%	29%	0%	0%	29%	30%	59%	30%	65%	0%	2%	2%	0%
Coastal wetland - Estuary	84%	100%	84%	100%	0%	0%	0%	0%	46%	46%	59%	46%	24%	0%	11%	11%	0%	0%	0%	36%	0%	39%	0%	98%	0%	0%	0%	0%	93%	98%	0%	0%	98%	97%	98%	97%	99%	0%	0%	0%	0%
Coastal wetland - Flat	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	100%	80%	100%	0%	0%	0%	0%	14%	14%	0%	0%	14%	22%	50%	22%	57%	0%	0%	0%	0%
Coastal wetland - Floodplain	100%	100%	100%	100%	0%	0%	0%	0%	94%	94%	94%	94%	2%	0%	0%	0%	0%	0%	0%	2%	0%	88%	0%	99%	0%	0%	0%	0%	99%	99%	2%	0%	99%	95%	98%	95%	98%	0%	0%	0%	0%
Coastal wetland - Hapua	100%	100%	100%	100%	0%	0%	0%	0%	73%	73%	73%	73%	4%	2%	2%	2%	0%	0%	0%	0%	0%	27%	0%	27%	0%	0%	0%	0%	4%	4%	0%	0%	4%	90%	94%	90%	95%	0%	0%	0%	0%
Coastal wetland - Hollow	100%	100%	100%	100%	0%	0%	0%	0%	93%	93%	100%	93%	6%	0%	5%	5%	0%	0%	0%	0%	0%	98%	0%	98%	0%	0%	0%	0%	74%	74%	0%	0%	74%	73%	74%	73%	93%	0%	0%	0%	0%
Coastal wetland - Lake shore	100%	100%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	100%	44%	64%	44%	65%	0%	0%	0%	0%
Coastal wetland - Levee	100%	100%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	97%	100%	97%	100%	0%	0%	0%	0%
Coastal wetland - Marginal	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	8%	0%	0%	0%	0%
Coastal wetland - Oxbow Lake	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	3%	0%	0%	0%	0%
Coastal wetland - Pond	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	52%	0%	54%	0%	0%	0%	0%
Coastal wetland - Riparian	97%	100%	100%	100%	0%	0%	0%	0%	15%	15%	68%	15%	58%	2%	28%	28%	0%	0%	0%	0%	3%	82%	0%	85%	0%	0%	0%	0%	59%	59%	0%	0%	59%	60%	69%	60%	70%	0%	0%	0%	0%
Coastal wetland - Shore	100%	100%	100%	100%	0%	0%	0%	0%	99%	99%	99%	99%	0%	0%	0%	0%	0%	0%	0%	0%	1%	100%	1%	100%	0%	0%	0%	0%	99%	99%	0%	0%	99%	72%	94%	72%	97%	0%	0%	0%	0%
Coastal wetland - Swale	100%	100%	100%	100%	0%	0%	0%	0%	48%	48%	48%	48%	6%	0%	0%	0%	0%	0%	0%	29%	0%	52%	0%	95%	0%	0%	0%	0%	45%	45%	14%	0%	45%	65%	82%	65%	85%	0%	0%	0%	0%
Coastal wetland - Tidal river	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	91%	94%	91%	96%	0%	0%	0%	0%
Depleted Grassland_successional/degradedB3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Depleted Grassland_successional/degradedE1	0%	71%	68%	100%	0%	0%	0%	73%	0%	0%	0%	0%	83%	0%	83%	0%	0%	100%	70%	100%	0%	98%	0%	98%	0%	0%	0%	2%	100%	100%	100%	100%	100%	0%	0%	0%	0%	30%	1%	1%	1%
Depleted Grassland_successional/degradedE4	0%	0%	0%	93%	0%	39%	0%	85%	89%	90%	90%	90%	0%	47%	47%	47%	0%	89%	38%	100%	7%	3%	0%	20%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	8%	22%	53%	72%
Depleted Grassland_successional/degradedK1	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Depleted Grassland_successional/degradedK2	0%	4%	0%	60%	0%	28%	0%	60%	60%	60%	60%	60%	0%	72%	72%	72%	0%	100%	18%	100%	40%	0%	0%	40%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	19%	68%	73%	92%
Depleted Grassland_successional/degradedK3	0%	0%	0%	3%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	97%	97%	0%	97%	0%	0%	0%	97%	97%	100%	100%	100%	100%	0%	0%	0%	0%	0%	29%	0%	29%
Depleted Grassland_successional/degradedK4	0%	0%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Depleted Grassland_successional/degradedN3	0%	0%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	9%	9%	0%	0%	0%	91%	91%	91%	9%	100%	0%	0%	0%	100%	91%	100%	100%	100%	100%	0%	0%	0%	0%	0%	9%	9%	9%
Depleted Grassland_successional/degradedN4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	63%	0%	0%	0%	100%	0%	0%	0%	50%	27%	100%	100%	27%	100%	0%	0%	0%	0%	0%	94%	94%	94%
Depleted Grassland_successional/degradedN5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Depleted Grassland_successional/degradedN6	0%	0%	0%	20%	0%	0%	0%	0%	43%	43%	43%	43%	0%	100%	100%	100%	0%	0%	0%	43%	57%	0%	10%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	67%	90%	90%	90%
Depleted Grassland_successional/degradedNA	0%	6%	0%	22%	0%	5%	0%	8%	15%	16%	15%	5%	3%	87%	90%	87%	0%	8%	4%	54%	25%	4%	32%	96%	0%	0%	0%	31%	42%	100%	97%	87%	100%	0%	0%	0%	0%	6%	13%	17%	13%
Depleted Grassland_successional/degradedP1	0%	2%	0%	100%	0%	3%	0%	38%	0%	0%	0%	0%	1%	0%	1%	0%	0%	4%	2%	99%	0%	25%	0%	28%	0%	0%	0%	74%	1%	100%	100%	100%	96%	0%	0%	0%	0%	11%	65%	11%	80%
Depleted Grassland_successional/degradedQ1	0%	0%	0%	83%	0%	1%	0%	3%	1%	9%	2%	1%	0%	11%	11%	11%	0%	18%	0%	97%	19%	0%	7%	77%	0%	0%	0%	34%	3%	100%	100%	100%	100%	0%	0%	0%	0%	6%	90%	61%	68%
Depleted Grassland_successional/degradedQ2	0%	0%	0%	65%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	10%	0%	1%	0%	100%	0%	0%	30%	95%	0%	0%	0%	12%	6%	100%	100%	100%	100%	0%	0%	0%	0%	0%	99%	81%	78%
Depleted Grassland_successional/degradedR1	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%
DunelandsB9	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	42%	0%	0%	1%	18%	23%	18%	24%	0%	0%	0%	0%
DunelandsJ2	100%	100%	100%	100%	0%	0%	0%	0%	96%	96%	100%	96%	4%	0%	0%	0%	0%	0%	0%	0%	0%	11%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	8%	11%	8%	12%	0%	1%	84%	0%
Ephemeral wetlands	7%	7%	7%	70%	0%	0%	0%	4%	3%	3%	10%	0%	0%	6%	6%	6%	0%	4%	0%	6%	0%	42%	29%	40%	0%	0%	0%	9%	11%	86%	73%	47%	86%	3%	3%	3%	3%	0%	14%	14%	52%
Fernland_successional/degradedB9	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Fernland_successional/degradedE1	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
Fernland_successional/degradedN1	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Fernland_successional/degradedNA	1%	34%	6%	87%	0%	0%	0%	13%	14%	17%	16%	8%	58%	61%	61%	64%	0%	71%	14%	94%	0%	6%	0%	11%	0%	0%	0%	81%	43%	93%	95%	76%	97%	1%	1%	1%	1%	15%	4%	4%	4%
Fernland_successional/degradedQ1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	0%	0%
Gravel or RockB3	14%	96%	51%	100%	0%	16%	0%	93%	10%	11%	10%	10%	43%	5%	24%	25%	0%	50%	15%	96%	0%	85%	0%	79%	0%	0%	0%	15%	100%	100%	100%	96%	100%	0%	0%	0%	0%	34%	6%	6%	13%
Gravel or RockB8	82%	100%	86%	100%	0%	84%	0%	86%	6%	24%	19%	12%	76%	12%	76%	12%	0%	100%	28%	100%	0%	86%	3%	86%	0%	0%	0%	14%	76%	100%	65%	44%	100%	0%	0%	0%	0%	8%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Gravel or RockB9	100%	100%	100%	100%	0%	100%	0%	100%	96%	96%	96%	96%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	2%	100%	0%	0%	0%	0%	0%	82%	0%	0%	24%	18%	18%	18%	18%	0%	0%	0%	0%
Gravel or RockE1	36%	71%	48%	100%	0%	30%	8%	78%	3%	3%	3%	3%	32%	1%	32%	3%	0%	65%	10%	93%	0%	80%	2%	86%	0%	0%	0%	15%	91%	99%	99%	97%	99%	0%	0%	0%	0%	60%	2%	13%	10%
Gravel or RockE3	0%	100%	4%	100%	0%	90%	0%	97%	0%	0%	0%	0%	0%	0%	0%	0%	0%	91%	32%	100%	0%	40%	0%	97%	0%	0%	0%	68%	100%	100%	100%	99%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Gravel or RockE4	15%	66%	28%	100%	0%	7%	0%	39%	4%	5%	4%	4%	3%	3%	4%	4%	1%	33%	16%	86%	3%	27%	2%	40%	0%	0%	0%	15%	23%	58%	76%	58%	56%	0%	0%	0%	0%	7%	16%	38%	59%
Gravel or RockF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	80%	100%	0%	0%	0%	0%	76%	0%	0%	0%
Gravel or RockF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Gravel or RockJ2	9%	35%	10%	100%	0%	6%	0%	50%	24%	26%	33%	24%	23%	35%	38%	38%	2%	57%	17%	74%	1%	16%	0%	19%	0%	0%	0%	67%	84%	100%	92%	91%	100%	1%	2%	1%	2%	8%	18%	8%	36%
Gravel or RockJ3	100%	100%	100%	100%	0%	96%	50%	100%	0%	43%	0%	43%	49%	0%	42%	0%	0%	96%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	58%	99%	35%	6%	99%	0%	0%	0%	0%	29%	0%	0%	0%
Gravel or RockK1	4%	51%	17%	100%	0%	6%	0%	20%	3%	4%	4%	3%	7%	4%	4%	4%	0%	33%	9%	69%	0%	9%	0%	16%	0%	0%	0%	22%	40%	74%	92%	83%	83%	0%	0%	0%	0%	24%	24%	41%	50%
Gravel or RockK2	79%	79%	79%	100%	0%	72%	0%	100%	21%	21%	21%	21%	64%	5%	69%	5%	0%	100%	64%	100%	0%	79%	0%	79%	0%	0%	0%	21%	100%	100%	100%	100%	100%	0%	0%	0%	0%	66%	5%	6%	7%
Gravel or RockK3	0%	6%	0%	90%	0%	44%	3%	62%	27%	34%	34%	28%	0%	0%	0%	0%	0%	34%	2%	100%	8%	14%	9%	59%	0%	0%	0%	45%	53%	100%	100%	100%	100%	0%	0%	0%	0%	9%	22%	25%	24%
Gravel or RockK4	0%	52%	11%	100%	0%	0%	0%	34%	4%	17%	4%	4%	3%	12%	12%	12%	0%	87%	16%	100%	0%	0%	0%	4%	0%	0%	0%	48%	79%	78%	100%	77%	81%	0%	0%	0%	0%	1%	1%	1%	1%
Gravel or RockL1	4%	100%	95%	100%	0%	0%	0%	1%	1%	1%	1%	1%	0%	26%	26%	26%	0%	0%	0%	96%	67%	86%	70%	100%	0%	0%	0%	12%	16%	97%	13%	4%	96%	0%	0%	0%	0%	0%	0%	0%	0%
Gravel or RockM2	0%	100%	16%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	92%	100%	0%	0%	0%	0%	73%	73%	73%	73%
Gravel or RockN1	84%	100%	100%	100%	0%	0%	0%	19%	55%	13%	60%	13%	56%	0%	36%	36%	0%	0%	0%	11%	0%	27%	0%	93%	0%	0%	0%	0%	100%	100%	99%	12%	100%	0%	0%	0%	0%	10%	0%	0%	0%
Gravel or RockN2	1%	61%	10%	100%	0%	24%	4%	35%	6%	7%	7%	7%	3%	6%	9%	9%	0%	55%	4%	99%	10%	44%	1%	66%	0%	0%	0%	84%	96%	100%	95%	94%	100%	0%	0%	0%	0%	8%	11%	13%	14%
Gravel or RockN3	0%	90%	11%	100%	0%	5%	0%	43%	26%	40%	36%	26%	0%	34%	34%	34%	0%	2%	0%	98%	55%	46%	36%	95%	0%	0%	0%	67%	59%	99%	73%	51%	99%	0%	0%	0%	0%	0%	9%	1%	0%
Gravel or RockN4	0%	1%	0%	53%	0%	0%	0%	2%	11%	12%	11%	5%	0%	65%	65%	65%	0%	0%	0%	85%	8%	3%	36%	100%	0%	0%	0%	63%	50%	100%	100%	89%	100%	0%	0%	0%	0%	0%	92%	89%	86%
Gravel or RockN5	0%	0%	0%	46%	0%	0%	0%	0%	46%	46%	46%	46%	0%	46%	46%	46%	0%	0%	0%	54%	0%	0%	100%	100%	0%	0%	0%	46%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	16%	16%	16%
Gravel or RockN6	0%	0%	0%	23%	0%	0%	0%	9%	17%	62%	59%	38%	0%	51%	51%	51%	0%	27%	0%	89%	73%	44%	38%	100%	0%	0%	0%	97%	96%	100%	100%	100%	100%	0%	0%	0%	0%	29%	61%	58%	61%
Gravel or RockNA	21%	69%	31%	98%	0%	12%	1%	50%	2%	5%	3%	3%	20%	9%	20%	11%	1%	51%	22%	82%	2%	37%	2%	51%	0%	0%	0%	31%	54%	86%	92%	74%	84%	0%	0%	0%	0%	5%	2%	4%	7%
Gravel or RockO1	0%	100%	54%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	46%	0%	100%	0%	0%	0%	0%	0%	0%	88%	28%	42%	0%	0%	0%	0%	99%	99%	99%	99%
Gravel or RockO2	0%	100%	5%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	64%	5%	11%	0%	0%	0%	0%	97%	97%	97%	97%
Gravel or RockP1	8%	47%	16%	98%	0%	5%	0%	24%	0%	1%	0%	0%	1%	0%	1%	1%	0%	13%	1%	59%	0%	33%	6%	48%	0%	0%	0%	16%	5%	51%	65%	58%	51%	0%	0%	0%	0%	29%	22%	34%	50%
Gravel or RockP2	1%	29%	2%	100%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%	0%	12%	0%	54%	0%	0%	0%	10%	0%	0%	0%	3%	0%	46%	63%	62%	53%	0%	0%	0%	0%	51%	41%	90%	94%
Gravel or RockP5	2%	67%	8%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	36%	0%	0%	0%	57%	0%	0%	0%	0%	0%	23%	55%	34%	48%	0%	0%	0%	0%	55%	45%	58%	58%
Gravel or RockQ1	0%	3%	0%	97%	0%	5%	0%	42%	1%	5%	1%	1%	0%	0%	0%	0%	0%	15%	0%	67%	11%	8%	13%	72%	0%	0%	0%	24%	0%	100%	100%	100%	99%	0%	0%	0%	0%	8%	62%	38%	36%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Gravel or RockQ2	0%	13%	0%	61%	0%	6%	0%	16%	4%	6%	4%	3%	0%	21%	21%	21%	0%	13%	0%	96%	13%	11%	18%	92%	0%	0%	0%	47%	40%	100%	100%	99%	100%	0%	0%	0%	0%	0%	79%	59%	59%
Gravel or RockR1	1%	54%	6%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	9%	0%	8%	2%	52%	0%	0%	0%	0%	0%	7%	21%	15%	9%	0%	0%	0%	0%	46%	55%	85%	87%
Gravel or RockT1	6%	72%	21%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	20%	0%	12%	6%	90%	0%	0%	0%	0%	0%	2%	11%	5%	3%	0%	0%	0%	0%	18%	26%	28%	29%
Hall's totara-miro-rimu/kamahi-silver beech-southern rata forestF3	81%	100%	81%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	96%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	98%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara-miro-rimu/kamahi-silver beech-southern rata forest_successional/degradedF3	95%	100%	95%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	80%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara-miro/kamahi-southern rata broadleaf forestO1	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	83%	83%	83%	83%
Hall's totara-miro/kamahi-southern rata broadleaf forestO2	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	77%	0%	7%	0%	0%	0%	0%	100%	100%	100%	100%
Hall's totara-miro/kamahi-southern rata broadleaf forestP2	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	62%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%
Hall's totara-miro/kamahi-southern rata broadleaf forestP5	0%	100%	28%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	39%	11%	11%	0%	0%	0%	0%	85%	100%	100%	100%
Hall's totara-miro/kamahi-southern rata broadleaf forestR1	0%	41%	23%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	4%	0%	73%	0%	0%	0%	0%	0%	1%	46%	18%	37%	0%	0%	0%	0%	84%	87%	89%	89%
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedO1	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	97%	100%	100%	100%
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedO2	0%	100%	5%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85%	0%	100%	0%	0%	0%	0%	0%	0%	95%	0%	9%	0%	0%	0%	0%	100%	100%	100%	100%
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedP2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	65%	100%	100%	100%
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedP5	0%	84%	8%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	6%	0%	6%	0%	0%	0%	0%	100%	100%	100%	100%
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedQ1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedQ2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedR1	0%	66%	42%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	1%	0%	72%	0%	0%	0%	0%	0%	1%	44%	25%	36%	0%	0%	0%	0%	60%	62%	82%	82%
Hall's totara/broadleaf forestB3	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	24%	0%	0%	24%
Hall's totara/broadleaf forestE1	29%	71%	40%	99%	0%	11%	4%	48%	3%	5%	4%	3%	3%	5%	5%	5%	0%	30%	6%	85%	0%	62%	16%	67%	0%	0%	0%	20%	78%	96%	100%	99%	99%	0%	0%	0%	0%	62%	15%	20%	25%
Hall's totara/broadleaf forestE3	0%	99%	0%	100%	0%	3%	0%	5%	0%	0%	0%	0%	0%	1%	1%	1%	0%	6%	3%	100%	0%	90%	0%	98%	0%	0%	0%	96%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forestE4	11%	53%	29%	98%	0%	12%	0%	33%	20%	37%	37%	26%	1%	1%	1%	1%	0%	31%	11%	67%	1%	1%	0%	20%	0%	0%	0%	30%	51%	95%	100%	95%	95%	0%	0%	0%	0%	13%	45%	47%	63%
Hall's totara/broadleaf forestF3	74%	100%	92%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	14%	0%	0%	0%	0%	99%	100%	99%	98%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forestJ2	2%	100%	100%	100%	0%	0%	0%	98%	98%	98%	98%	98%	98%	0%	0%	0%	0%	0%	0%	54%	0%	52%	0%	2%	0%	0%	0%	0%	100%	100%	98%	98%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forestK1	17%	68%	29%	100%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	0%	1%	0%	24%	0%	0%	0%	26%	0%	0%	0%	1%	31%	58%	100%	90%	93%	0%	0%	0%	0%	38%	34%	71%	72%
Hall's totara/broadleaf forestK3	0%	63%	0%	100%	0%	4%	0%	95%	33%	33%	33%	33%	0%	0%	0%	0%	0%	30%	0%	100%	0%	66%	0%	67%	0%	0%	0%	63%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forestM2	0%	100%	66%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	93%	100%	0%	0%	0%	0%	89%	89%	89%	89%
Hall's totara/broadleaf forestN1	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Hall's totara/broadleaf forestN2	0%	100%	0%	100%	0%	0%	0%	36%	0%	36%	36%	36%	0%	0%	0%	0%	0%	0%	0%	100%	0%	4%	0%	4%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forestN3	0%	99%	29%	100%	0%	0%	0%	6%	2%	2%	2%	2%	0%	0%	0%	0%	0%	2%	0%	99%	26%	49%	21%	85%	0%	0%	0%	36%	89%	100%	89%	85%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forestNA	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forestO1	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%
Hall's totara/broadleaf forestO2	0%	100%	32%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	0%	100%	0%	0%	0%	0%	0%	0%	97%	32%	80%	0%	0%	0%	0%	90%	90%	90%	90%
Hall's totara/broadleaf forestP1	1%	39%	5%	97%	0%	4%	0%	16%	2%	2%	2%	2%	4%	4%	4%	4%	0%	14%	3%	53%	0%	11%	1%	18%	0%	0%	0%	16%	33%	84%	98%	97%	97%	0%	0%	0%	0%	49%	40%	66%	78%
Hall's totara/broadleaf forestP2	12%	84%	16%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	62%	0%	0%	0%	0%	7%	21%	73%	48%	48%	0%	0%	0%	0%	77%	76%	93%	93%
Hall's totara/broadleaf forestP5	16%	16%	16%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	98%	0%	0%	0%	0%	2%	16%	100%	16%	99%	0%	0%	0%	0%	3%	16%	16%	16%
Hall's totara/broadleaf forestQ1	0%	50%	0%	100%	0%	0%	0%	71%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	97%	4%	78%	20%	78%	0%	0%	0%	75%	73%	100%	100%	100%	100%	0%	0%	0%	0%	18%	18%	16%	18%
Hall's totara/broadleaf forestQ2	0%	92%	12%	100%	0%	2%	1%	29%	0%	1%	0%	0%	0%	4%	4%	4%	0%	24%	1%	100%	15%	79%	28%	95%	0%	0%	0%	62%	98%	100%	98%	94%	100%	0%	0%	0%	0%	0%	1%	1%	1%
Hall's totara/broadleaf forestQ4	0%	100%	0%	100%	0%	0%	0%	85%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	85%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forestR1	1%	54%	16%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%	0%	0%	0%	56%	0%	0%	0%	0%	0%	18%	55%	35%	43%	0%	0%	0%	0%	74%	87%	90%	90%
Hall's totara/broadleaf forest_successional/degradedB3	0%	60%	14%	63%	0%	0%	0%	61%	34%	37%	34%	34%	14%	35%	49%	37%	0%	22%	1%	95%	37%	92%	0%	89%	0%	0%	0%	38%	100%	100%	100%	100%	100%	0%	0%	0%	0%	15%	33%	41%	42%
Hall's totara/broadleaf forest_successional/degradedB8	34%	34%	34%	100%	0%	34%	0%	100%	0%	0%	0%	0%	34%	0%	34%	0%	0%	34%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Hall's totara/broadleaf forest_successional/degradedE1	6%	42%	13%	98%	0%	17%	0%	77%	8%	14%	11%	9%	12%	11%	20%	11%	3%	60%	18%	92%	2%	38%	1%	61%	0%	0%	0%	45%	67%	97%	99%	97%	97%	0%	0%	0%	0%	32%	8%	18%	26%
Hall's totara/broadleaf forest_successional/degradedE3	0%	71%	2%	100%	0%	57%	12%	83%	0%	2%	2%	0%	0%	0%	0%	0%	0%	88%	42%	100%	5%	59%	4%	84%	0%	0%	0%	67%	99%	100%	100%	100%	100%	0%	0%	0%	0%	0%	1%	0%	1%
Hall's totara/broadleaf forest_successional/degradedE4	2%	20%	5%	95%	0%	41%	0%	68%	29%	37%	35%	31%	0%	6%	6%	6%	0%	52%	29%	93%	8%	10%	4%	34%	0%	0%	0%	62%	56%	83%	92%	85%	85%	0%	0%	0%	0%	9%	18%	26%	34%
Hall's totara/broadleaf forest_successional/degradedF3	96%	100%	97%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	77%	0%	0%	0%	27%	0%	0%	0%	0%	98%	100%	94%	91%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forest_successional/degradedJ2	0%	29%	1%	100%	0%	53%	0%	67%	72%	77%	76%	73%	17%	22%	22%	22%	0%	95%	51%	99%	0%	0%	0%	1%	0%	0%	0%	95%	88%	100%	100%	100%	100%	0%	0%	0%	0%	42%	36%	42%	38%
Hall's totara/broadleaf forest_successional/degradedK1	12%	61%	27%	100%	0%	5%	0%	13%	1%	3%	2%	2%	0%	1%	1%	1%	3%	29%	19%	54%	0%	8%	0%	7%	0%	0%	0%	15%	42%	71%	91%	74%	76%	0%	0%	0%	0%	8%	7%	38%	47%
Hall's totara/broadleaf forest_successional/degradedK2	7%	13%	7%	67%	0%	33%	0%	67%	59%	59%	59%	59%	19%	57%	76%	57%	0%	100%	22%	100%	33%	7%	0%	42%	0%	0%	0%	93%	100%	100%	100%	100%	100%	0%	0%	0%	0%	20%	39%	44%	72%
Hall's totara/broadleaf forest_successional/degradedK3	0%	1%	0%	89%	0%	42%	0%	46%	45%	48%	45%	45%	0%	0%	0%	0%	0%	38%	0%	100%	9%	23%	3%	72%	0%	0%	0%	30%	78%	100%	100%	100%	100%	0%	0%	0%	0%	14%	25%	23%	20%
Hall's totara/broadleaf forest_successional/degradedK4	0%	0%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forest_successional/degradedL1	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	100%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forest_successional/degradedM2	0%	100%	92%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	2%	2%	2%	2%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Hall's totara/broadleaf forest_successional/degradedN1	0%	100%	0%	100%	0%	0%	0%	95%	95%	100%	100%	95%	6%	5%	6%	6%	0%	5%	0%	98%	0%	94%	0%	93%	0%	0%	0%	5%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forest_successional/degradedN2	0%	13%	0%	100%	0%	23%	0%	25%	0%	1%	1%	1%	0%	0%	0%	0%	0%	92%	19%	100%	0%	23%	0%	59%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	3%	3%	3%	3%
Hall's totara/broadleaf forest_successional/degradedN3	0%	50%	10%	96%	0%	1%	0%	44%	18%	20%	20%	18%	0%	8%	8%	8%	0%	21%	0%	98%	34%	54%	9%	88%	0%	0%	0%	81%	93%	100%	100%	95%	100%	0%	0%	0%	0%	0%	7%	5%	4%
Hall's totara/broadleaf forest_successional/degradedN4	0%	1%	0%	70%	0%	0%	0%	3%	14%	23%	19%	8%	0%	31%	31%	31%	0%	11%	0%	81%	32%	9%	33%	100%	0%	0%	0%	54%	69%	100%	100%	100%	100%	0%	0%	0%	0%	0%	95%	47%	76%
Hall's totara/broadleaf forest_successional/degradedN5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forest_successional/degradedN6	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	44%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forest_successional/degradedNA	0%	0%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	71%	0%
Hall's totara/broadleaf forest_successional/degradedO1	0%	86%	86%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	89%	48%	89%	0%	0%	0%	0%	85%	85%	85%	85%
Hall's totara/broadleaf forest_successional/degradedO2	0%	100%	74%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	26%	0%	100%	0%	0%	0%	0%	0%	0%	26%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%
Hall's totara/broadleaf forest_successional/degradedP1	3%	32%	6%	100%	0%	44%	1%	76%	17%	25%	20%	19%	0%	4%	4%	4%	1%	53%	10%	89%	0%	19%	0%	50%	0%	0%	0%	39%	39%	90%	95%	91%	91%	0%	0%	0%	0%	21%	22%	32%	35%
Hall's totara/broadleaf forest_successional/degradedP2	5%	34%	18%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	2%	33%	0%	0%	0%	19%	0%	0%	0%	0%	1%	14%	19%	14%	16%	0%	0%	0%	0%	45%	61%	100%	100%
Hall's totara/broadleaf forest_successional/degradedP5	40%	97%	95%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	89%	0%	0%	0%	100%	0%	0%	0%	0%	1%	6%	11%	8%	11%	0%	0%	0%	0%	2%	96%	96%	96%
Hall's totara/broadleaf forest_successional/degradedQ1	0%	14%	0%	96%	0%	9%	0%	41%	10%	19%	13%	7%	0%	2%	2%	2%	0%	28%	0%	96%	23%	26%	36%	72%	0%	0%	0%	39%	15%	100%	100%	100%	100%	0%	0%	0%	0%	13%	52%	36%	42%
Hall's totara/broadleaf forest_successional/degradedQ2	0%	22%	0%	84%	0%	4%	0%	30%	3%	4%	4%	2%	0%	9%	9%	9%	0%	31%	0%	98%	40%	31%	19%	95%	0%	0%	0%	73%	65%	100%	100%	100%	100%	0%	0%	0%	0%	0%	51%	38%	42%
Hall's totara/broadleaf forest_successional/degradedQ4	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/broadleaf forest_successional/degradedR1	15%	86%	64%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	3%	56%	0%	0%	0%	70%	0%	0%	0%	0%	0%	5%	29%	22%	25%	0%	0%	0%	0%	38%	70%	98%	98%
Hall's totara/broadleaf forest_successional/degradedT1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	32%	0%	32%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/silver-beech-kamahi-southern rata forestP2	0%	47%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	84%	0%	0%	0%	77%	0%	0%	0%	0%	0%	0%	13%	1%	3%	0%	0%	0%	0%	91%	25%	99%	99%
Hall's totara/silver-beech-kamahi-southern rata forestP5	0%	23%	5%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%	0%	0%	0%	77%	0%	0%	0%	0%	0%	0%	100%	41%	100%	0%	0%	0%	0%	59%	59%	59%	59%
Hall's totara/silver-beech-kamahi-southern rata forestQ1	0%	15%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	15%	100%	0%	0%	0%	85%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/silver-beech-kamahi-southern rata forestR1	0%	99%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%	64%	0%	0%	0%	83%	0%	0%	0%	0%	0%	1%	28%	14%	22%	0%	0%	0%	0%	85%	59%	100%	100%
Hall's totara/silver-beech-kamahi-southern rata forest_successional/degradedE3	0%	58%	0%	100%	0%	0%	0%	58%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	58%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/silver-beech-kamahi-southern rata forest_successional/degradedP2	0%	47%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	68%	0%	0%	0%	65%	0%	0%	0%	0%	0%	0%	19%	2%	7%	0%	0%	0%	0%	84%	34%	100%	100%
Hall's totara/silver-beech-kamahi-southern rata forest_successional/degradedQ1	0%	36%	0%	100%	0%	0%	0%	73%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	100%	23%	82%	46%	98%	0%	0%	0%	50%	96%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/silver-beech-kamahi-southern rata forest_successional/degradedQ2	0%	8%	0%	100%	0%	0%	0%	46%	0%	0%	0%	0%	0%	0%	0%	0%	0%	47%	0%	100%	7%	42%	37%	92%	0%	0%	0%	59%	98%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Hall's totara/silver-beech-kamahi-southern rata forest_successional/degradedR1	0%	99%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	0%	53%	0%	0%	0%	66%	0%	0%	0%	0%	0%	0%	4%	0%	2%	0%	0%	0%	0%	96%	26%	100%	100%
Herbaceous Freshwater VegetationB3	40%	40%	40%	100%	0%	0%	0%	60%	7%	51%	7%	7%	40%	15%	15%	55%	0%	51%	7%	51%	0%	40%	0%	0%	0%	0%	0%	60%	100%	100%	100%	60%	100%	0%	0%	0%	0%	40%	0%	0%	57%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Herbaceous Freshwater VegetationB8	100%	100%	100%	100%	0%	8%	0%	100%	0%	0%	0%	0%	1%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	92%	100%	0%	0%	100%	0%	0%	0%	0%	58%	0%	0%	0%
Herbaceous Freshwater VegetationB9	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Herbaceous Freshwater VegetationE1	0%	66%	0%	97%	0%	3%	0%	67%	40%	41%	40%	40%	44%	5%	24%	24%	0%	48%	2%	97%	3%	22%	0%	44%	0%	0%	0%	35%	87%	98%	100%	98%	100%	0%	0%	0%	0%	23%	13%	13%	18%
Herbaceous Freshwater VegetationE3	0%	100%	4%	100%	0%	70%	70%	100%	0%	4%	4%	4%	0%	0%	0%	0%	0%	96%	70%	100%	0%	82%	0%	96%	0%	0%	0%	27%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Herbaceous Freshwater VegetationE4	0%	18%	2%	100%	0%	17%	0%	49%	22%	33%	27%	25%	4%	3%	7%	6%	0%	62%	32%	98%	1%	4%	0%	25%	0%	0%	0%	49%	84%	98%	100%	98%	98%	0%	0%	0%	0%	16%	16%	19%	16%
Herbaceous Freshwater VegetationI3	100%	100%	100%	100%	0%	0%	0%	0%	89%	89%	98%	89%	9%	0%	9%	9%	0%	0%	0%	2%	0%	85%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%
Herbaceous Freshwater VegetationI4	100%	100%	100%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Herbaceous Freshwater VegetationJ2	15%	45%	15%	100%	0%	13%	0%	84%	36%	31%	38%	31%	3%	35%	37%	37%	0%	32%	29%	55%	0%	6%	0%	10%	0%	0%	0%	75%	100%	100%	85%	84%	100%	4%	7%	4%	7%	2%	2%	2%	4%
Herbaceous Freshwater VegetationJ3	100%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	13%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	0%	0%	0%	10%	0%	0%	0%
Herbaceous Freshwater VegetationK1	0%	30%	0%	100%	0%	12%	0%	29%	5%	8%	8%	5%	17%	15%	16%	16%	0%	57%	22%	96%	0%	3%	0%	7%	0%	0%	0%	41%	76%	96%	98%	96%	98%	0%	0%	0%	0%	6%	7%	10%	7%
Herbaceous Freshwater VegetationK2	0%	0%	0%	100%	0%	78%	0%	100%	100%	100%	100%	100%	0%	22%	22%	22%	0%	100%	78%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	22%
Herbaceous Freshwater VegetationK3	0%	2%	0%	100%	0%	54%	12%	74%	0%	1%	0%	0%	0%	0%	0%	0%	0%	99%	0%	100%	0%	54%	1%	75%	0%	0%	0%	75%	100%	100%	100%	100%	100%	0%	0%	0%	0%	12%	30%	12%	30%
Herbaceous Freshwater VegetationK4	0%	8%	4%	97%	0%	6%	0%	37%	23%	48%	29%	26%	11%	21%	21%	21%	0%	59%	23%	99%	9%	1%	0%	40%	0%	0%	0%	62%	96%	96%	100%	96%	96%	0%	0%	0%	0%	2%	1%	1%	2%
Herbaceous Freshwater VegetationL1	8%	8%	8%	100%	0%	0%	0%	92%	0%	0%	0%	0%	0%	6%	6%	6%	0%	92%	0%	92%	0%	8%	0%	94%	0%	0%	0%	92%	92%	100%	92%	92%	100%	0%	0%	0%	0%	0%	86%	0%	92%
Herbaceous Freshwater VegetationL2	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Herbaceous Freshwater VegetationN1	62%	62%	62%	62%	0%	0%	0%	0%	4%	4%	4%	4%	3%	0%	0%	0%	0%	0%	0%	38%	38%	97%	0%	97%	0%	0%	0%	38%	89%	89%	35%	34%	89%	58%	60%	58%	60%	0%	0%	0%	0%
Herbaceous Freshwater VegetationN2	0%	67%	1%	100%	0%	26%	1%	74%	1%	2%	2%	2%	2%	1%	1%	1%	0%	92%	23%	96%	1%	41%	1%	69%	0%	0%	0%	44%	78%	99%	100%	99%	99%	0%	0%	0%	0%	2%	4%	2%	2%
Herbaceous Freshwater VegetationN3	16%	68%	31%	100%	0%	13%	0%	28%	44%	49%	49%	44%	0%	27%	27%	27%	0%	13%	0%	82%	48%	40%	23%	87%	0%	0%	0%	64%	40%	88%	40%	30%	88%	0%	0%	0%	0%	0%	0%	0%	0%
Herbaceous Freshwater VegetationN4	0%	18%	0%	50%	0%	0%	0%	0%	22%	22%	22%	22%	0%	45%	45%	45%	0%	0%	0%	83%	22%	4%	50%	100%	0%	0%	0%	56%	78%	100%	78%	78%	100%	0%	0%	0%	0%	0%	7%	0%	7%
Herbaceous Freshwater VegetationN5	0%	0%	0%	72%	0%	0%	0%	0%	21%	49%	21%	21%	0%	48%	48%	48%	0%	0%	0%	52%	0%	0%	43%	100%	0%	0%	0%	100%	52%	96%	75%	52%	96%	0%	0%	0%	0%	0%	6%	6%	6%
Herbaceous Freshwater VegetationN6	0%	0%	0%	65%	0%	0%	0%	16%	21%	39%	21%	20%	0%	54%	54%	54%	0%	0%	0%	69%	7%	0%	40%	86%	0%	0%	0%	24%	75%	99%	99%	79%	100%	0%	0%	0%	0%	15%	35%	35%	35%
Herbaceous Freshwater VegetationN7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	46%	46%	46%	0%	0%	0%	43%	98%	88%	85%	100%	0%	0%	0%	98%	99%	100%	100%	99%	100%	0%	0%	0%	0%	0%	1%	1%	1%
Herbaceous Freshwater VegetationNA	2%	75%	2%	99%	0%	2%	0%	12%	13%	14%	13%	13%	4%	17%	18%	18%	0%	84%	15%	88%	0%	2%	11%	21%	0%	0%	0%	21%	28%	99%	86%	86%	100%	0%	0%	0%	0%	1%	0%	0%	0%
Herbaceous Freshwater VegetationP1	0%	0%	0%	100%	0%	57%	0%	76%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	0%	15%	0%	18%	0%	0%	0%	17%	0%	81%	100%	81%	45%	0%	0%	0%	0%	0%	0%	58%	33%
Herbaceous Freshwater VegetationP5	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Herbaceous Freshwater VegetationQ1	0%	0%	0%	99%	0%	0%	0%	7%	0%	1%	0%	0%	0%	0%	0%	0%	0%	4%	0%	88%	3%	0%	0%	50%	0%	0%	0%	6%	0%	100%	100%	100%	100%	0%	0%	0%	0%	3%	73%	62%	49%
Herbaceous Freshwater VegetationQ2	0%	34%	0%	100%	0%	5%	5%	12%	0%	0%	0%	0%	0%	22%	22%	22%	0%	5%	5%	100%	28%	34%	7%	100%	0%	0%	0%	13%	40%	100%	100%	100%	100%	0%	0%	0%	0%	0%	60%	60%	60%
Herbaceous Saline Vegetation	95%	95%	95%	100%	0%	13%	0%	13%	74%	74%	84%	74%	10%	0%	8%	8%	0%	13%	5%	13%	0%	84%	0%	95%	0%	0%	0%	5%	83%	88%	5%	5%	88%	37%	38%	37%	39%	0%	12%	43%	0%
Indigenous ForestE1	18%	34%	29%	100%	0%	3%	1%	69%	2%	2%	2%	2%	0%	0%	0%	0%	0%	58%	0%	82%	0%	68%	9%	97%	0%	0%	0%	1%	64%	99%	99%	99%	99%	0%	0%	0%	0%	72%	1%	1%	3%
Indigenous ForestE4	0%	23%	2%	100%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	7%	7%	0%	17%	0%	94%	0%	2%	0%	1%	0%	0%	0%	2%	72%	99%	100%	100%	100%	0%	0%	0%	0%	3%	6%	6%	8%
Indigenous ForestK1	0%	9%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16%	0%	94%	0%	0%	0%	1%	0%	0%	0%	0%	71%	99%	100%	100%	100%	0%	0%	0%	0%	22%	13%	25%	25%
Indigenous ForestK4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Indigenous ForestN6	0%	0%	0%	49%	0%	0%	0%	0%	32%	32%	32%	32%	0%	51%	51%	51%	0%	49%	0%	81%	49%	49%	68%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	21%	19%	21%
Indigenous ForestN8	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
Indigenous ForestNA	6%	61%	12%	100%	0%	4%	1%	20%	2%	3%	3%	3%	3%	0%	1%	1%	0%	46%	9%	81%	0%	8%	0%	34%	0%	0%	0%	28%	48%	94%	98%	94%	96%	0%	0%	0%	0%	5%	3%	4%	7%
Indigenous ForestP1	0%	32%	1%	100%	0%	0%	0%	3%	0%	0%	0%	0%	2%	0%	2%	2%	0%	15%	0%	87%	0%	2%	0%	7%	0%	0%	0%	6%	5%	83%	92%	91%	89%	0%	0%	0%	0%	47%	33%	50%	54%
Indigenous ForestP2	5%	80%	6%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	71%	0%	0%	0%	21%	0%	0%	0%	0%	0%	59%	84%	78%	73%	0%	0%	0%	0%	60%	53%	81%	82%
Indigenous ForestP3	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
Indigenous ForestP5	92%	98%	96%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	100%	0%	0%	0%	0%	1%	93%	98%	96%	96%	0%	0%	0%	0%	6%	93%	94%	94%
Indigenous ForestQ2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
Indigenous ForestR1	3%	61%	14%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	12%	0%	9%	4%	68%	0%	0%	0%	0%	0%	10%	53%	38%	36%	0%	0%	0%	0%	60%	78%	91%	91%
Indigenous ForestT1	9%	66%	35%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	31%	0%	0%	0%	68%	0%	0%	0%	0%	3%	59%	94%	78%	86%	0%	0%	0%	0%	14%	15%	18%	18%
Kahikatea-matai/tawa-mahoe forestB3	100%	100%	100%	100%	0%	2%	0%	99%	38%	39%	39%	39%	7%	0%	0%	0%	0%	2%	0%	94%	0%	8%	0%	40%	0%	0%	0%	0%	99%	100%	99%	86%	100%	0%	0%	0%	0%	12%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forestB6	100%	100%	100%	100%	0%	64%	0%	64%	64%	64%	64%	64%	0%	0%	0%	0%	0%	64%	0%	100%	0%	64%	0%	100%	0%	0%	0%	0%	36%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forestB8	100%	100%	100%	100%	0%	100%	0%	100%	0%	30%	0%	30%	36%	0%	36%	0%	0%	100%	0%	100%	0%	100%	44%	100%	0%	0%	0%	0%	23%	91%	0%	0%	89%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forestE1	99%	100%	100%	100%	0%	76%	23%	99%	0%	31%	0%	31%	31%	0%	22%	1%	0%	63%	0%	99%	0%	100%	1%	99%	0%	0%	0%	0%	69%	99%	55%	17%	96%	0%	0%	0%	0%	11%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forestE3	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forestF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	85%	100%	46%	7%	100%	0%	0%	0%	0%	96%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forestF3	92%	100%	95%	100%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	77%	0%	0%	0%	42%	0%	0%	0%	0%	93%	100%	65%	30%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forestJ2	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	89%	0%	0%	0%	28%	0%	0%	0%	0%	92%	100%	2%	0%	100%	1%	1%	1%	2%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forestJ3	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Kahikatea-matai/tawa-mahoe forestK3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forestN1	100%	100%	100%	100%	0%	0%	0%	18%	4%	4%	4%	4%	41%	0%	0%	29%	0%	0%	0%	16%	0%	71%	0%	53%	0%	0%	0%	0%	100%	100%	56%	0%	100%	3%	3%	3%	3%	3%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forestN2	0%	100%	1%	100%	0%	0%	0%	99%	0%	0%	0%	0%	0%	100%	100%	100%	0%	99%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedB3	99%	100%	100%	100%	0%	0%	0%	66%	23%	23%	23%	23%	23%	0%	0%	0%	0%	2%	0%	63%	0%	38%	0%	58%	0%	0%	0%	0%	100%	100%	99%	42%	100%	1%	1%	1%	1%	4%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedB6	100%	100%	100%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedB7	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedB8	100%	100%	100%	100%	0%	100%	0%	100%	2%	12%	2%	12%	74%	0%	74%	0%	0%	100%	0%	100%	0%	100%	3%	100%	0%	0%	0%	0%	62%	100%	2%	0%	97%	0%	0%	0%	0%	5%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedE1	96%	100%	99%	100%	0%	49%	13%	90%	0%	15%	0%	15%	47%	1%	30%	9%	0%	71%	1%	90%	0%	99%	1%	92%	0%	0%	0%	1%	79%	100%	63%	18%	100%	0%	0%	0%	0%	29%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedF2	100%	100%	100%	100%	0%	77%	72%	100%	0%	0%	0%	0%	9%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	79%	3%	100%	0%	0%	0%	0%	69%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedF3	89%	100%	93%	100%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	81%	0%	0%	0%	28%	0%	0%	0%	0%	89%	100%	53%	14%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedJ2	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	31%	0%	0%	0%	0%	100%	100%	20%	0%	100%	11%	12%	11%	12%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedJ3	100%	100%	100%	100%	0%	18%	15%	23%	0%	0%	0%	0%	80%	0%	0%	77%	0%	18%	0%	23%	0%	100%	0%	23%	0%	0%	0%	0%	100%	100%	95%	0%	100%	0%	0%	0%	0%	10%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedK1	0%	18%	1%	100%	0%	2%	0%	2%	0%	0%	0%	0%	38%	38%	38%	38%	0%	56%	46%	63%	0%	2%	0%	2%	0%	0%	0%	40%	89%	100%	100%	100%	100%	0%	0%	0%	0%	8%	8%	10%	10%
Kahikatea-matai/tawa-mahoe forest_successional/degradedK3	0%	63%	0%	100%	0%	37%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	92%	0%	100%	0%	1%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedN1	100%	100%	100%	100%	0%	0%	0%	14%	18%	18%	18%	18%	51%	0%	3%	25%	0%	0%	0%	26%	0%	64%	0%	75%	0%	0%	0%	0%	100%	100%	52%	0%	100%	0%	0%	0%	0%	4%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedN2	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-matai/tawa-mahoe forest_successional/degradedQ2	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forestB3	99%	100%	100%	100%	0%	0%	0%	33%	1%	1%	1%	1%	28%	0%	2%	7%	0%	3%	0%	28%	0%	66%	0%	91%	0%	0%	0%	0%	100%	100%	54%	0%	100%	0%	0%	0%	0%	60%	0%	0%	0%
Kahikatea-pukatea-tawa forestB6	100%	100%	100%	100%	0%	70%	0%	100%	30%	30%	30%	30%	30%	0%	0%	0%	0%	70%	0%	70%	0%	70%	0%	100%	0%	0%	0%	0%	30%	100%	30%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forestB7	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	88%	100%	0%	0%	0%	0%	8%	96%	0%	0%	89%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forestB8	100%	100%	100%	100%	0%	97%	0%	99%	100%	12%	100%	12%	28%	0%	25%	0%	0%	99%	0%	100%	0%	99%	13%	100%	0%	0%	0%	0%	50%	100%	2%	0%	95%	0%	0%	0%	0%	1%	0%	0%	0%
Kahikatea-pukatea-tawa forestB9	100%	100%	100%	100%	0%	100%	0%	100%	32%	32%	32%	32%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	68%	100%	0%	0%	0%	0%	0%	100%	0%	0%	92%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forestE1	100%	100%	100%	100%	0%	20%	0%	79%	0%	0%	0%	0%	91%	0%	18%	20%	0%	79%	0%	79%	0%	99%	0%	80%	0%	0%	0%	0%	100%	100%	38%	1%	100%	1%	1%	1%	1%	47%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Kahikatea-pukatea-tawa forestF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	5%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	17%	100%	0%	0%	100%	0%	0%	0%	0%	97%	0%	0%	0%
Kahikatea-pukatea-tawa forestF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	63%	0%	0%	0%	61%	0%	0%	0%	0%	50%	100%	22%	0%	100%	3%	3%	3%	3%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forestJ2	88%	100%	100%	100%	0%	0%	0%	12%	22%	22%	22%	22%	25%	0%	8%	8%	0%	0%	0%	33%	0%	0%	0%	20%	0%	0%	0%	0%	80%	100%	21%	0%	100%	8%	10%	8%	11%	10%	0%	0%	0%
Kahikatea-pukatea-tawa forestJ3	100%	100%	100%	100%	0%	90%	85%	100%	0%	5%	0%	5%	35%	0%	4%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	64%	100%	0%	0%	99%	0%	0%	0%	0%	47%	0%	0%	0%
Kahikatea-pukatea-tawa forestN1	99%	100%	100%	100%	0%	0%	0%	22%	38%	37%	38%	37%	39%	0%	1%	1%	0%	0%	0%	14%	0%	35%	0%	90%	0%	0%	0%	0%	100%	100%	80%	0%	100%	0%	1%	0%	1%	17%	0%	0%	0%
Kahikatea-pukatea-tawa forestN3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forestNA	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedB3	94%	100%	95%	100%	0%	0%	0%	38%	13%	13%	13%	13%	35%	0%	4%	8%	0%	5%	0%	27%	0%	58%	0%	83%	0%	0%	0%	0%	100%	100%	72%	4%	100%	0%	0%	0%	0%	62%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedB6	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedB7	100%	100%	100%	100%	0%	86%	6%	100%	0%	0%	0%	0%	7%	0%	0%	0%	0%	100%	0%	100%	0%	100%	74%	100%	0%	0%	0%	0%	19%	98%	0%	0%	80%	0%	0%	0%	0%	7%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedB8	100%	100%	100%	100%	0%	98%	0%	100%	5%	8%	5%	8%	61%	0%	59%	0%	0%	100%	0%	100%	0%	100%	2%	100%	0%	0%	0%	0%	73%	99%	14%	3%	97%	0%	0%	0%	0%	4%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedB9	100%	100%	100%	100%	0%	100%	0%	100%	18%	18%	18%	18%	19%	0%	19%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%	56%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedE1	100%	100%	100%	100%	0%	29%	0%	84%	0%	0%	0%	0%	65%	0%	29%	12%	0%	83%	1%	84%	0%	96%	0%	92%	0%	0%	0%	0%	100%	100%	55%	9%	100%	0%	0%	0%	0%	74%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	3%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	45%	100%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedF3	99%	100%	99%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	79%	0%	0%	0%	22%	0%	0%	0%	0%	47%	100%	7%	0%	100%	5%	5%	5%	5%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedI3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedJ2	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	61%	0%	61%	61%	0%	0%	0%	39%	0%	61%	0%	79%	0%	0%	0%	0%	100%	100%	63%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedJ3	100%	100%	100%	100%	0%	58%	39%	95%	0%	5%	0%	5%	55%	0%	16%	5%	0%	85%	0%	95%	0%	100%	0%	95%	0%	0%	0%	0%	78%	99%	22%	0%	99%	0%	0%	0%	0%	41%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedN1	97%	100%	100%	100%	0%	0%	0%	14%	70%	70%	70%	70%	30%	0%	3%	6%	0%	0%	0%	55%	0%	17%	0%	90%	0%	0%	0%	0%	100%	100%	90%	0%	100%	1%	1%	1%	1%	1%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedN3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-pukatea-tawa forest_successional/degradedNA	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-totara forestI3	0%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-totara forestJ2	0%	100%	55%	100%	0%	0%	0%	55%	100%	100%	100%	100%	100%	45%	45%	45%	0%	45%	0%	46%	0%	0%	0%	0%	0%	0%	0%	45%	100%	100%	100%	98%	100%	0%	0%	0%	0%	1%	0%	0%	0%
Kahikatea-totara forestN1	0%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Kahikatea-totara forestN3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	9%	0%	100%	0%	0%	0%	91%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-totara forestNA	0%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-totara forest_successional/degradedB3	0%	100%	1%	100%	0%	0%	0%	100%	99%	99%	99%	99%	29%	0%	29%	29%	0%	0%	0%	71%	0%	99%	0%	42%	0%	0%	0%	0%	100%	100%	100%	99%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-totara forest_successional/degradedE4	0%	7%	0%	99%	0%	0%	0%	0%	0%	7%	7%	0%	100%	100%	100%	100%	0%	99%	14%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	9%	9%	9%	9%
Kahikatea-totara forest_successional/degradedJ2	0%	36%	0%	100%	0%	0%	0%	0%	36%	36%	36%	36%	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-totara forest_successional/degradedN1	0%	100%	12%	100%	0%	0%	0%	99%	100%	100%	100%	100%	14%	1%	2%	2%	0%	1%	0%	87%	0%	86%	0%	86%	0%	0%	0%	1%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kahikatea-totara forest_successional/degradedN2	0%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Kahikatea-totara forest_successional/degradedN3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	16%	26%	0%	100%	0%	0%	0%	90%	100%	100%	100%	90%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Kauri/taraire-kohekohe-tawa forest_successional/degradedF3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	1%	0%	1%	0%	0%	0%	0%
Lake margin wetlands	10%	27%	12%	83%	0%	16%	0%	48%	16%	20%	23%	16%	6%	11%	14%	14%	0%	57%	42%	83%	16%	25%	8%	38%	0%	0%	0%	71%	79%	96%	88%	85%	97%	9%	9%	9%	10%	4%	5%	6%	8%
Lake or Pond	9%	38%	11%	90%	0%	27%	0%	50%	61%	66%	66%	58%	1%	37%	38%	38%	1%	37%	30%	84%	6%	4%	3%	36%	0%	0%	0%	56%	82%	94%	90%	81%	94%	1%	2%	1%	2%	3%	4%	4%	4%
Landslide_successional/degradedB3	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Landslide_successional/degradedE1	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	100%	0%	100%
Landslide_successional/degradedNA	4%	99%	16%	100%	0%	4%	0%	83%	32%	32%	32%	32%	25%	1%	25%	1%	0%	67%	51%	96%	4%	49%	4%	56%	0%	0%	0%	40%	84%	96%	100%	91%	96%	0%	0%	0%	0%	27%	0%	5%	5%
Landslide_successional/degradedP1	0%	0%	0%	100%	0%	0%	0%	62%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	35%	0%	35%	0%	0%	0%	58%	0%	100%	100%	100%	100%	0%	0%	0%	0%	65%	65%	65%	6%
Landslide_successional/degradedQ1	0%	0%	0%	97%	0%	0%	0%	44%	0%	0%	0%	0%	0%	0%	0%	0%	0%	44%	0%	57%	0%	0%	26%	52%	0%	0%	0%	5%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	56%	43%	43%
Landslide_successional/degradedQ2	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Landslide_successional/degradedR1	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%
Manuka and/or Kanuka_successional/degradedB3	0%	90%	14%	100%	0%	0%	0%	100%	48%	53%	48%	48%	14%	10%	10%	24%	0%	10%	10%	100%	0%	90%	0%	52%	0%	0%	0%	10%	100%	100%	100%	86%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Manuka and/or Kanuka_successional/degradedB7	100%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	0%	0%	0%	24%	0%	0%	0%
Manuka and/or Kanuka_successional/degradedB8	6%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	6%	0%	6%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	94%	93%	100%	0%	0%	0%	0%	94%	0%	0%	0%
Manuka and/or Kanuka_successional/degradedE1	73%	96%	91%	100%	0%	71%	2%	95%	1%	1%	1%	0%	90%	0%	88%	3%	0%	95%	87%	100%	0%	93%	0%	94%	0%	0%	0%	4%	99%	100%	100%	96%	100%	0%	0%	0%	0%	73%	1%	3%	3%
Manuka and/or Kanuka_successional/degradedE4	0%	25%	0%	100%	0%	38%	0%	38%	38%	38%	38%	38%	0%	0%	0%	0%	0%	44%	0%	100%	0%	0%	0%	38%	0%	0%	0%	29%	85%	100%	100%	100%	100%	0%	0%	0%	0%	39%	1%	39%	1%
Manuka and/or Kanuka_successional/degradedF1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Manuka and/or Kanuka_successional/degradedF3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	33%	100%	0%	0%	100%	24%	25%	24%	26%	0%	0%	0%	0%
Manuka and/or Kanuka_successional/degradedJ2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Manuka and/or Kanuka_successional/degradedJ3	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	8%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Manuka and/or Kanuka_successional/degradedK1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	33%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Manuka and/or Kanuka_successional/degradedK4	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Manuka and/or Kanuka_successional/degradedNA	47%	87%	51%	100%	0%	39%	9%	62%	4%	13%	4%	8%	41%	0%	30%	6%	0%	65%	7%	94%	0%	59%	0%	59%	0%	0%	0%	26%	92%	99%	88%	64%	100%	0%	0%	0%	0%	8%	1%	3%	4%
Manuka and/or Kanuka_successional/degradedP1	0%	99%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	18%	0%	0%	0%	0%	78%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Manuka and/or Kanuka_successional/degradedQ1	0%	0%	0%	92%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	3%	3%	0%	0%	0%	100%	3%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	94%	42%	94%
Manuka and/or Kanuka_successional/degradedQ2	0%	0%	0%	61%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	46%	0%	100%	0%	0%	39%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	90%	64%	64%
Manuka and/or Kanuka_successional/degradedT1	0%	94%	60%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	0%	0%	0%	100%	0%	0%	0%	0%	31%	34%	97%	91%	97%	0%	0%	0%	0%	10%	34%	34%	34%
Matagouri or Grey Scrub_successional/degradedB8	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	77%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	77%	77%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matagouri or Grey Scrub_successional/degradedE1	57%	87%	64%	100%	0%	61%	0%	86%	7%	16%	16%	11%	74%	0%	74%	0%	4%	87%	64%	95%	0%	74%	0%	76%	0%	0%	0%	7%	100%	100%	100%	100%	100%	0%	0%	0%	0%	48%	4%	1%	1%
Matagouri or Grey Scrub_successional/degradedE3	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matagouri or Grey Scrub_successional/degradedE4	10%	27%	15%	100%	0%	46%	0%	82%	53%	53%	53%	53%	0%	9%	9%	9%	0%	75%	17%	100%	0%	2%	0%	19%	0%	0%	0%	68%	84%	90%	100%	94%	94%	0%	0%	0%	0%	1%	2%	3%	8%
Matagouri or Grey Scrub_successional/degradedJ2	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matagouri or Grey Scrub_successional/degradedK1	24%	78%	35%	100%	0%	0%	0%	26%	0%	0%	0%	0%	0%	0%	0%	0%	0%	86%	26%	87%	0%	2%	0%	0%	0%	0%	0%	23%	56%	76%	84%	76%	76%	0%	0%	0%	0%	13%	9%	10%	30%
Matagouri or Grey Scrub_successional/degradedK2	100%	100%	100%	100%	0%	80%	0%	100%	0%	0%	0%	0%	80%	0%	80%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	87%	0%	0%	0%
Matagouri or Grey Scrub_successional/degradedK3	0%	1%	0%	72%	0%	0%	0%	35%	1%	1%	1%	1%	0%	0%	0%	0%	0%	35%	0%	100%	28%	29%	0%	100%	0%	0%	0%	63%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	34%	0%	34%
Matagouri or Grey Scrub_successional/degradedM2	0%	100%	92%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matagouri or Grey Scrub_successional/degradedN2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matagouri or Grey Scrub_successional/degradedN3	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matagouri or Grey Scrub_successional/degradedN4	0%	0%	0%	100%	0%	0%	0%	0%	80%	80%	80%	0%	0%	70%	70%	70%	0%	0%	0%	30%	0%	0%	0%	100%	0%	0%	0%	80%	80%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
Matagouri or Grey Scrub_successional/degradedNA	7%	56%	23%	99%	0%	8%	0%	38%	9%	14%	13%	11%	9%	16%	18%	18%	4%	51%	17%	86%	0%	4%	0%	13%	0%	0%	0%	36%	61%	87%	92%	86%	87%	0%	0%	0%	0%	5%	5%	4%	13%
Matagouri or Grey Scrub_successional/degradedP1	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	0%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Matagouri or Grey Scrub_successional/degradedQ1	0%	1%	0%	81%	0%	0%	0%	8%	1%	1%	1%	1%	0%	6%	6%	6%	0%	43%	0%	99%	1%	0%	5%	65%	0%	0%	0%	8%	0%	100%	100%	100%	100%	0%	0%	0%	0%	3%	87%	34%	47%
Matagouri or Grey Scrub_successional/degradedQ2	0%	0%	0%	92%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	100%	0%	0%	3%	51%	0%	0%	0%	5%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	87%	76%	75%
Matagouri or Grey Scrub_successional/degradedT1	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%
Matai-kahikatea-totara forestB3	9%	100%	23%	100%	0%	0%	0%	85%	10%	21%	21%	10%	50%	44%	46%	46%	0%	54%	0%	99%	0%	51%	0%	45%	0%	0%	0%	44%	99%	100%	100%	89%	100%	0%	0%	0%	0%	22%	0%	0%	10%
Matai-kahikatea-totara forestB6	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forestB8	60%	100%	60%	100%	0%	60%	0%	60%	0%	40%	40%	0%	59%	35%	59%	35%	0%	100%	0%	100%	0%	60%	0%	60%	0%	0%	0%	40%	52%	100%	52%	52%	100%	0%	0%	0%	0%	16%	0%	0%	0%
Matai-kahikatea-totara forestE1	55%	94%	77%	100%	0%	16%	2%	84%	0%	2%	1%	1%	34%	7%	21%	10%	0%	67%	1%	91%	0%	86%	1%	87%	0%	0%	0%	14%	100%	100%	89%	63%	100%	0%	0%	0%	0%	36%	0%	0%	6%
Matai-kahikatea-totara forestE3	0%	100%	48%	100%	0%	0%	0%	13%	3%	3%	4%	3%	0%	0%	0%	0%	0%	6%	0%	61%	0%	92%	0%	96%	0%	0%	0%	82%	100%	100%	100%	62%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forestE4	0%	43%	30%	100%	0%	0%	0%	43%	7%	7%	7%	7%	93%	64%	93%	93%	0%	68%	1%	98%	0%	0%	0%	30%	0%	0%	0%	93%	100%	100%	100%	100%	100%	0%	0%	0%	0%	59%	3%	2%	2%
Matai-kahikatea-totara forestF3	97%	100%	97%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	96%	0%	0%	0%	57%	0%	0%	0%	0%	89%	100%	65%	18%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forestJ2	72%	100%	81%	100%	0%	18%	0%	31%	23%	41%	45%	41%	36%	11%	14%	14%	0%	13%	0%	84%	0%	18%	0%	30%	0%	0%	0%	13%	98%	100%	50%	14%	100%	0%	0%	0%	0%	8%	0%	0%	0%
Matai-kahikatea-totara forestJ3	100%	100%	100%	100%	0%	76%	74%	100%	0%	0%	0%	0%	10%	0%	0%	0%	0%	93%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	92%	100%	28%	0%	100%	0%	0%	0%	0%	52%	0%	0%	0%
Matai-kahikatea-totara forestK1	0%	0%	0%	56%	0%	0%	0%	0%	0%	0%	0%	0%	69%	69%	69%	69%	0%	37%	0%	82%	0%	0%	0%	0%	0%	0%	0%	0%	69%	97%	100%	100%	100%	0%	0%	0%	0%	31%	31%	31%	31%
Matai-kahikatea-totara forestK3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	42%	0%	100%	0%	0%	0%	75%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forestL1	3%	100%	73%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	34%	21%	100%	0%	100%	0%	0%	0%	46%	83%	97%	80%	34%	97%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forestN1	96%	100%	100%	100%	0%	0%	0%	32%	16%	16%	22%	16%	43%	0%	8%	26%	0%	0%	0%	20%	0%	47%	0%	32%	0%	0%	0%	0%	100%	100%	98%	2%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forestN2	14%	100%	56%	100%	0%	12%	0%	82%	21%	32%	28%	29%	42%	6%	29%	29%	0%	36%	2%	96%	3%	50%	4%	72%	0%	0%	0%	58%	95%	99%	95%	81%	98%	0%	0%	0%	0%	1%	0%	0%	0%
Matai-kahikatea-totara forestN3	10%	100%	70%	100%	0%	0%	0%	2%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%	68%	24%	83%	35%	100%	0%	0%	0%	12%	63%	98%	57%	31%	83%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forestNA	49%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	6%	6%	0%	0%	0%	51%	50%	94%	43%	94%	0%	0%	0%	0%	6%	57%	6%	0%	57%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forestQ2	8%	100%	43%	100%	0%	0%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	99%	21%	72%	40%	100%	0%	0%	0%	30%	73%	100%	70%	60%	98%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forestQ4	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedB3	12%	86%	64%	100%	0%	13%	0%	78%	14%	16%	15%	14%	75%	24%	77%	29%	0%	77%	31%	95%	0%	70%	0%	65%	0%	0%	0%	26%	100%	100%	100%	96%	100%	0%	0%	0%	0%	35%	0%	1%	4%
Matai-kahikatea-totara forest_successional/degradedB8	81%	100%	100%	100%	0%	81%	0%	100%	0%	0%	0%	0%	81%	0%	81%	0%	0%	100%	37%	100%	0%	100%	0%	100%	0%	0%	0%	0%	98%	100%	98%	98%	100%	0%	0%	0%	0%	60%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedB9	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	62%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedE1	58%	78%	70%	98%	0%	40%	0%	91%	2%	12%	7%	2%	50%	17%	58%	18%	0%	73%	7%	86%	0%	74%	0%	74%	0%	0%	0%	26%	100%	100%	97%	85%	100%	0%	0%	0%	0%	46%	4%	4%	20%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Matai-kahikatea-totara forest_successional/degradedE3	0%	83%	48%	100%	0%	0%	0%	59%	10%	32%	32%	25%	0%	0%	0%	0%	0%	28%	7%	85%	0%	49%	0%	85%	0%	0%	0%	58%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedE4	0%	49%	1%	100%	0%	0%	0%	75%	14%	31%	31%	14%	29%	46%	46%	46%	0%	94%	41%	96%	0%	0%	0%	18%	0%	0%	0%	91%	99%	100%	100%	100%	100%	0%	0%	0%	0%	9%	5%	5%	16%
Matai-kahikatea-totara forest_successional/degradedF2	100%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	70%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedF3	99%	100%	99%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	98%	0%	0%	0%	27%	0%	0%	0%	0%	78%	100%	38%	8%	100%	1%	1%	1%	1%	0%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedI3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	88%	100%	88%	100%	0%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedJ2	1%	77%	7%	100%	0%	1%	0%	40%	57%	60%	59%	57%	75%	81%	87%	87%	0%	80%	4%	80%	0%	1%	0%	1%	0%	0%	0%	93%	99%	100%	99%	93%	100%	0%	0%	0%	0%	9%	8%	8%	19%
Matai-kahikatea-totara forest_successional/degradedJ3	100%	100%	100%	100%	0%	56%	39%	99%	0%	0%	0%	0%	18%	0%	0%	0%	0%	97%	0%	99%	0%	100%	0%	99%	0%	0%	0%	0%	100%	100%	46%	0%	100%	0%	0%	0%	0%	29%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedK1	0%	12%	0%	83%	0%	1%	0%	8%	1%	1%	1%	1%	46%	47%	47%	47%	0%	74%	33%	97%	0%	1%	0%	6%	0%	0%	0%	61%	95%	100%	100%	100%	100%	0%	0%	0%	0%	27%	27%	28%	28%
Matai-kahikatea-totara forest_successional/degradedK2	99%	100%	99%	100%	0%	36%	0%	99%	0%	1%	1%	0%	46%	1%	46%	1%	0%	100%	32%	100%	0%	99%	0%	99%	0%	0%	0%	1%	100%	100%	100%	100%	100%	0%	0%	0%	0%	84%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedK3	0%	43%	0%	100%	0%	52%	0%	98%	0%	0%	0%	0%	0%	29%	29%	29%	0%	98%	0%	100%	0%	10%	0%	95%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	2%
Matai-kahikatea-totara forest_successional/degradedL1	0%	100%	81%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	99%	100%	57%	100%	0%	0%	0%	0%	25%	100%	13%	13%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedN1	63%	100%	81%	100%	0%	0%	0%	44%	49%	25%	52%	22%	77%	19%	58%	58%	0%	19%	0%	20%	0%	22%	0%	51%	0%	0%	0%	19%	100%	100%	97%	19%	100%	0%	0%	0%	0%	2%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedN2	4%	82%	27%	100%	0%	1%	0%	24%	10%	16%	16%	16%	17%	61%	61%	61%	0%	40%	14%	94%	49%	57%	42%	68%	0%	0%	0%	46%	92%	100%	83%	68%	100%	0%	0%	0%	0%	5%	5%	5%	5%
Matai-kahikatea-totara forest_successional/degradedN3	11%	98%	50%	100%	0%	0%	0%	14%	11%	24%	24%	11%	0%	34%	34%	34%	0%	0%	0%	83%	52%	87%	47%	100%	0%	0%	0%	34%	68%	100%	61%	40%	99%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedN4	0%	90%	0%	100%	0%	0%	0%	30%	43%	50%	50%	43%	0%	50%	50%	50%	0%	0%	0%	70%	100%	98%	82%	100%	0%	0%	0%	100%	90%	100%	90%	70%	100%	0%	0%	0%	0%	0%	9%	0%	0%
Matai-kahikatea-totara forest_successional/degradedNA	0%	66%	0%	94%	0%	0%	0%	0%	19%	85%	85%	0%	75%	100%	100%	100%	0%	75%	0%	75%	0%	0%	0%	25%	0%	0%	0%	100%	83%	100%	89%	83%	100%	0%	0%	0%	0%	2%	16%	16%	13%
Matai-kahikatea-totara forest_successional/degradedQ2	0%	90%	3%	100%	0%	3%	0%	19%	15%	25%	25%	15%	0%	31%	31%	31%	0%	4%	0%	99%	79%	91%	57%	100%	0%	0%	0%	72%	98%	100%	98%	79%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-kahikatea-totara forest_successional/degradedQ4	0%	82%	82%	100%	0%	0%	0%	18%	18%	18%	18%	18%	0%	0%	0%	0%	0%	0%	0%	18%	18%	100%	0%	100%	0%	0%	0%	18%	100%	100%	100%	20%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestB3	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestB8	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	0%	100%	100%	0%	100%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	62%	0%	0%	62%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestE1	37%	81%	58%	100%	0%	33%	32%	41%	0%	0%	0%	0%	2%	1%	1%	1%	0%	7%	2%	82%	0%	46%	0%	48%	0%	0%	0%	2%	82%	96%	99%	97%	100%	0%	0%	0%	0%	71%	11%	32%	33%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestE3	0%	100%	3%	100%	0%	0%	0%	72%	0%	0%	0%	0%	0%	49%	49%	49%	0%	49%	0%	98%	0%	50%	0%	100%	0%	0%	0%	99%	100%	100%	100%	98%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestE4	0%	52%	0%	100%	0%	0%	0%	3%	0%	22%	17%	14%	2%	2%	2%	2%	0%	27%	4%	90%	0%	0%	0%	0%	0%	0%	0%	4%	48%	99%	100%	99%	100%	0%	0%	0%	0%	8%	25%	30%	53%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestF3	86%	100%	91%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	94%	0%	0%	0%	25%	0%	0%	0%	0%	99%	100%	93%	77%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestK1	0%	19%	1%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	66%	99%	100%	100%	100%	0%	0%	0%	0%	48%	43%	55%	55%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestK3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	72%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestL1	92%	100%	92%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	84%	0%	77%	77%	100%	0%	0%	0%	8%	8%	84%	8%	8%	84%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestN1	100%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestN2	0%	100%	1%	100%	0%	0%	0%	2%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%	100%	0%	94%	0%	100%	0%	0%	0%	9%	100%	100%	100%	93%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestN3	4%	100%	77%	100%	0%	0%	0%	1%	0%	0%	0%	0%	0%	4%	4%	4%	0%	1%	0%	84%	37%	93%	31%	100%	0%	0%	0%	24%	77%	100%	74%	48%	99%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestO1	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	94%	94%	94%	94%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestP1	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestP5	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestQ2	9%	100%	61%	100%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	53%	92%	84%	100%	0%	0%	0%	9%	61%	100%	59%	35%	96%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestQ4	0%	100%	80%	100%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	80%	80%	0%	100%	0%	0%	0%	4%	98%	100%	93%	45%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedB8	100%	100%	100%	100%	0%	100%	0%	100%	18%	95%	18%	95%	82%	0%	82%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	99%	0%	0%	99%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedE1	9%	51%	25%	100%	0%	14%	6%	58%	1%	2%	1%	1%	20%	2%	21%	2%	0%	59%	14%	86%	0%	55%	0%	55%	0%	0%	0%	4%	86%	96%	100%	100%	100%	0%	0%	0%	0%	70%	9%	49%	28%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedE3	0%	99%	27%	100%	0%	0%	0%	44%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	100%	0%	94%	0%	100%	0%	0%	0%	75%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedE4	0%	39%	1%	100%	0%	7%	0%	43%	4%	16%	9%	5%	1%	0%	1%	0%	0%	68%	39%	82%	0%	2%	1%	1%	0%	0%	0%	40%	78%	93%	100%	90%	95%	0%	0%	0%	0%	6%	10%	20%	28%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedF3	95%	100%	96%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	92%	0%	0%	0%	9%	0%	0%	0%	0%	98%	100%	82%	58%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedJ3	100%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedK1	0%	23%	1%	100%	0%	0%	0%	0%	0%	0%	0%	0%	28%	28%	28%	28%	0%	74%	34%	84%	0%	0%	0%	0%	0%	0%	0%	28%	93%	99%	100%	100%	100%	0%	0%	0%	0%	15%	2%	9%	19%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedK3	0%	2%	0%	100%	0%	98%	0%	98%	0%	0%	0%	0%	0%	0%	0%	0%	0%	98%	0%	100%	0%	2%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedL1	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	67%	0%	0%	67%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedN2	0%	61%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	61%	100%	0%	0%	0%	0%	0%	0%	0%	39%	99%	100%	100%	100%	100%	0%	0%	0%	0%	17%	25%	17%	17%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedN3	1%	100%	61%	100%	0%	0%	0%	13%	9%	11%	11%	8%	0%	10%	10%	10%	0%	0%	0%	96%	65%	90%	31%	100%	0%	0%	0%	18%	90%	100%	88%	62%	98%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedP1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	100%	100%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedQ2	0%	96%	3%	100%	0%	4%	0%	12%	4%	10%	10%	4%	0%	10%	10%	10%	0%	4%	0%	99%	76%	96%	66%	100%	0%	0%	0%	61%	97%	100%	96%	82%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedQ4	0%	99%	87%	100%	0%	0%	0%	13%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	98%	86%	88%	0%	100%	0%	0%	0%	13%	98%	100%	99%	24%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara/black/mountain beech forestB3	71%	100%	99%	100%	0%	5%	0%	66%	13%	16%	14%	16%	27%	0%	4%	12%	0%	10%	0%	73%	0%	69%	0%	60%	0%	0%	0%	0%	100%	100%	99%	53%	100%	0%	0%	0%	0%	23%	0%	0%	3%
Matai-totara/black/mountain beech forestB8	100%	100%	100%	100%	0%	100%	0%	100%	52%	87%	52%	87%	45%	0%	45%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	32%	93%	4%	2%	81%	0%	0%	0%	0%	2%	0%	0%	0%
Matai-totara/black/mountain beech forestE1	95%	99%	99%	100%	0%	40%	18%	82%	0%	1%	0%	1%	25%	0%	11%	13%	0%	38%	0%	87%	0%	93%	0%	97%	0%	0%	0%	0%	97%	100%	88%	39%	100%	0%	0%	0%	0%	40%	0%	0%	2%
Matai-totara/black/mountain beech forestE3	1%	100%	88%	100%	0%	7%	0%	98%	1%	6%	6%	6%	22%	0%	0%	0%	0%	25%	0%	97%	0%	44%	0%	79%	0%	0%	0%	53%	100%	100%	100%	98%	100%	0%	0%	0%	0%	1%	0%	0%	0%
Matai-totara/black/mountain beech forestE4	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%
Matai-totara/black/mountain beech forestF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	1%	0%	0%	0%	0%	40%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	98%	100%	77%	28%	100%	0%	0%	0%	0%	88%	0%	0%	0%
Matai-totara/black/mountain beech forestF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	37%	0%	0%	0%	3%	0%	0%	0%	0%	100%	100%	97%	95%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara/black/mountain beech forestJ2	44%	100%	100%	100%	0%	0%	0%	56%	99%	99%	99%	99%	55%	0%	0%	0%	0%	0%	0%	89%	0%	45%	0%	51%	0%	0%	0%	0%	100%	100%	100%	45%	100%	28%	34%	28%	36%	45%	0%	0%	0%
Matai-totara/black/mountain beech forestJ3	100%	100%	100%	100%	0%	52%	52%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	71%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	97%	100%	91%	0%	100%	0%	0%	0%	0%	6%	0%	0%	0%
Matai-totara/black/mountain beech forestK1	0%	82%	82%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	82%	0%	0%	0%	84%	0%	0%	0%	0%	0%	0%	100%	81%	100%	0%	0%	0%	0%	28%	94%	94%	94%
Matai-totara/black/mountain beech forestN1	91%	100%	100%	100%	0%	0%	0%	49%	31%	31%	32%	31%	35%	0%	5%	8%	0%	0%	0%	29%	0%	46%	0%	43%	0%	0%	0%	0%	100%	100%	98%	15%	100%	0%	0%	0%	0%	8%	0%	0%	0%
Matai-totara/black/mountain beech forestN2	69%	100%	85%	100%	0%	13%	0%	100%	5%	28%	13%	13%	14%	0%	0%	0%	0%	21%	0%	100%	0%	89%	0%	100%	0%	0%	0%	1%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara/black/mountain beech forestN3	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara/black/mountain beech forestNA	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara/black/mountain beech forestP1	0%	30%	28%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	15%	0%	0%	0%	0%	0%	2%	80%	42%	64%	0%	0%	0%	0%	18%	26%	87%	87%
Matai-totara/black/mountain beech forestP2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	38%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	25%	25%	0%	0%	0%	0%	10%	0%	100%	100%
Matai-totara/black/mountain beech forestP5	0%	98%	98%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	98%	0%	0%	0%	78%	0%	0%	0%	0%	0%	0%	41%	18%	41%	0%	0%	0%	0%	11%	86%	86%	86%
Matai-totara/black/mountain beech forestR1	0%	90%	14%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85%	0%	0%	0%	1%	0%	0%	0%	0%	0%	1%	77%	73%	77%	0%	0%	0%	0%	67%	75%	78%	78%
Matai-totara/black/mountain beech forest_successional/degradedB3	48%	100%	96%	100%	0%	4%	0%	75%	20%	20%	22%	19%	52%	0%	8%	29%	0%	8%	0%	59%	0%	58%	0%	57%	0%	0%	0%	0%	100%	100%	99%	42%	100%	0%	0%	0%	0%	43%	0%	0%	9%
Matai-totara/black/mountain beech forest_successional/degradedB7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara/black/mountain beech forest_successional/degradedB8	98%	100%	100%	100%	0%	100%	0%	100%	27%	52%	27%	52%	64%	0%	64%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	65%	99%	30%	5%	94%	0%	0%	0%	0%	7%	0%	0%	0%
Matai-totara/black/mountain beech forest_successional/degradedE1	92%	100%	99%	100%	0%	55%	11%	91%	0%	3%	0%	3%	50%	0%	35%	11%	0%	59%	3%	92%	0%	96%	0%	95%	0%	0%	0%	0%	98%	100%	85%	34%	100%	0%	0%	0%	0%	35%	0%	0%	2%
Matai-totara/black/mountain beech forest_successional/degradedE3	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	2%	0%	2%	2%	0%	7%	0%	100%	0%	1%	0%	87%	0%	0%	0%	84%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Matai-totara/black/mountain beech forest_successional/degradedE4	0%	0%	0%	100%	0%	46%	0%	85%	46%	46%	46%	46%	0%	0%	0%	0%	0%	85%	85%	88%	0%	0%	0%	0%	0%	0%	0%	100%	95%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	4%	14%
Matai-totara/black/mountain beech forest_successional/degradedF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	10%	0%	0%	0%	0%	59%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	98%	100%	80%	44%	100%	0%	0%	0%	0%	53%	0%	0%	0%
Matai-totara/black/mountain beech forest_successional/degradedF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	20%	0%	0%	0%	0%	75%	100%	33%	33%	100%	1%	2%	1%	2%	0%	0%	0%	0%
Matai-totara/black/mountain beech forest_successional/degradedI4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara/black/mountain beech forest_successional/degradedJ2	38%	100%	100%	100%	0%	0%	0%	100%	54%	54%	54%	54%	89%	0%	45%	45%	0%	0%	0%	49%	0%	94%	0%	10%	0%	0%	0%	0%	100%	100%	100%	49%	100%	0%	0%	0%	0%	41%	0%	0%	0%
Matai-totara/black/mountain beech forest_successional/degradedJ3	100%	100%	100%	100%	0%	44%	37%	100%	0%	7%	0%	7%	7%	0%	7%	0%	0%	88%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	93%	96%	93%	0%	93%	0%	0%	0%	0%	8%	0%	0%	0%
Matai-totara/black/mountain beech forest_successional/degradedK1	0%	41%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	41%	0%	41%	0%	0%	0%	59%	0%	0%	0%	0%	0%	41%	100%	94%	100%	0%	0%	0%	0%	59%	59%	59%	59%
Matai-totara/black/mountain beech forest_successional/degradedN1	69%	100%	82%	100%	0%	0%	0%	75%	26%	26%	26%	26%	23%	0%	3%	12%	0%	0%	0%	39%	0%	78%	0%	20%	0%	0%	0%	0%	100%	100%	100%	16%	100%	0%	0%	0%	0%	14%	0%	0%	0%
Matai-totara/black/mountain beech forest_successional/degradedN2	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara/black/mountain beech forest_successional/degradedNA	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Matai-totara/black/mountain beech forest_successional/degradedP1	0%	2%	2%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	99%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	34%	4%	4%	0%	0%	0%	0%	34%	36%	100%	100%
Matai-totara/black/mountain beech forest_successional/degradedP2	0%	5%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	5%	100%	0%	0%	0%	0%	34%	22%	100%	100%
Matai-totara/black/mountain beech forest_successional/degradedP5	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%
Matai-totara/black/mountain beech forest_successional/degradedR1	0%	98%	41%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	54%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	44%	44%	44%	0%	0%	0%	0%	57%	71%	85%	85%
Mountain beech forestB3	14%	100%	52%	100%	0%	0%	0%	91%	12%	12%	12%	12%	9%	0%	3%	5%	0%	10%	0%	91%	0%	89%	0%	72%	0%	0%	0%	1%	100%	100%	100%	98%	100%	0%	0%	0%	0%	35%	0%	0%	28%
Mountain beech forestE1	5%	92%	20%	100%	0%	9%	1%	86%	9%	17%	14%	14%	22%	0%	9%	9%	0%	73%	9%	99%	0%	55%	0%	80%	0%	0%	0%	54%	84%	99%	100%	99%	99%	0%	0%	0%	0%	52%	1%	2%	8%
Mountain beech forestE3	0%	100%	60%	100%	0%	33%	0%	100%	0%	0%	0%	0%	14%	0%	14%	14%	0%	15%	1%	100%	0%	43%	0%	96%	0%	0%	0%	77%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Mountain beech forestE4	0%	47%	2%	100%	0%	0%	0%	53%	0%	0%	0%	0%	17%	0%	16%	16%	0%	73%	20%	91%	0%	0%	0%	3%	0%	0%	0%	74%	37%	90%	100%	93%	98%	0%	0%	0%	0%	30%	23%	29%	32%
Mountain beech forestF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	92%	100%	0%	0%	0%	0%	27%	0%	0%	0%
Mountain beech forestF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	65%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Mountain beech forestJ2	10%	100%	91%	100%	0%	1%	0%	100%	70%	81%	81%	81%	95%	0%	0%	0%	0%	0%	0%	95%	0%	72%	0%	23%	0%	0%	0%	18%	100%	100%	100%	88%	100%	0%	0%	0%	0%	30%	0%	0%	0%
Mountain beech forestK1	3%	72%	10%	100%	0%	1%	0%	21%	0%	5%	5%	5%	0%	0%	0%	0%	0%	26%	2%	84%	0%	7%	0%	31%	0%	0%	0%	15%	45%	74%	99%	75%	76%	0%	0%	0%	0%	36%	9%	34%	38%
Mountain beech forestN1	0%	100%	55%	100%	0%	0%	0%	89%	89%	89%	89%	89%	69%	0%	11%	11%	0%	0%	0%	72%	0%	58%	0%	36%	0%	0%	0%	14%	100%	100%	100%	89%	100%	0%	0%	0%	0%	43%	0%	0%	0%
Mountain beech forestN2	0%	100%	86%	100%	0%	0%	0%	100%	7%	32%	32%	32%	26%	0%	2%	2%	0%	53%	0%	100%	0%	12%	0%	93%	0%	0%	0%	69%	100%	100%	100%	100%	100%	0%	0%	0%	0%	7%	0%	0%	0%
Mountain beech forestP1	1%	38%	8%	100%	0%	1%	0%	18%	2%	2%	2%	2%	2%	0%	1%	1%	0%	32%	2%	77%	0%	7%	0%	29%	0%	0%	0%	47%	14%	74%	92%	86%	86%	0%	0%	0%	0%	42%	25%	37%	38%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Mountain beech forestP2	0%	65%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	57%	0%	85%	0%	0%	0%	0%	0%	0%	0%	2%	0%	65%	97%	83%	57%	0%	0%	0%	0%	71%	20%	46%	95%
Mountain beech forestP5	86%	100%	93%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	86%	0%	98%	0%	0%	0%	95%	0%	0%	0%	0%	0%	85%	92%	85%	86%	0%	0%	0%	0%	75%	58%	75%	75%
Mountain beech forestQ1	0%	2%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	49%	0%	49%	0%	0%	0%	0%	0%	0%	0%	46%	0%	99%	100%	100%	100%	0%	0%	0%	0%	27%	36%	36%	36%
Mountain beech forestQ2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Mountain beech forestR1	0%	66%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	53%	0%	0%	0%	37%	0%	0%	0%	0%	0%	19%	85%	51%	77%	0%	0%	0%	0%	34%	41%	42%	42%
Mountain beech forest_successional/degradedB3	3%	99%	54%	100%	0%	2%	0%	93%	36%	37%	36%	33%	22%	0%	6%	8%	0%	16%	0%	80%	0%	73%	0%	45%	0%	0%	0%	3%	100%	100%	100%	93%	100%	0%	0%	0%	0%	28%	0%	0%	13%
Mountain beech forest_successional/degradedB8	88%	88%	88%	100%	0%	88%	0%	100%	0%	0%	0%	0%	88%	0%	88%	0%	0%	88%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Mountain beech forest_successional/degradedE1	8%	80%	19%	100%	0%	7%	2%	73%	20%	25%	23%	21%	21%	0%	8%	8%	0%	54%	4%	98%	0%	54%	0%	64%	0%	0%	0%	47%	91%	99%	100%	99%	100%	0%	0%	0%	0%	52%	3%	6%	11%
Mountain beech forest_successional/degradedE3	0%	99%	9%	100%	0%	10%	0%	100%	3%	3%	3%	3%	3%	0%	3%	3%	0%	54%	0%	100%	0%	49%	0%	99%	0%	0%	0%	95%	99%	100%	100%	100%	100%	0%	0%	0%	0%	10%	0%	1%	1%
Mountain beech forest_successional/degradedE4	0%	45%	2%	100%	0%	0%	0%	40%	0%	0%	0%	0%	11%	0%	11%	11%	0%	71%	24%	88%	0%	0%	0%	3%	0%	0%	0%	68%	49%	95%	100%	99%	100%	0%	0%	0%	0%	41%	25%	35%	37%
Mountain beech forest_successional/degradedF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	13%	0%	0%	0%
Mountain beech forest_successional/degradedF3	6%	32%	9%	100%	0%	0%	0%	94%	0%	0%	0%	0%	94%	0%	94%	94%	0%	91%	0%	100%	0%	0%	0%	26%	0%	0%	0%	94%	100%	100%	100%	100%	100%	0%	0%	0%	0%	72%	0%	68%	68%
Mountain beech forest_successional/degradedJ2	8%	100%	40%	100%	0%	0%	0%	95%	28%	29%	29%	29%	43%	0%	0%	0%	0%	0%	0%	99%	0%	29%	0%	10%	0%	0%	0%	60%	100%	100%	100%	92%	100%	0%	0%	0%	0%	26%	0%	0%	0%
Mountain beech forest_successional/degradedK1	0%	59%	3%	100%	0%	1%	0%	24%	1%	2%	2%	2%	0%	0%	0%	0%	0%	55%	5%	97%	0%	2%	0%	4%	0%	0%	0%	42%	60%	85%	96%	89%	91%	0%	0%	0%	0%	24%	11%	6%	27%
Mountain beech forest_successional/degradedK4	0%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Mountain beech forest_successional/degradedN1	0%	100%	100%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	14%	0%	0%	0%
Mountain beech forest_successional/degradedN2	0%	83%	15%	100%	0%	1%	0%	83%	0%	0%	0%	0%	0%	0%	0%	0%	0%	83%	63%	100%	0%	4%	0%	80%	0%	0%	0%	87%	100%	100%	100%	100%	100%	0%	0%	0%	0%	14%	17%	17%	17%
Mountain beech forest_successional/degradedNA	0%	100%	0%	100%	0%	0%	0%	44%	0%	0%	0%	0%	0%	0%	0%	0%	0%	56%	0%	100%	0%	44%	0%	44%	0%	0%	0%	56%	44%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Mountain beech forest_successional/degradedP1	0%	40%	4%	100%	0%	3%	0%	33%	1%	2%	2%	2%	4%	0%	2%	2%	0%	45%	4%	87%	0%	14%	0%	34%	0%	0%	0%	56%	23%	87%	97%	93%	92%	0%	0%	0%	0%	42%	20%	36%	45%
Mountain beech forest_successional/degradedP2	2%	64%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	44%	0%	66%	0%	0%	0%	2%	0%	0%	0%	1%	0%	52%	77%	58%	51%	0%	0%	0%	0%	63%	31%	57%	91%
Mountain beech forest_successional/degradedQ1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%	0%	53%	0%	0%	0%	5%	0%	0%	0%	44%	0%	100%	100%	100%	98%	0%	0%	0%	0%	68%	87%	80%	87%
Mountain beech forest_successional/degradedQ2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	65%	0%	100%	0%	0%	0%	0%	0%	0%	0%	35%	0%	100%	100%	100%	100%	0%	0%	0%	0%	33%	33%	33%	33%
Mountain beech forest_successional/degradedR1	0%	79%	5%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	100%	0%	0%	0%	82%	0%	0%	0%	0%	0%	20%	77%	57%	34%	0%	0%	0%	0%	62%	65%	81%	81%
Mountain beech-red beech forestB3	0%	100%	0%	100%	0%	0%	0%	52%	4%	4%	4%	4%	48%	0%	48%	48%	0%	48%	0%	100%	0%	52%	0%	4%	0%	0%	0%	52%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Mountain beech-red beech forestE1	25%	85%	26%	100%	0%	17%	6%	47%	1%	1%	1%	1%	28%	0%	28%	21%	0%	45%	0%	96%	0%	35%	3%	43%	0%	0%	0%	39%	79%	100%	100%	100%	100%	0%	0%	0%	0%	47%	0%	1%	7%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Mountain beech-red beech forestE4	0%	55%	0%	100%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	1%	1%	0%	68%	0%	95%	0%	5%	5%	5%	0%	0%	0%	2%	39%	85%	100%	100%	100%	0%	0%	0%	0%	5%	4%	68%	68%
Mountain beech-red beech forestF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	1%	0%	0%	0%
Mountain beech-red beech forestJ2	0%	100%	0%	100%	0%	0%	0%	30%	0%	0%	0%	0%	3%	0%	3%	3%	0%	70%	0%	100%	0%	0%	0%	0%	0%	0%	0%	33%	100%	100%	100%	100%	100%	0%	0%	0%	0%	27%	0%	0%	0%
Mountain beech-red beech forestK1	0%	22%	10%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	22%	0%	0%	0%	83%	0%	0%	0%	0%	15%	17%	100%	50%	100%	0%	0%	0%	0%	69%	71%	80%	80%
Mountain beech-red beech forestP1	0%	49%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	37%	0%	92%	0%	0%	0%	0%	0%	0%	0%	18%	19%	73%	95%	88%	90%	0%	0%	0%	0%	16%	11%	27%	32%
Mountain beech-red beech forestP2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%	0%	100%	0%	0%	0%	0%	0%	0%	0%	17%	0%	59%	59%	59%	59%	0%	0%	0%	0%	64%	75%	100%	100%
Mountain beech-red beech forestP5	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%
Mountain beech-red beech forestR1	0%	51%	11%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	44%	0%	0%	0%	19%	0%	0%	0%	0%	0%	11%	59%	32%	43%	0%	0%	0%	0%	54%	75%	88%	88%
Mountain beech-red beech forest_successional/degradedB3	0%	100%	0%	100%	0%	0%	0%	52%	17%	17%	17%	17%	49%	0%	48%	48%	0%	69%	0%	100%	0%	31%	0%	17%	0%	0%	0%	87%	100%	100%	100%	100%	100%	0%	0%	0%	0%	3%	0%	0%	0%
Mountain beech-red beech forest_successional/degradedB8	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	63%	0%	63%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	75%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Mountain beech-red beech forest_successional/degradedE1	18%	78%	19%	100%	0%	14%	3%	44%	4%	4%	4%	4%	33%	0%	32%	22%	0%	46%	2%	97%	0%	29%	1%	38%	0%	0%	0%	44%	87%	99%	100%	99%	100%	0%	0%	0%	0%	58%	2%	4%	16%
Mountain beech-red beech forest_successional/degradedE4	0%	42%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%	0%	60%	0%	100%	0%	0%	0%	0%	0%	0%	0%	12%	43%	87%	100%	99%	100%	0%	0%	0%	0%	5%	13%	62%	63%
Mountain beech-red beech forest_successional/degradedF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	4%	0%	0%	0%
Mountain beech-red beech forest_successional/degradedK1	0%	54%	0%	100%	0%	0%	0%	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	41%	0%	77%	0%	0%	0%	35%	0%	0%	0%	4%	63%	85%	100%	91%	99%	0%	0%	0%	0%	28%	20%	22%	22%
Mountain beech-red beech forest_successional/degradedK4	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Mountain beech-red beech forest_successional/degradedP1	0%	48%	0%	100%	0%	0%	0%	4%	0%	0%	0%	0%	3%	0%	3%	3%	0%	39%	0%	99%	0%	1%	0%	2%	0%	0%	0%	36%	35%	93%	99%	98%	98%	0%	0%	0%	0%	47%	22%	31%	40%
Mountain beech-red beech forest_successional/degradedP2	0%	8%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	61%	0%	0%	0%	0%	0%	0%	0%	0%	0%	39%	55%	47%	47%	0%	0%	0%	0%	28%	26%	99%	99%
Mountain beech-red beech forest_successional/degradedP5	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%
Mountain beech-red beech forest_successional/degradedR1	0%	54%	41%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	51%	0%	0%	0%	19%	0%	0%	0%	0%	0%	13%	53%	48%	47%	0%	0%	0%	0%	20%	67%	98%	98%
Permanent Snow and IceP1	0%	84%	37%	100%	0%	0%	0%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	80%	0%	55%	0%	53%	0%	0%	0%	0%	0%	6%	12%	7%	6%	0%	0%	0%	0%	16%	12%	38%	79%
Permanent Snow and IceP2	10%	50%	10%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	24%	0%	0%	0%	30%	0%	0%	0%	0%	0%	50%	50%	50%	50%	0%	0%	0%	0%	87%	60%	100%	100%
Permanent Snow and IceR1	6%	83%	15%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	16%	0%	7%	0%	66%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	71%	77%	84%	93%
Permanent Snow and IceT1	13%	96%	54%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%	0%	53%	0%	22%	1%	84%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	3%	5%	6%	7%
Red beech-silver beech forestE1	0%	69%	0%	100%	0%	0%	0%	1%	0%	0%	0%	0%	64%	0%	64%	64%	0%	32%	0%	100%	0%	0%	0%	3%	0%	0%	0%	1%	85%	99%	100%	100%	100%	0%	0%	0%	0%	4%	2%	0%	5%
Red beech-silver beech forestE4	0%	92%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	2%	2%	0%	50%	0%	100%	0%	0%	0%	2%	0%	0%	0%	0%	76%	95%	100%	98%	100%	0%	0%	0%	0%	1%	1%	2%	3%
Red beech-silver beech forestP1	0%	93%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	65%	0%	90%	0%	0%	0%	2%	0%	0%	0%	0%	21%	61%	94%	88%	92%	0%	0%	0%	0%	26%	3%	38%	41%
Red beech-silver beech forest_successional/degradedE1	0%	40%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	55%	0%	55%	55%	0%	35%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	90%	100%	100%	100%	100%	0%	0%	0%	0%	42%	1%	5%	47%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Red beech-silver beech forest_successional/degradedE4	0%	60%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	63%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	74%	100%	100%	100%	100%	0%	0%	0%	0%	8%	6%	8%	8%
Red beech-silver beech forest_successional/degradedK1	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	99%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Red beech-silver beech forest_successional/degradedP1	0%	78%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	62%	99%	100%	100%	100%	0%	0%	0%	0%	55%	48%	54%	55%
Rimu-matai-miro-totara/kamahi forestE1	78%	95%	83%	100%	0%	50%	25%	80%	0%	0%	0%	0%	2%	1%	1%	1%	0%	50%	0%	92%	0%	95%	9%	95%	0%	0%	0%	2%	99%	100%	99%	84%	100%	0%	0%	0%	0%	65%	4%	4%	4%
Rimu-matai-miro-totara/kamahi forestE3	0%	100%	45%	100%	0%	2%	0%	98%	0%	0%	0%	0%	0%	51%	51%	51%	0%	69%	0%	100%	0%	19%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forestE4	0%	6%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	57%	57%	57%	57%	0%	77%	38%	90%	0%	0%	0%	0%	0%	0%	0%	57%	92%	97%	100%	97%	100%	0%	0%	0%	0%	40%	47%	52%	52%
Rimu-matai-miro-totara/kamahi forestF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	2%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	99%	100%	15%	0%	100%	0%	0%	0%	0%	98%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forestF3	79%	100%	88%	100%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	91%	0%	0%	0%	13%	0%	0%	0%	0%	100%	100%	99%	88%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forestJ3	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	29%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forestK1	0%	39%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	0%	90%	0%	0%	0%	0%	0%	0%	0%	35%	74%	100%	100%	100%	100%	0%	0%	0%	0%	14%	37%	47%	49%
Rimu-matai-miro-totara/kamahi forestN2	0%	100%	84%	100%	0%	50%	0%	100%	0%	0%	0%	0%	34%	50%	50%	50%	0%	100%	0%	100%	0%	84%	0%	100%	0%	0%	0%	50%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forestP1	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forest_successional/degradedE1	78%	94%	79%	100%	0%	43%	13%	83%	0%	1%	0%	1%	8%	1%	1%	1%	0%	58%	6%	91%	0%	89%	2%	91%	0%	0%	0%	6%	96%	100%	95%	80%	100%	0%	0%	0%	0%	36%	5%	5%	6%
Rimu-matai-miro-totara/kamahi forest_successional/degradedE3	0%	100%	12%	100%	0%	42%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	88%	44%	100%	0%	88%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forest_successional/degradedE4	0%	25%	1%	100%	0%	0%	0%	1%	0%	0%	0%	0%	10%	10%	10%	10%	0%	64%	19%	71%	0%	0%	0%	1%	0%	0%	0%	10%	79%	95%	100%	98%	100%	0%	0%	0%	0%	28%	29%	36%	34%
Rimu-matai-miro-totara/kamahi forest_successional/degradedF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	6%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	42%	2%	100%	0%	0%	0%	0%	96%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forest_successional/degradedF3	82%	100%	89%	100%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	83%	0%	0%	0%	11%	0%	0%	0%	0%	100%	100%	96%	85%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forest_successional/degradedJ3	100%	100%	100%	100%	0%	12%	2%	100%	0%	0%	0%	0%	6%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forest_successional/degradedK1	0%	32%	0%	100%	0%	3%	0%	3%	0%	0%	0%	0%	15%	15%	15%	15%	0%	40%	15%	92%	0%	3%	0%	3%	0%	0%	0%	18%	49%	73%	100%	100%	100%	0%	0%	0%	0%	22%	25%	48%	66%
Rimu-matai-miro-totara/kamahi forest_successional/degradedK3	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forest_successional/degradedN2	0%	100%	65%	100%	0%	15%	0%	100%	0%	50%	50%	50%	0%	0%	0%	0%	0%	50%	35%	100%	0%	15%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-matai-miro-totara/kamahi forest_successional/degradedP1	0%	100%	2%	100%	0%	98%	0%	98%	0%	0%	0%	0%	0%	0%	0%	0%	0%	98%	0%	98%	0%	98%	0%	98%	0%	0%	0%	98%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	2%	2%
Rimu-matai-miro-totara/kamahi forest_successional/degradedQ2	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Rimu-miro-totara/kamahi forestE1	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	71%	100%	0%	0%	0%	0%	91%	0%	0%	0%
Rimu-miro-totara/kamahi forestF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	0%	0%
Rimu-miro-totara/kamahi forestF3	96%	100%	96%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	84%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	84%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-miro-totara/kamahi forest_successional/degradedE1	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	76%	0%	0%	0%
Rimu-miro-totara/kamahi forest_successional/degradedE4	0%	100%	20%	100%	0%	0%	0%	57%	0%	57%	0%	0%	0%	0%	0%	0%	0%	43%	23%	100%	0%	0%	0%	0%	0%	0%	0%	0%	43%	43%	100%	23%	43%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-miro-totara/kamahi forest_successional/degradedF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-miro-totara/kamahi forest_successional/degradedF3	95%	100%	95%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	92%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-miro-totara/kamahi forest_successional/degradedN2	0%	90%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	90%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-miro/kamahi-red beech-hard beech forestE1	98%	100%	99%	100%	0%	67%	50%	98%	0%	0%	0%	0%	16%	0%	16%	0%	0%	34%	1%	98%	0%	100%	1%	100%	0%	0%	0%	0%	100%	100%	100%	98%	100%	0%	0%	0%	0%	26%	0%	0%	0%
Rimu-miro/kamahi-red beech-hard beech forestE4	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-miro/kamahi-red beech-hard beech forestF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	2%	0%	0%	0%
Rimu-miro/kamahi-red beech-hard beech forestF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	57%	0%	0%	0%	5%	0%	0%	0%	0%	100%	100%	100%	94%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-miro/kamahi-red beech-hard beech forestP1	0%	97%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	46%	0%	0%	0%	30%	0%	0%	0%	0%	2%	55%	97%	55%	93%	0%	0%	0%	0%	45%	13%	65%	74%
Rimu-miro/kamahi-red beech-hard beech forestP5	0%	78%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	62%	0%	0%	0%	22%	0%	0%	0%	0%	0%	10%	47%	43%	47%	0%	0%	0%	0%	94%	43%	94%	94%
Rimu-miro/kamahi-red beech-hard beech forestR1	0%	99%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	78%	0%	0%	0%	70%	0%	0%	0%	0%	6%	63%	97%	86%	90%	0%	0%	0%	0%	72%	70%	78%	78%
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedE1	100%	100%	100%	100%	0%	71%	23%	100%	0%	0%	0%	0%	50%	0%	50%	0%	0%	60%	6%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	88%	100%	0%	0%	0%	0%	21%	0%	0%	0%
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedE4	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	2%	2%	2%	2%
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	28%	0%	0%	0%
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	1%	0%	0%	0%	0%	100%	100%	100%	53%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedP5	0%	73%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	73%	0%	0%	0%	27%	0%	0%	0%	0%	0%	0%	100%	73%	100%	0%	0%	0%	0%	52%	52%	52%	52%
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedR1	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	79%	79%	79%	0%	0%	0%	0%	79%	79%	100%	100%
Rimu/tawa-kamahi forestE1	100%	100%	100%	100%	0%	71%	55%	100%	0%	1%	0%	1%	2%	0%	1%	0%	0%	61%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	98%	100%	95%	19%	100%	0%	0%	0%	0%	36%	0%	0%	0%
Rimu/tawa-kamahi forestF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	95%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	96%	100%	92%	5%	100%	0%	0%	0%	0%	94%	0%	0%	0%
Rimu/tawa-kamahi forestF3	77%	100%	85%	100%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	87%	0%	0%	0%	10%	0%	0%	0%	0%	100%	100%	82%	52%	100%	0%	0%	0%	0%	0%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Rimu/tawa-kamahi forestJ3	100%	100%	100%	100%	0%	89%	89%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	89%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	93%	100%	36%	0%	100%	0%	0%	0%	0%	3%	0%	0%	0%
Rimu/tawa-kamahi forestK1	0%	100%	77%	100%	0%	23%	0%	100%	0%	0%	0%	0%	77%	77%	77%	77%	0%	100%	23%	100%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu/tawa-kamahi forestN2	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu/tawa-kamahi forest_successional/degradedB3	100%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	12%	0%	0%	0%
Rimu/tawa-kamahi forest_successional/degradedE1	98%	100%	98%	100%	0%	73%	34%	100%	0%	15%	0%	15%	25%	0%	6%	0%	0%	81%	1%	100%	0%	99%	0%	100%	0%	0%	0%	1%	96%	100%	87%	8%	100%	0%	0%	0%	0%	19%	0%	0%	0%
Rimu/tawa-kamahi forest_successional/degradedE4	0%	100%	63%	100%	0%	37%	0%	100%	0%	0%	0%	0%	63%	63%	63%	63%	0%	100%	37%	100%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu/tawa-kamahi forest_successional/degradedF2	100%	100%	100%	100%	0%	98%	90%	100%	0%	0%	0%	0%	8%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	33%	0%	100%	0%	0%	0%	0%	45%	0%	0%	0%
Rimu/tawa-kamahi forest_successional/degradedF3	55%	100%	75%	100%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	97%	0%	0%	0%	5%	0%	0%	0%	0%	100%	100%	76%	41%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu/tawa-kamahi forest_successional/degradedJ3	100%	100%	100%	100%	0%	73%	55%	100%	0%	0%	0%	0%	34%	0%	0%	0%	0%	95%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	96%	100%	48%	0%	100%	0%	0%	0%	0%	10%	0%	0%	0%
Rimu/tawa-kamahi forest_successional/degradedK1	0%	100%	11%	100%	0%	89%	0%	100%	0%	0%	0%	0%	11%	11%	11%	11%	0%	100%	84%	100%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu/tawa-kamahi forest_successional/degradedN2	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Rimu/tawa-kamahi forest_successional/degradedNA	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Riparian	11%	50%	19%	91%	0%	16%	1%	45%	13%	16%	15%	12%	16%	10%	18%	15%	0%	38%	6%	87%	13%	31%	8%	61%	0%	0%	0%	43%	67%	92%	90%	82%	93%	1%	1%	1%	1%	23%	23%	25%	29%
River	11%	45%	36%	81%	0%	11%	0%	44%	34%	39%	38%	34%	6%	30%	32%	31%	0%	28%	2%	83%	19%	26%	4%	83%	0%	0%	0%	73%	87%	91%	87%	84%	93%	7%	7%	7%	7%	29%	36%	39%	41%
River - 4	34%	73%	50%	94%	0%	7%	1%	38%	16%	19%	24%	15%	9%	6%	9%	9%	0%	21%	3%	61%	13%	43%	10%	73%	0%	0%	0%	38%	79%	94%	80%	56%	94%	1%	1%	1%	1%	10%	10%	10%	12%
River - 5	40%	66%	54%	86%	0%	7%	0%	33%	30%	31%	37%	25%	21%	11%	16%	16%	0%	19%	3%	53%	17%	38%	6%	78%	0%	0%	0%	34%	85%	96%	75%	52%	94%	2%	3%	2%	3%	11%	11%	11%	12%
River - 6	21%	67%	37%	91%	0%	13%	1%	56%	19%	21%	22%	19%	47%	17%	41%	30%	0%	35%	6%	77%	7%	43%	3%	64%	0%	0%	0%	49%	79%	99%	91%	75%	98%	1%	1%	1%	1%	14%	18%	12%	15%
River - 7	17%	79%	35%	86%	0%	1%	0%	64%	5%	4%	10%	3%	75%	34%	92%	92%	0%	49%	25%	74%	9%	28%	12%	69%	0%	0%	0%	73%	93%	97%	88%	83%	96%	3%	3%	3%	3%	34%	13%	14%	36%
River - 8	0%	23%	0%	52%	0%	0%	0%	13%	52%	58%	58%	40%	0%	98%	98%	98%	0%	0%	0%	48%	51%	24%	47%	100%	0%	0%	0%	76%	38%	98%	58%	39%	95%	0%	0%	0%	0%	0%	39%	39%	36%
Sand or GravelB3	100%	100%	100%	100%	0%	0%	0%	34%	3%	3%	3%	3%	18%	0%	0%	0%	0%	0%	0%	36%	0%	72%	0%	76%	0%	0%	0%	0%	100%	100%	39%	0%	100%	32%	35%	32%	36%	37%	0%	0%	0%
Sand or GravelB7	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	97%	100%	0%	0%	0%	0%	0%	25%	0%	0%	25%	21%	24%	21%	25%	0%	0%	0%	0%
Sand or GravelB8	100%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	82%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	87%	100%	0%	0%	100%	25%	26%	25%	26%	0%	0%	0%	0%
Sand or GravelB9	100%	100%	100%	100%	0%	73%	0%	73%	77%	77%	77%	77%	7%	0%	7%	0%	0%	73%	0%	73%	0%	100%	0%	100%	0%	0%	0%	0%	27%	87%	0%	0%	57%	40%	45%	40%	49%	0%	0%	0%	0%
Sand or GravelE1	100%	100%	100%	100%	0%	20%	20%	57%	0%	0%	0%	0%	26%	0%	23%	23%	0%	51%	0%	57%	0%	62%	0%	100%	0%	0%	0%	0%	77%	100%	35%	0%	100%	35%	39%	35%	40%	20%	0%	0%	0%
Sand or GravelE4	0%	0%	0%	100%	0%	0%	0%	100%	9%	9%	9%	9%	0%	9%	9%	9%	0%	91%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	78%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Sand or GravelF1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Sand or GravelF2	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	33%	100%	0%	0%	100%	68%	75%	68%	76%	97%	0%	0%	0%
Sand or GravelF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	48%	0%	0%	0%	31%	0%	0%	0%	0%	11%	86%	0%	0%	100%	51%	53%	51%	54%	0%	0%	1%	0%
Sand or GravelI3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	28%	20%	32%	0%	0%	0%	0%
Sand or GravelI4	100%	100%	100%	100%	0%	100%	0%	100%	94%	94%	94%	94%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	6%	100%	0%	0%	0%	0%	0%	94%	0%	0%	1%	2%	2%	2%	3%	0%	0%	0%	0%
Sand or GravelJ2	100%	100%	100%	100%	0%	0%	0%	0%	67%	67%	97%	67%	16%	0%	6%	6%	0%	0%	0%	6%	0%	67%	0%	98%	0%	0%	0%	0%	72%	99%	1%	0%	100%	18%	23%	18%	24%	0%	12%	17%	0%
Sand or GravelJ3	100%	100%	100%	100%	0%	69%	44%	99%	13%	25%	13%	25%	51%	0%	21%	9%	0%	85%	0%	99%	0%	100%	0%	100%	0%	0%	0%	0%	33%	86%	1%	0%	81%	23%	27%	23%	29%	21%	0%	0%	0%
Sand or GravelL1	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	38%	44%	38%	48%	0%	0%	0%	0%
Sand or GravelL2	99%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	42%	53%	42%	57%	0%	0%	0%	0%
Sand or GravelN1	100%	100%	100%	100%	0%	0%	0%	18%	55%	45%	61%	45%	11%	0%	0%	0%	0%	0%	0%	8%	0%	75%	0%	86%	0%	0%	0%	4%	62%	78%	2%	0%	76%	53%	59%	53%	61%	1%	0%	0%	0%
Sand or GravelN2	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	93%	100%	0%	100%	0%	0%	0%	4%	0%	0%	0%	0%	0%	51%	60%	51%	63%	0%	0%	0%	0%
Sand or GravelN3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	82%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	43%	53%	43%	56%	0%	0%	0%	0%
Sand or GravelN6	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	20%	20%	20%	0%
Sand or GravelNA	89%	89%	89%	100%	0%	20%	1%	31%	23%	23%	23%	23%	27%	17%	3%	12%	0%	31%	0%	55%	20%	63%	0%	88%	0%	0%	0%	11%	38%	41%	2%	2%	41%	53%	62%	53%	64%	0%	0%	1%	0%
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldN4	0%	0%	0%	96%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldP1	0%	16%	0%	100%	0%	0%	0%	13%	9%	9%	9%	9%	9%	0%	9%	9%	0%	28%	0%	89%	0%	14%	0%	58%	0%	0%	0%	16%	4%	100%	100%	100%	100%	0%	0%	0%	0%	93%	20%	40%	83%
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldP2	0%	33%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	88%	0%	0%	0%	0%	0%	0%	0%	0%	0%	73%	100%	100%	100%	0%	0%	0%	0%	88%	15%	100%	100%
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldQ1	0%	0%	0%	67%	0%	0%	0%	1%	0%	0%	0%	0%	0%	3%	3%	3%	0%	4%	0%	96%	0%	0%	0%	65%	0%	0%	0%	14%	0%	100%	100%	100%	100%	0%	0%	0%	0%	13%	97%	82%	86%
Scrub, shrubland and tussock-grassland below treeline - FernlandK3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
Scrub, shrubland and tussock-grassland below treeline - FernlandN4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaE1	0%	14%	0%	100%	0%	0%	0%	82%	0%	0%	0%	0%	0%	0%	0%	0%	0%	94%	0%	100%	0%	3%	0%	98%	0%	0%	0%	2%	85%	100%	100%	100%	100%	0%	0%	0%	0%	45%	0%	1%	11%
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaE4	0%	0%	0%	100%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	48%	0%	100%	0%	0%	0%	5%	0%	0%	0%	0%	48%	100%	100%	100%	100%	0%	0%	0%	0%	11%	0%	7%	8%
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaJ2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	100%	100%
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaK1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	83%	100%	100%	100%	100%	0%	0%	0%	0%	7%	2%	6%	6%
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaN4	0%	1%	0%	31%	0%	0%	0%	0%	11%	14%	11%	7%	0%	38%	38%	38%	0%	0%	0%	90%	9%	0%	20%	99%	0%	0%	0%	67%	27%	100%	93%	91%	100%	0%	0%	0%	0%	0%	94%	48%	87%
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaN6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	0%	100%	1%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaNA	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	0%	0%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaP1	0%	14%	0%	100%	0%	0%	0%	4%	0%	0%	0%	0%	6%	0%	6%	6%	0%	34%	0%	82%	0%	1%	0%	44%	0%	0%	0%	9%	19%	100%	100%	100%	100%	0%	0%	0%	0%	93%	26%	62%	77%
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaP2	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	8%	0%	8%	100%
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaQ1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	99%	0%	0%	0%	51%	0%	0%	0%	49%	0%	100%	100%	100%	100%	0%	0%	0%	0%	49%	100%	94%	100%
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaQ2	0%	2%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%	100%	2%	2%	99%	100%	0%	0%	0%	0%	2%	100%	100%	100%	100%	0%	0%	0%	0%	0%	98%	98%	98%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubE1	0%	0%	0%	100%	0%	0%	0%	86%	0%	0%	0%	0%	0%	0%	0%	0%	0%	97%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	80%	100%	100%	100%	100%	0%	0%	0%	0%	43%	0%	0%	15%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubE4	0%	2%	0%	96%	0%	6%	0%	12%	12%	34%	33%	12%	0%	0%	0%	0%	0%	35%	0%	100%	83%	0%	0%	93%	0%	0%	0%	95%	100%	100%	100%	100%	100%	0%	0%	0%	0%	3%	3%	3%	3%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubK1	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	100%	0%	100%	100%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubK3	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	10%	100%	0%	0%	0%	10%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubK4	0%	0%	0%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%	100%	88%	0%	0%	100%	0%	0%	0%	88%	88%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubL1	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	68%	0%	68%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN4	0%	12%	0%	63%	0%	0%	0%	7%	28%	35%	32%	13%	0%	42%	42%	42%	0%	6%	0%	81%	31%	16%	38%	100%	0%	0%	0%	75%	77%	100%	96%	94%	100%	0%	0%	0%	0%	0%	75%	58%	63%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN5	0%	9%	0%	37%	0%	0%	0%	0%	22%	34%	22%	22%	0%	25%	25%	25%	0%	0%	0%	99%	87%	66%	64%	100%	0%	0%	0%	100%	97%	100%	99%	99%	100%	0%	0%	0%	0%	0%	33%	33%	33%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN6	0%	0%	0%	47%	0%	0%	0%	3%	4%	34%	20%	19%	0%	11%	11%	11%	0%	16%	0%	98%	51%	50%	55%	99%	0%	0%	0%	65%	95%	100%	100%	100%	100%	0%	0%	0%	0%	1%	31%	15%	30%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN7	0%	0%	0%	76%	0%	41%	0%	76%	76%	76%	76%	76%	0%	0%	0%	0%	0%	0%	0%	76%	24%	0%	0%	24%	0%	0%	0%	59%	100%	100%	100%	100%	100%	0%	0%	0%	0%	1%	1%	1%	0%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubP1	0%	0%	0%	100%	0%	0%	0%	23%	0%	0%	0%	0%	0%	0%	0%	0%	0%	81%	0%	88%	0%	0%	0%	82%	0%	0%	0%	0%	9%	100%	100%	100%	100%	0%	0%	0%	0%	28%	3%	9%	51%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubQ1	0%	0%	0%	88%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%	100%	0%	0%	0%	35%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	85%	75%	59%
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubQ2	0%	0%	0%	99%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	1%	0%	1%	89%	0%	0%	0%	1%	1%	100%	100%	100%	100%	0%	0%	0%	0%	0%	99%	99%	99%
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandE1	0%	3%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	97%	0%	100%	0%	14%	0%	100%	0%	0%	0%	0%	32%	100%	100%	100%	100%	0%	0%	0%	0%	59%	0%	0%	1%
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandE4	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	39%	39%	39%	39%
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandN4	0%	0%	0%	19%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	0%	100%	92%	0%	0%	100%	0%	0%	0%	8%	97%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	95%	100%
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandP1	0%	15%	0%	100%	0%	0%	0%	39%	1%	1%	1%	1%	2%	0%	2%	2%	0%	40%	0%	97%	0%	9%	0%	63%	0%	0%	0%	4%	7%	98%	100%	100%	100%	0%	0%	0%	0%	77%	13%	26%	56%
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandP2	0%	73%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	88%	0%	0%	0%	13%	0%	0%	0%	0%	0%	85%	99%	98%	94%	0%	0%	0%	0%	70%	40%	84%	91%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandQ1	0%	0%	0%	10 0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16 %	0%	64 %	0%	0%	0%	15 %	0%	0%	0%	62 %	0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	70 %	90 %	90 %	90 %
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandQ2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10 0%	0%	0%	0%	10 0%	0%	0%	0%	0%	0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	0%	10 0%	10 0%	10 0%
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandR1	0%	10 0%	0%	10 0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	89 %	0%	0%	0%	13 %	0%	0%	0%	0%	0 %	39 %	95 %	94 %	85 %	0%	0%	0%	0%	57 %	39 %	95 %	97 %
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandE1	0%	10 %	0%	10 0%	0%	0%	0%	93 %	0%	0%	0%	0%	0%	0%	0%	0%	0%	95 %	0%	10 0%	0%	5%	0%	96 %	0%	0%	0%	1%	76 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	42 %	0%	1%	24 %
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandE4	0%	3%	0%	10 0%	0%	12 %	0%	18 %	9%	9%	9%	9%	0%	0%	0%	0%	0%	23 %	12 %	10 0%	0%	1%	0%	40 %	0%	0%	0%	12 %	52 %	97 %	10 0 %	97 %	97 %	0%	0%	0%	0%	2%	1%	2%	2%
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandJ2	0%	0%	0%	10 0%	0%	10 0%	0%	10 0%	10 0%	10 0%	10 0%	10 0%	0%	0%	0%	0%	0%	10 0%	0%	10 0%	0%	0%	0%	0%	0%	0%	0%	10 0%	10 0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandK1	0%	77 %	0%	10 0%	0%	0%	0%	77 %	0%	0%	0%	0%	0%	0%	0%	0%	0%	77 %	0%	87 %	0%	3%	0%	90 %	0%	0%	0%	0%	86 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	26 %	0%	3%	3%
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandK2	0%	0%	0%	10 0%	0%	10 0%	0%	10 0%	10 0%	10 0%	10 0%	10 0%	0%	0%	0%	0%	0%	10 0%	10 0%	10 0%	0%	0%	0%	0%	0%	0%	0%	10 0%	10 0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	46 %	46 %	46 %	46 %
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandK3	0%	0%	0%	10 0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10 0%	0%	0%	0%	0%	0%	0%	0%	0%	0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandN4	0%	0%	0%	21 %	0%	0%	0%	1%	4%	4%	4%	0%	0%	47 %	47 %	47 %	0%	2%	0%	88 %	45 %	8%	28 %	10 0%	0%	0%	0%	40 %	78 %	10 0 %	98 %	96 %	10 0 %	0%	0%	0%	0%	0%	84 %	79 %	81 %
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandN5	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	42 %	42 %	42 %	0%	0%	0%	38 %	7%	0%	10 0%	10 0%	0%	0%	0%	38 %	43 %	10 0 %	92 %	75 %	10 0 %	0%	0%	0%	0%	0%	92 %	92 %	92 %
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandN6	0%	0%	0%	35 %	0%	0%	0%	0%	0%	0%	0%	0%	0%	11 %	11 %	11 %	0%	0%	0%	10 0%	0%	0%	0%	10 0%	0%	0%	0%	77 %	1 %	10 0 %	36 %	24 %	10 0 %	0%	0%	0%	0%	0%	27 %	7%	27 %
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandP1	0%	9%	0%	10 0%	0%	0%	0%	41 %	0%	1%	1%	1%	1%	0%	1%	1%	0%	56 %	0%	97 %	0%	6%	0%	70 %	0%	0%	0%	5%	20 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	66 %	11 %	20 %	45 %
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandP2	0%	93 %	0%	10 0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	79 %	0%	0%	0%	17 %	0%	0%	0%	0%	0 %	68 %	97 %	95 %	90 %	0%	0%	0%	0%	51 %	49 %	71 %	82 %
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandQ1	0%	0%	0%	87 %	0%	0%	0%	22 %	0%	0%	0%	0%	0%	4%	4%	4%	0%	24 %	0%	98 %	0%	1%	8%	69 %	0%	0%	0%	7%	0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	4%	71 %	61 %	60 %
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandQ2	0%	0%	0%	10 0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	10 0%	0%	0%	0%	99 %	0%	0%	0%	0%	0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	0%	68 %	0%	0%
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandR1	0%	84 %	0%	10 0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20 %	0%	73 %	0%	0%	0%	48 %	0%	0%	0%	0%	0 %	38 %	73 %	69 %	65 %	0%	0%	0%	0%	71 %	56 %	89 %	94 %
Scrub, shrubland and tussock-grassland below treeline_successional/degradedE1	0%	0%	0%	10 0%	0%	0%	0%	92 %	0%	0%	0%	0%	0%	0%	0%	0%	0%	86 %	0%	10 0%	0%	1%	0%	10 0%	0%	0%	0%	0%	46 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	85 %	0%	0%	8%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedE4	0%	0%	0%	49 %	0%	2%	0%	9%	10 %	12 %	12 %	10 %	0%	47 %	47 %	47 %	0%	24 %	2%	10 0%	88 %	20 %	0%	94 %	0%	0%	0%	10 0%	10 0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	30 %	71 %	69 %	78 %
Scrub, shrubland and tussock-grassland below treeline_successional/degradedJ2	0%	0%	0%	10 0%	0%	10 0%	0%	10 0%	10 0%	10 0%	10 0%	10 0%	0%	0%	0%	0%	0%	10 0%	10 0%	10 0%	0%	0%	0%	0%	0%	0%	0%	10 0%	10 0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedK2	0%	1%	0%	10 0%	0%	59 %	0%	10 0%	10 0%	10 0%	10 0%	10 0%	0%	41 %	41 %	41 %	0%	10 0%	54 %	10 0%	0%	0%	0%	0%	0%	0%	0%	10 0%	10 0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	48 %	88 %	90 %	97 %
Scrub, shrubland and tussock-grassland below treeline_successional/degradedK4	0%	0%	0%	10 0%	0%	10 0%	0%	10 0%	10 0%	10 0%	10 0%	10 0%	0%	0%	0%	0%	0%	10 0%	10 0%	10 0%	0%	0%	0%	0%	0%	0%	0%	10 0%	10 0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedN2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10 0%	10 0%	0%	0%	10 0%	0%	0%	0%	10 0%	10 0 %	10 0 %	10 0 %	10 0 %	10 0 %	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedN4	0%	0%	0%	37 %	0%	0%	0%	1%	20 %	21 %	20 %	2%	0%	55 %	55 %	55 %	0%	7%	0%	62 %	34 %	2%	23 %	10 0%	0%	0%	0%	54 %	70 %	10 0 %	94 %	88 %	10 0 %	0%	0%	0%	0%	0%	86 %	85 %	85 %

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Scrub, shrubland and tussock-grassland below treeline_successional/degradedN5	0%	0%	0%	40%	0%	0%	0%	0%	0%	14%	0%	0%	0%	62%	62%	62%	0%	0%	0%	32%	18%	0%	80%	100%	0%	0%	0%	40%	75%	92%	92%	77%	92%	0%	0%	0%	0%	0%	69%	69%	69%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedN6	0%	0%	0%	12%	0%	1%	0%	10%	11%	26%	23%	20%	0%	47%	47%	47%	0%	20%	0%	77%	87%	36%	12%	93%	0%	0%	0%	77%	100%	100%	100%	100%	100%	0%	0%	0%	0%	23%	87%	82%	87%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedN7	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	4%	4%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedNA	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	0%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	18%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedP1	0%	17%	0%	100%	0%	0%	0%	50%	6%	15%	15%	15%	5%	0%	5%	5%	0%	70%	0%	97%	0%	22%	0%	74%	0%	0%	0%	10%	10%	100%	100%	100%	100%	0%	0%	0%	0%	93%	3%	12%	43%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedP2	0%	69%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	66%	0%	0%	0%	31%	0%	0%	0%	0%	0%	97%	100%	100%	97%	0%	0%	0%	0%	52%	6%	95%	95%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedQ1	0%	0%	0%	44%	0%	0%	0%	1%	0%	0%	0%	0%	0%	5%	5%	5%	0%	6%	0%	99%	0%	0%	29%	90%	0%	0%	0%	9%	0%	100%	100%	100%	100%	0%	0%	0%	0%	3%	95%	81%	84%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedQ2	0%	0%	0%	94%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	10%	0%	10%	0%	100%	7%	5%	3%	97%	0%	0%	0%	15%	7%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	95%	92%
Scrub, shrubland and tussock-grassland below treeline_successional/degradedR1	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	100%	100%	3%	0%	0%	0%	0%	3%	0%	3%	3%
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldP1	2%	25%	5%	100%	0%	13%	0%	36%	2%	5%	3%	3%	0%	0%	0%	0%	2%	9%	3%	63%	1%	19%	1%	33%	0%	0%	0%	9%	1%	63%	80%	67%	60%	0%	0%	0%	0%	31%	35%	42%	56%
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldP2	2%	66%	3%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	0%	62%	0%	1%	0%	16%	0%	0%	0%	0%	0%	34%	66%	63%	54%	0%	0%	0%	0%	69%	27%	91%	98%
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldQ1	0%	2%	0%	95%	0%	14%	1%	35%	0%	1%	0%	0%	0%	0%	0%	0%	0%	11%	1%	75%	12%	19%	2%	66%	0%	0%	0%	29%	1%	100%	100%	99%	100%	0%	0%	0%	0%	19%	69%	50%	48%
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldR1	12%	77%	19%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	1%	24%	0%	5%	0%	69%	0%	0%	0%	0%	0%	7%	21%	15%	8%	0%	0%	0%	0%	61%	71%	81%	93%
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldT1	2%	99%	2%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	8%	0%	14%	14%	83%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	16%	24%	24%
Scrub, tussock-grassland and herbfield above treeline - FernlandP1	0%	0%	0%	100%	0%	0%	0%	47%	0%	0%	0%	0%	0%	0%	0%	0%	0%	47%	0%	47%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, tussock-grassland and herbfield above treeline - FernlandQ1	0%	100%	0%	100%	0%	0%	0%	97%	0%	0%	0%	0%	0%	8%	8%	8%	0%	89%	0%	100%	0%	81%	0%	100%	0%	0%	0%	100%	23%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaE1	62%	100%	93%	100%	0%	62%	12%	62%	0%	0%	0%	0%	4%	0%	4%	0%	0%	62%	4%	100%	0%	100%	38%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	98%	0%	0%	0%
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaE4	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaK1	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	100%	100%
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaP1	18%	64%	24%	100%	0%	0%	0%	22%	0%	0%	0%	0%	3%	0%	3%	2%	0%	11%	0%	51%	0%	49%	0%	71%	0%	0%	0%	10%	39%	98%	100%	99%	99%	0%	0%	0%	0%	73%	15%	36%	38%
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaP2	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	7%	0%	0%	0%	93%	0%	0%	0%	0%	0%	7%	100%	100%	100%	0%	0%	0%	0%	93%	93%	93%	100%
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaP5	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	83%	83%	83%
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaR1	0%	96%	61%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	66%	34%	34%	0%	0%	0%	0%	31%	87%	87%	87%
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubE1	3%	26%	9%	73%	0%	0%	0%	59%	0%	0%	0%	0%	0%	0%	0%	0%	0%	53%	2%	100%	0%	26%	0%	26%	0%	0%	0%	74%	66%	100%	100%	100%	100%	0%	0%	0%	0%	26%	0%	0%	74%
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubE4	6%	71%	10%	100%	0%	71%	0%	88%	1%	1%	1%	1%	0%	0%	0%	0%	0%	1%	0%	98%	0%	18%	0%	58%	0%	0%	0%	6%	2%	94%	100%	94%	94%	0%	0%	0%	0%	0%	0%	6%	17%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubP1	8%	39%	17%	86%	0%	7%	0%	37%	1%	1%	1%	1%	3%	5%	5%	5%	0%	27%	11%	85%	0%	23%	6%	38%	0%	0%	0%	33%	24%	92%	99%	92%	92%	0%	0%	0%	0%	22%	11%	26%	35%
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubP2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	100%	100%	100%	100%
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubQ1	0%	49%	0%	100%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	49%	0%	98%	3%	90%	0%	98%	0%	0%	0%	96%	66%	100%	100%	100%	100%	0%	0%	0%	0%	1%	8%	8%	5%
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubR1	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandE1	32%	89%	72%	100%	0%	31%	31%	51%	0%	0%	0%	0%	0%	0%	0%	0%	0%	52%	0%	97%	0%	94%	30%	94%	0%	0%	0%	6%	92%	100%	100%	100%	100%	0%	0%	0%	0%	88%	0%	0%	5%
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandE4	13%	62%	16%	93%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	37%	0%	48%	0%	13%	0%	0%	0%	24%	0%	84%	97%	84%	84%	0%	0%	0%	0%	0%	16%	18%	34%
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandP1	6%	47%	18%	98%	0%	5%	0%	19%	0%	1%	0%	0%	1%	1%	1%	1%	0%	15%	2%	58%	0%	24%	6%	30%	0%	0%	0%	17%	12%	71%	89%	86%	82%	0%	0%	0%	0%	35%	21%	45%	62%
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandP2	7%	55%	11%	100%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%	0%	6%	1%	71%	0%	0%	0%	17%	0%	0%	0%	0%	0%	51%	74%	70%	63%	0%	0%	0%	0%	63%	48%	92%	95%
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandQ1	0%	20%	0%	100%	0%	25%	0%	75%	5%	10%	10%	5%	0%	0%	0%	0%	0%	19%	0%	97%	10%	52%	8%	83%	0%	0%	0%	57%	25%	100%	100%	100%	100%	0%	0%	0%	0%	11%	22%	22%	14%
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandR1	20%	78%	36%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	18%	0%	10%	1%	74%	0%	0%	0%	0%	0%	9%	31%	24%	22%	0%	0%	0%	0%	58%	75%	97%	97%
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandT1	0%	100%	27%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	7%	7%	7%	7%	0%	0%	0%	0%	1%	2%	2%	23%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandE1	37%	71%	61%	100%	0%	37%	24%	70%	0%	0%	0%	0%	11%	0%	11%	0%	0%	64%	11%	98%	0%	71%	27%	73%	0%	0%	0%	27%	94%	100%	100%	100%	100%	0%	0%	0%	0%	60%	0%	0%	9%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandE3	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%	0%	0%	0%	100%	84%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandE4	0%	10%	8%	100%	0%	0%	0%	83%	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	0%	84%	0%	8%	0%	48%	0%	0%	0%	83%	83%	91%	92%	91%	91%	0%	0%	0%	0%	0%	8%	9%	16%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandNA	0%	6%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	83%	0%	31%	0%	6%	0%	0%	0%	6%	0%	100%	100%	100%	100%	0%	0%	0%	0%	7%	5%	5%	29%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandP1	2%	23%	5%	98%	0%	16%	0%	42%	1%	2%	2%	1%	0%	1%	1%	1%	0%	17%	4%	71%	0%	23%	2%	42%	0%	0%	0%	29%	3%	82%	92%	88%	84%	0%	0%	0%	0%	23%	15%	26%	44%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandP2	4%	57%	8%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	69%	0%	0%	0%	15%	0%	0%	0%	0%	0%	39%	65%	62%	52%	0%	0%	0%	0%	53%	39%	90%	95%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandQ1	0%	10%	0%	99%	0%	7%	0%	45%	2%	4%	3%	1%	0%	1%	1%	1%	0%	22%	0%	91%	16%	17%	12%	74%	0%	0%	0%	43%	5%	100%	100%	99%	100%	0%	0%	0%	0%	5%	48%	42%	32%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandR1	8%	73%	16%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	24%	0%	6%	2%	64%	0%	0%	0%	0%	0%	5%	24%	17%	11%	0%	0%	0%	0%	60%	66%	92%	96%
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandT1	3%	97%	4%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	99%	0%	0%	0%	0%	0%	5%	6%	6%	5%	0%	0%	0%	0%	4%	12%	12%	12%
Scrub, tussock-grassland and herbfield above treeline_successional/degradedE1	8%	91%	87%	100%	0%	5%	0%	97%	0%	0%	0%	0%	5%	0%	5%	0%	0%	14%	14%	100%	0%	91%	0%	100%	0%	0%	0%	9%	91%	100%	100%	100%	100%	0%	0%	0%	0%	80%	0%	0%	0%
Scrub, tussock-grassland and herbfield above treeline_successional/degradedE4	0%	59%	0%	100%	0%	100%	0%	100%	59%	59%	59%	59%	0%	0%	0%	0%	0%	59%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Scrub, tussock-grassland and herbfield above treeline_successional/degradedP1	0%	22%	3%	100%	0%	6%	0%	54%	4%	9%	5%	5%	3%	4%	6%	4%	0%	36%	9%	82%	0%	30%	2%	38%	0%	0%	0%	52%	20%	95%	100%	99%	98%	0%	0%	0%	0%	41%	15%	18%	48%
Scrub, tussock-grassland and herbfield above treeline_successional/degradedP2	0%	15%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	60%	0%	0%	0%	47%	0%	0%	0%	0%	0%	75%	97%	96%	88%	0%	0%	0%	0%	82%	26%	81%	97%
Scrub, tussock-grassland and herbfield above treeline_successional/degradedQ1	0%	1%	0%	96%	0%	1%	0%	20%	1%	4%	3%	1%	0%	2%	2%	2%	0%	11%	0%	91%	35%	11%	8%	91%	0%	0%	0%	63%	3%	100%	100%	100%	100%	0%	0%	0%	0%	3%	70%	57%	54%
Scrub, tussock-grassland and herbfield above treeline_successional/degradedQ2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	20%	20%	20%	100%	0%	0%	0%	100%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	0%	100%
Scrub, tussock-grassland and herbfield above treeline_successional/degradedR1	12%	68%	12%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	5%	0%	0%	0%	27%	0%	0%	0%	17%	0%	22%	43%	42%	33%	0%	0%	0%	0%	32%	52%	98%	100%
Silver beech forestE1	77%	100%	77%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	77%	0%	0%	0%	77%	0%	0%	0%	0%	0%	0%	14%	0%	0%	0%	0%	0%	0%	10%	97%	97%	97%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Silver beech forestE4	16%	96%	23%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	46%	0%	88%	0%	0%	0%	18%	0%	0%	0%	0%	39%	77%	87%	77%	77%	0%	0%	0%	0%	16%	14%	16%	16%
Silver beech forestF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	78%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Silver beech forestK1	1%	93%	2%	100%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%	0%	34%	1%	91%	0%	0%	0%	8%	0%	0%	0%	0%	81%	91%	99%	91%	91%	0%	0%	0%	0%	30%	14%	30%	31%
Silver beech forestP1	0%	83%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	2%	2%	0%	23%	0%	91%	0%	0%	0%	19%	0%	0%	0%	0%	13%	69%	93%	87%	86%	0%	0%	0%	0%	26%	24%	36%	40%
Silver beech forestP2	22%	89%	22%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%	0%	79%	0%	0%	0%	20%	0%	0%	0%	0%	0%	7%	30%	8%	8%	0%	0%	0%	0%	56%	40%	81%	82%
Silver beech forestP5	10%	100%	23%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	72%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	22%	0%	0%	0%	0%	0%	0%	93%	7%	99%	99%
Silver beech forestR1	12%	93%	20%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	0%	60%	0%	0%	0%	56%	0%	0%	0%	0%	0%	16%	58%	37%	34%	0%	0%	0%	0%	54%	27%	68%	69%
Silver beech forest_successional/degradedE1	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Silver beech forest_successional/degradedE4	11%	67%	11%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	0%	65%	0%	0%	0%	5%	0%	0%	0%	0%	5%	53%	97%	54%	53%	0%	0%	0%	0%	13%	24%	24%	24%
Silver beech forest_successional/degradedF3	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Silver beech forest_successional/degradedK1	0%	53%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%	0%	24%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	37%	92%	99%	99%	99%	0%	0%	0%	0%	70%	53%	70%	71%
Silver beech forest_successional/degradedP1	17%	87%	17%	100%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	3%	3%	0%	33%	5%	55%	0%	0%	0%	10%	0%	0%	0%	0%	4%	24%	46%	28%	27%	0%	0%	0%	0%	54%	69%	77%	83%
Silver beech forest_successional/degradedP2	7%	76%	7%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	65%	0%	0%	0%	36%	0%	0%	0%	0%	0%	10%	38%	30%	21%	0%	0%	0%	0%	80%	45%	94%	96%
Silver beech forest_successional/degradedP5	8%	81%	11%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	78%	0%	0%	0%	52%	0%	0%	0%	0%	0%	27%	62%	54%	59%	0%	0%	0%	0%	10%	9%	11%	11%
Silver beech forest_successional/degradedR1	11%	98%	19%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	47%	0%	0%	0%	80%	0%	0%	0%	0%	0%	12%	40%	30%	23%	0%	0%	0%	0%	59%	58%	77%	88%
Sub Alpine Shrubland_successional/degradedB8	9%	100%	100%	100%	0%	9%	0%	100%	0%	0%	0%	0%	9%	0%	9%	0%	0%	100%	9%	100%	0%	100%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	85%	0%	0%	0%
Sub Alpine Shrubland_successional/degradedE1	0%	0%	0%	100%	0%	43%	0%	48%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	57%	0%	100%	0%	0%	0%	43%	100%	100%	100%	100%	100%	0%	0%	0%	0%	57%	0%	4%	5%
Sub Alpine Shrubland_successional/degradedE4	1%	90%	90%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	99%	99%	99%	99%	0%	0%	0%	0%	0%	90%	90%	100%
Sub Alpine Shrubland_successional/degradedNA	26%	78%	50%	100%	0%	2%	0%	15%	0%	0%	0%	0%	1%	0%	1%	0%	9%	27%	9%	68%	0%	4%	1%	35%	0%	0%	0%	21%	31%	61%	74%	65%	65%	0%	0%	0%	0%	9%	7%	11%	22%
Sub Alpine Shrubland_successional/degradedP1	1%	7%	2%	61%	0%	0%	0%	6%	0%	1%	0%	0%	4%	0%	4%	0%	0%	12%	0%	16%	0%	42%	36%	6%	0%	0%	0%	0%	49%	5%	55%	95%	93%	51%	0%	0%	0%	0%	6%	39%	47%	95%
Sub Alpine Shrubland_successional/degradedP2	19%	19%	19%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	0%	0%	0%	0%	81%	80%	81%	100%
Sub Alpine Shrubland_successional/degradedP5	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	5%	0%	5%	5%
Sub Alpine Shrubland_successional/degradedQ1	0%	0%	0%	100%	0%	0%	0%	12%	0%	1%	0%	0%	0%	7%	7%	7%	0%	19%	0%	83%	0%	0%	2%	47%	0%	0%	0%	34%	0%	100%	100%	100%	100%	0%	0%	0%	0%	40%	71%	59%	65%
Sub Alpine Shrubland_successional/degradedQ2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
Sub Alpine Shrubland_successional/degradedR1	7%	55%	11%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	7%	0%	12%	0%	56%	0%	0%	0%	0%	0%	14%	16%	14%	14%	0%	0%	0%	0%	51%	74%	89%	92%
Sub Alpine Shrubland_successional/degradedT1	50%	92%	83%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	32%	7%	42%	0%	1%	1%	80%	0%	0%	0%	0%	3%	35%	50%	43%	46%	0%	0%	0%	0%	4%	20%	20%	26%
Tall Tussock Grassland_successional/degradedB3	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Tall Tussock Grassland_successional/degradedE1	1%	9%	1%	100%	0%	10%	0%	81%	7%	7%	7%	7%	68%	0%	68%	0%	0%	87%	0%	99%	0%	73%	0%	76%	0%	0%	0%	5%	75%	90%	99%	89%	90%	0%	0%	0%	0%	68%	0%	82%	42%
Tall Tussock Grassland_successional/degradedE4	0%	4%	1%	100%	0%	89%	0%	98%	59%	66%	61%	61%	0%	0%	0%	0%	0%	88%	67%	100%	0%	0%	0%	17%	0%	0%	0%	79%	22%	75%	100%	79%	82%	0%	0%	0%	0%	10%	5%	10%	6%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
Tall Tussock Grassland_successional/degradedJ2	0%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Tall Tussock Grassland_successional/degradedK1	4%	10%	4%	100%	0%	90%	0%	90%	0%	0%	0%	0%	0%	0%	0%	0%	4%	4%	4%	94%	0%	0%	0%	6%	0%	0%	0%	0%	0%	90%	96%	96%	96%	0%	0%	0%	0%	0%	0%	0%	0%
Tall Tussock Grassland_successional/degradedK2	0%	0%	0%	100%	0%	100%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Tall Tussock Grassland_successional/degradedK3	0%	0%	0%	100%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	0%	2%	2%	2%	0%	0%	0%	0%
Tall Tussock Grassland_successional/degradedN2	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Tall Tussock Grassland_successional/degradedN4	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	90%	90%	0%	0%	0%	90%	36%	0%	0%	100%	0%	0%	0%	14%	57%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
Tall Tussock Grassland_successional/degradedNA	7%	36%	11%	86%	0%	10%	0%	33%	1%	3%	2%	2%	0%	15%	15%	15%	2%	26%	6%	87%	2%	17%	1%	44%	0%	0%	0%	31%	36%	90%	98%	89%	89%	0%	0%	0%	0%	3%	6%	9%	21%
Tall Tussock Grassland_successional/degradedP1	1%	26%	5%	96%	0%	13%	0%	34%	0%	1%	0%	0%	0%	0%	0%	0%	0%	2%	1%	57%	0%	36%	2%	37%	0%	0%	0%	18%	0%	57%	77%	70%	48%	0%	0%	0%	0%	10%	22%	30%	54%
Tall Tussock Grassland_successional/degradedP2	42%	71%	60%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	70%	0%	7%	0%	14%	0%	0%	0%	0%	0%	7%	16%	16%	8%	0%	0%	0%	0%	5%	7%	37%	97%
Tall Tussock Grassland_successional/degradedP5	0%	30%	30%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	30%	30%	30%	0%	0%	0%	0%	82%	70%	82%	82%
Tall Tussock Grassland_successional/degradedQ1	0%	2%	0%	88%	0%	3%	0%	21%	3%	10%	3%	2%	0%	10%	10%	10%	0%	23%	0%	96%	9%	3%	13%	82%	0%	0%	0%	37%	2%	100%	100%	100%	100%	0%	0%	0%	0%	8%	73%	51%	58%
Tall Tussock Grassland_successional/degradedQ2	0%	0%	0%	58%	0%	0%	0%	0%	1%	1%	1%	1%	0%	8%	8%	8%	0%	2%	0%	99%	9%	1%	34%	86%	0%	0%	0%	14%	12%	100%	100%	100%	100%	0%	0%	0%	0%	0%	87%	79%	78%
Tall Tussock Grassland_successional/degradedR1	12%	72%	24%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	9%	0%	3%	0%	44%	0%	0%	0%	0%	0%	4%	18%	15%	6%	0%	0%	0%	0%	38%	48%	83%	90%
Tall Tussock Grassland_successional/degradedT1	3%	42%	17%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	0%	1%	1%	62%	0%	0%	0%	0%	1%	11%	21%	15%	14%	0%	0%	0%	0%	9%	12%	16%	16%
Wetlands	12%	55%	22%	95%	0%	21%	1%	50%	23%	31%	30%	26%	11%	8%	13%	13%	3%	43%	14%	82%	8%	24%	4%	50%	0%	0%	0%	41%	78%	97%	88%	80%	97%	4%	5%	4%	5%	9%	15%	15%	14%
WetlandsK4	0%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Wetlands_successional/degradedE1	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Wetlands_successional/degradedE3	0%	100%	100%	100%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Wetlands_successional/degradedE4	0%	61%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	77%	0%	100%	0%	0%	0%	0%	0%	0%	0%	15%	100%	100%	100%	100%	100%	0%	0%	0%	0%	8%	8%	8%	8%
Wetlands_successional/degradedF3	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Wetlands_successional/degradedI3	62%	100%	62%	100%	0%	0%	0%	0%	10%	10%	61%	10%	0%	0%	0%	0%	0%	0%	0%	39%	0%	10%	0%	100%	0%	0%	0%	0%	100%	100%	0%	0%	100%	58%	60%	58%	61%	0%	0%	0%	0%
Wetlands_successional/degradedK4	0%	16%	1%	99%	0%	31%	0%	57%	32%	46%	33%	33%	10%	11%	12%	12%	0%	47%	29%	100%	1%	10%	2%	25%	0%	0%	0%	49%	72%	100%	100%	99%	100%	0%	0%	0%	0%	1%	1%	1%	3%
Wetlands_successional/degradedL2	100%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Wetlands_successional/degradedN1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	100%	0%	0%	0%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%	100%	100%	100%
acidic.coastal.cliffs	100%	100%	100%	100%	0%	25%	25%	33%	0%	0%	0%	0%	51%	0%	42%	42%	0%	33%	0%	34%	0%	39%	0%	100%	0%	0%	0%	0%	80%	100%	20%	0%	100%	0%	0%	0%	0%	6%	0%	0%	0%
acidic.cst	12%	57%	20%	97%	0%	14%	0%	62%	13%	18%	15%	9%	23%	3%	19%	12%	0%	46%	11%	94%	9%	36%	5%	60%	0%	0%	0%	50%	73%	98%	98%	92%	98%	0%	0%	0%	0%	33%	7%	17%	18%
acidic.scree	3%	35%	8%	99%	0%	3%	0%	21%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	1%	54%	0%	16%	2%	31%	0%	0%	0%	12%	1%	41%	56%	49%	40%	0%	0%	0%	0%	36%	30%	59%	66%

Ecosystem	Extreme cold				Drought				Fire				Flooding				Extreme heat				Rainfall				Wind				Invasion					Coastal inundation				Erosion			
	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99	CS	CV	LP	PC	PM	245_60	245_99	370_60	370_99	245_60	245_99	370_60	370_99
basic.cst	37%	98%	70%	100%	0%	6%	0%	35%	3%	9%	4%	3%	8%	1%	5%	5%	0%	15%	6%	90%	1%	40%	1%	63%	0%	0%	0%	6%	92%	100%	79%	65%	100%	0%	0%	0%	0%	8%	0%	0%	4%
cave	0%	44%	0%	100%	0%	0%	0%	56%	0%	0%	0%	0%	0%	0%	0%	0%	0%	56%	0%	56%	0%	0%	0%	0%	0%	0%	0%	56%	8%	93%	8%	8%	93%	34%	35%	34%	35%	7%	7%	7%	7%
limestone.coastal.cliffs	85%	100%	100%	100%	0%	0%	0%	85%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	2%	23%	15%	23%	0%	0%	0%	13%	52%	100%	46%	0%	96%	0%	0%	0%	0%	19%	0%	0%	0%
limestone.cst	36%	94%	74%	100%	0%	12%	3%	80%	49%	61%	61%	51%	26%	13%	18%	13%	0%	15%	0%	81%	14%	56%	5%	43%	0%	0%	0%	14%	90%	100%	87%	66%	99%	0%	0%	0%	0%	18%	2%	0%	0%
moraine	58%	97%	79%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	37%	4%	67%	0%	16%	0%	76%	0%	0%	0%	0%	0%	2%	9%	5%	4%	0%	0%	0%	0%	7%	17%	19%	23%
outwash.gravels	0%	0%	0%	28%	0%	2%	0%	4%	28%	49%	42%	29%	0%	71%	71%	71%	0%	1%	0%	48%	71%	3%	7%	98%	0%	0%	0%	88%	100%	100%	100%	100%	100%	0%	0%	0%	0%	89%	92%	91%	92%
quartzose.cst	57%	92%	79%	100%	0%	0%	0%	76%	9%	10%	10%	9%	43%	1%	13%	14%	0%	9%	2%	39%	7%	32%	0%	47%	0%	0%	0%	12%	96%	100%	89%	31%	100%	0%	0%	0%	0%	64%	8%	0%	8%
sinkhole	0%	96%	85%	100%	0%	0%	0%	22%	1%	2%	2%	1%	2%	2%	2%	2%	0%	6%	2%	90%	58%	86%	0%	74%	0%	0%	0%	13%	93%	100%	92%	68%	100%	0%	0%	0%	0%	3%	0%	0%	2%
snow.banks	16%	64%	26%	100%	0%	0%	0%	3%	0%	0%	0%	0%	1%	0%	1%	1%	0%	9%	0%	51%	0%	5%	0%	42%	0%	0%	0%	7%	1%	16%	41%	40%	27%	0%	0%	0%	0%	46%	42%	76%	81%
tarn	5%	30%	7%	100%	0%	29%	0%	41%	26%	29%	28%	27%	0%	1%	1%	1%	1%	44%	27%	76%	0%	5%	0%	19%	0%	0%	0%	31%	36%	71%	80%	74%	72%	0%	0%	0%	0%	21%	22%	47%	36%

Appendix 5

Ecosystem sensitivity and adaptive capacity

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
acidic.coastal.cliffs	1.23	1	37.08	118.7	0	0	0	4	0			58.01	0	0	1	0	1	1	1
acidic.cst	98.81	0	230.75	654.96	1	0	0	58	1			150.74	1	0	1	0	1	1	1
acidic.scree	41,628.93	0	257.97	501.17	1	59	1	42	1			161.98	1	0	1	0	1	1	1
Alpine Grass/Herbfield_successional/degradedE1	0.00	1	37.31	42.05	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Alpine Grass/Herbfield_successional/degradedP1	5,540.02	0	147.78	314.49	1	7	1	8	0			46.07	0	0	0	0	0	0	0
Alpine Grass/Herbfield_successional/degradedP2	104.39	0	107.83	30.59	0	0	0	6	0			107.17	1	0	0	0	0	0	0
Alpine Grass/Herbfield_successional/degradedQ1	993.12	0	117.52	492	1	3	0	10	0			30.67	0	0	0	0	0	0	0
Alpine Grass/Herbfield_successional/degradedQ2	26.34	0	31.19	190.22	0	1	0	4	0			5.57	0	0	0	0	0	0	0
Alpine Grass/Herbfield_successional/degradedR1	7,629.19	0	189.1	292.11	1	8	1	11	0			53.66	0	0	0	0	0	0	0
Alpine Grass/Herbfield_successional/degradedT1	1,133.71	0	136.68	63.71	0	0	0	8	0			90.84	1	0	0	0	0	0	0
basic.cst	26.26	0	116.05	484.5	1	0	0	30	1			102.66	1	0	1	0	1	1	1
Braided river	287,351.85	0	141.5	654.81	1	275	1	124	1			94.60	1	1	1	1	1	1	1
Broadleaved Indigenous HardwoodsB3	0.84	1	49.26	142.31	1	0	0	4	0			19.77	0	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsE1	101.27	0	149.79	349.61	1	0	0	10	0			48.42	0	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsE4	4.78	0	12.98	21.89	0	0	0	2	0			82.24	1	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsF3	0.56	1	1.01	164.29	0	0	0	2	0			7.76	0	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsJ2	8.15	0	0	0	0	0	0	3	0			43.07	0	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsK1	7.07	0	9.3	0.66	0	0	0	2	0			0.70	0	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsN2	8.46	0	7.85	39.85	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsN4	48.04	0	111.19	504.32	1	0	0	10	0			31.15	0	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsNA	118.16	0	178.67	547.55	1	6	1	32	1			200.59	1	0	0	0	1	1	1
Broadleaved Indigenous HardwoodsP1	513.37	0	161.26	273.95	1	1	0	9	0			136.54	1	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsP2	15.97	0	50.24	155.12	1	0	0	4	0			84.02	1	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsP5	0.38	1	18.29	0.21	0	0	0	3	0			18.05	0	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsQ1	7.16	0	58.54	222.52	1	0	0	3	0			40.65	0	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsQ2	0.01	1	0	0	0	0	0	2	0			1.00	0	0	0	0	0	0	0
Broadleaved Indigenous HardwoodsR1	244.91	0	147.21	7.29	0	1	0	8	0			54.13	0	0	0	0	0	0	0
cave	1.92	0	55.05	50.01	0	0	0	8	0			114.98	1	0	1	0	1	1	1
Coastal wetland - Abandoned Channel	8.13	0	0	0	0	0	0	3	0			1.21	0	1	0	1	1	1	1
Coastal wetland - Backswamp	4.25	0	8.87	165.46	0	1	0	7	0			142.48	1	1	0	1	1	1	1
Coastal wetland - Basin	1.69	0	20.7	142.87	0	0	0	5	0			65.05	0	1	0	1	1	1	1
Coastal wetland - Channel	28.36	0	39.53	202.38	0	6	1	9	0			157.82	1	1	0	1	1	1	1
Coastal wetland - Coastal Lagoon	22,423.46	0	33.69	187.1	0	59	1	19	1			117.31	1	1	0	1	1	1	1
Coastal wetland - Creek	1.34	1	NA	NA	0	2	0	2	0			0.00	0	1	0	1	1	1	1
Coastal wetland - Depression	0.75	1	NA	NA	0	0	0	2	0			0.00	0	1	0	1	1	1	1
Coastal wetland - Donga	9.77	0	3.9	27.55	0	0	0	3	0			68.47	1	1	0	1	1	1	1
Coastal wetland - Drain	0.00	1	NA	NA	0	0	0	1	0			0.00	0	1	0	1	1	1	1
Coastal wetland - Dune slack	13.53	0	38.34	198.76	0	2	0	8	0			45.33	0	1	0	1	1	1	1
Coastal wetland - Estuary	306.96	0	27.67	300.52	0	23	1	17	1			171.37	1	1	0	1	1	1	1
Coastal wetland - Flat	137.36	0	22.21	235	0	13	1	7	0			122.98	1	1	0	1	1	1	1
Coastal wetland - Floodplain	506.22	0	31.18	187.1	0	21	1	15	1			102.04	1	1	0	1	1	1	1
Coastal wetland - Hapua	4.05	0	17.89	155.7	0	0	0	2	0			107.08	1	1	0	1	1	1	1

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Coastal wetland - Hollow	6.01	0	8.14	37.15	0	1	0	5	0			98.36	1	1	0	1	1	1	1
Coastal wetland - Lake shore	0.18	1	0	0	0	0	0	1	0			0.01	0	1	0	1	1	1	1
Coastal wetland - Levee	2.05	0	0	0	0	0	0	2	0			0.00	0	1	0	1	1	1	1
Coastal wetland - Marginal	0.43	1	0	0	0	0	0	2	0			0.00	0	1	0	1	1	1	1
Coastal wetland - Oxbow Lake	0.49	1	0	0	0	0	0	2	0			0.42	0	1	0	1	1	1	1
Coastal wetland - Pond	0.39	1	0	0	0	1	0	2	0			6.32	0	1	0	1	1	1	1
Coastal wetland - Riparian	11.06	0	26.92	155.7	0	0	0	11	0			81.72	1	1	0	1	1	1	1
Coastal wetland - Shore	117.19	0	20.12	138.44	0	12	1	5	0			113.36	1	1	0	1	1	1	1
Coastal wetland - Swale	61.19	0	20.84	159.1	0	9	1	10	0			106.42	1	1	0	1	1	1	1
Coastal wetland - Tidal river	0.26	1	0	0	0	0	0	1	0			0.00	0	1	0	1	1	1	1
Depleted Grassland_successional/degradedB3	0.27	1	NA	NA	0	0	0	2	0			0.00	0	0	0	0	1	1	1
Depleted Grassland_successional/degradedE1	47.50	0	81.52	219.23	1	0	0	10	0			54.31	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedE4	2,286.83	0	31.6	146.73	0	20	1	15	1			9.79	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedK1	0.04	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedK2	163.46	0	17.42	75.73	0	6	1	4	0			3.28	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedK3	24.90	0	39.48	112.59	0	0	0	6	0			27.89	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedK4	0.17	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedN3	3.21	0	11.06	195.58	0	1	0	4	0			27.64	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedN4	0.68	1	10.37	57.18	0	0	0	2	0			3.15	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedN5	0.00	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedN6	1.32	1	6.81	73.67	0	0	0	3	0			9.19	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedNA	76.48	0	75.77	685.41	1	0	0	14	1			67.51	0	0	0	0	1	1	1
Depleted Grassland_successional/degradedP1	757.18	0	127.54	340.57	1	0	0	6	0			69.61	1	0	0	0	0	0	0
Depleted Grassland_successional/degradedQ1	1,389.16	0	113.15	465.95	1	0	0	11	0			25.52	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedQ2	449.00	0	100.85	476.92	1	1	0	7	0			13.46	0	0	0	0	0	0	0
Depleted Grassland_successional/degradedR1	0.13	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
DunelandsB9	53.02	0	0	0	0	0	0	3	0			2.19	0	0	0	0	0	0	0
DunelandsJ2	499.70	0	11.78	84.53	0	26	1	5	0			47.05	0	0	0	0	0	0	0
Ephemeral wetlands	34.52	0	143.11	698.59	1	1	0	10	0			107.88	1	NA	1	NA	1	1	1
Fernland_successional/degradedB9	0.11	1	0	0	0	0	0	1	0			0.00	0	0	0	0	1	1	1
Fernland_successional/degradedE1	0.36	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Fernland_successional/degradedN1	0.07	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Fernland_successional/degradedNA	20.00	0	147.58	591.08	1	2	0	11	0			147.77	1	0	0	0	1	1	1
Fernland_successional/degradedQ1	2.06	0	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Gravel or RockB3	109.13	0	154.82	364.25	1	2	0	22	1			53.59	0	0	0	0	0	0	0
Gravel or RockB8	158.01	0	64.27	514.21	1	0	0	15	1			13.81	0	0	0	0	0	0	0
Gravel or RockB9	9.61	0	3.31	95.32	0	0	0	6	0			6.23	0	0	0	0	0	0	0
Gravel or RockE1	10,854.58	0	207.3	654.91	1	35	1	49	1			86.96	1	0	0	0	0	0	0
Gravel or RockE3	33.19	0	51.74	224.56	1	0	0	9	0			107.18	1	0	0	0	0	0	0
Gravel or RockE4	1,629.38	0	183.65	648.53	1	23	1	39	1			86.28	1	0	0	0	0	0	0
Gravel or RockF2	29.72	0	12.32	141.23	0	0	0	5	0			9.27	0	0	0	0	1	0	1
Gravel or RockF3	0.75	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Gravel or RockJ2	107.73	0	213.17	434.45	1	3	0	22	1			85.32	1	0	0	0	0	0	0
Gravel or RockJ3	11.16	0	48.98	474.93	1	0	0	10	0			22.29	0	0	0	0	0	0	0
Gravel or RockK1	802.98	0	188.41	356.08	1	13	1	29	1			77.19	1	0	0	0	0	0	0
Gravel or RockK2	230.43	0	84.3	414.91	1	0	0	12	0			125.15	1	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Gravel or RockK3	182.17	0	145.5	503.63	1	5	0	21	1			68.71	1	0	0	0	0	0	0
Gravel or RockK4	8.01	0	45.79	206.74	0	0	0	9	0			62.09	0	0	0	0	0	0	0
Gravel or RockL1	14.28	0	66.21	456.13	1	0	0	12	0			47.92	0	0	0	0	0	0	0
Gravel or RockM2	3.69	0	25.33	0.7	0	0	0	6	0			0.00	0	0	0	0	0	1	1
Gravel or RockN1	21.25	0	65.92	238.92	1	0	0	13	1			41.76	0	0	0	0	0	0	0
Gravel or RockN2	76.09	0	96.15	547.03	1	2	0	27	1			67.43	0	0	0	0	0	0	0
Gravel or RockN3	129.43	0	89.56	566.18	1	1	0	21	1			23.29	0	0	0	0	0	0	0
Gravel or RockN4	953.22	0	117.65	424.15	1	10	1	17	1			13.40	0	0	0	0	0	0	0
Gravel or RockN5	4.86	0	53.47	80.13	0	0	0	4	0			16.99	0	0	0	0	0	0	0
Gravel or RockN6	100.98	0	63.35	293.53	1	3	0	7	0			35.66	0	0	0	0	0	0	0
Gravel or RockNA	384.40	0	220	707.81	1	7	1	70	1			132.33	1	0	0	0	1	1	1
Gravel or RockO1	10.97	0	51.15	1.4	0	0	0	10	0			1.42	0	0	0	0	0	0	0
Gravel or RockO2	3.14	0	27.1	0.17	0	0	0	7	0			3.13	0	0	0	0	1	0	1
Gravel or RockP1	220,625.49	0	240.84	489.01	1	181	1	42	1			177.10	1	0	0	0	0	0	0
Gravel or RockP2	15,926.09	0	150.57	189.69	1	29	1	21	1			62.61	0	0	0	0	0	0	0
Gravel or RockP5	28.41	0	114.19	120.72	0	1	0	18	1			154.61	1	0	0	0	0	0	0
Gravel or RockQ1	16,377.93	0	136.48	637.82	1	23	1	17	1			52.03	0	0	0	0	0	0	0
Gravel or RockQ2	1,148.91	0	126.84	575.96	1	3	0	23	1			61.01	0	0	0	0	0	0	0
Gravel or RockR1	39,307.39	0	198.88	292.11	1	62	1	31	1			80.58	1	0	0	0	0	0	0
Gravel or RockT1	6,866.78	0	197.07	73.47	0	26	1	24	1			42.81	0	0	0	0	0	0	0
Hall's totara-miro-rimu/kamahi-silver beech-southern rata forest_successional/degradedF3	3.70	0	13.98	70.91	0	0	0	3	0			3.89	0	0	0	0	0	0	0
Hall's totara-miro-rimu/kamahi-silver beech-southern rata forestF3	25.98	0	4.39	171.51	0	1	0	3	0			5.99	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedO1	35.29	0	0	0	0	0	0	8	0			0.66	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedO2	11.19	0	41.02	1.57	0	0	0	6	0			1.71	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedP2	41.21	0	35.25	0.18	0	0	0	2	0			1.80	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedP5	7.40	0	88.82	0.57	0	0	0	4	0			3.72	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedQ1	3.31	0	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedQ2	2.69	0	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forest_successional/degradedR1	691.34	0	150.24	10.36	0	13	1	14	1			22.37	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forestO1	1.71	0	0	0	0	0	0	5	0			0.38	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forestO2	6.07	0	0	0	0	0	0	3	0			0.00	0	0	0	0	1	1	1
Hall's totara-miro/kamahi-southern rata broadleaf forestP2	19.04	0	0	0	0	1	0	2	0			0.33	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forestP5	17.30	0	42.66	0.63	0	0	0	6	0			4.95	0	0	0	0	0	0	0
Hall's totara-miro/kamahi-southern rata broadleaf forestR1	2,322.75	0	107.69	1.69	0	53	1	16	1			11.14	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedB3	116.00	0	144.52	529.55	1	0	0	21	1			75.00	1	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedB8	5.06	0	75.85	171.07	1	0	0	3	0			0.06	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedE1	28,790.74	0	208.5	580.39	1	57	1	33	1			161.75	1	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedE3	380.12	0	71.61	332.97	1	0	0	15	1			53.62	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedE4	39,730.24	0	151.92	639.84	1	94	1	49	1			55.84	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedF3	239.27	0	21.97	328.79	0	12	1	6	0			14.28	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedJ2	339.09	0	173.89	379.45	1	7	1	16	1			47.57	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedK1	1,107.02	0	135.04	307.97	1	18	1	15	1			86.26	1	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedK2	98.17	0	70.97	341.18	1	0	0	9	0			150.86	1	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedK3	757.33	0	82.17	449.64	1	5	0	14	1			113.72	1	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Hall's totara/broadleaf forest_successional/degradedK4	0.26	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedL1	0.37	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedM2	47.33	0	37.23	0.7	0	2	0	3	0			0.95	0	0	0	0	0	1	1
Hall's totara/broadleaf forest_successional/degradedN1	2.97	0	23.44	72.85	0	0	0	4	0			46.27	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedN2	70.68	0	30.89	296.35	0	0	0	6	0			24.88	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedN3	985.26	0	84.09	557.42	1	0	0	18	1			34.26	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedN4	5.46	0	97.59	298.87	1	0	0	5	0			37.52	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedN5	0.04	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	1	1
Hall's totara/broadleaf forest_successional/degradedN6	0.00	1	5.25	14.12	0	0	0	2	0			14.82	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedNA	0.96	1	0	0	0	0	0	2	0			0.00	0	0	0	0	1	1	1
Hall's totara/broadleaf forest_successional/degradedO1	92.74	0	88.82	0.12	0	2	0	10	0			4.54	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedO2	7.86	0	41.02	1.4	0	0	0	6	0			0.38	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedP1	53,522.42	0	167.35	490.05	1	67	1	30	1			71.85	1	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedP2	266.97	0	94.23	14.14	0	6	1	6	0			27.92	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedP5	94.54	0	125.87	11.64	0	8	1	9	0			41.54	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedQ1	22,122.50	0	135.97	547.99	1	29	1	18	1			54.01	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedQ2	103,850.96	0	159.53	628.59	1	73	1	36	1			51.12	0	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedQ4	0.62	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	1	1
Hall's totara/broadleaf forest_successional/degradedR1	928.97	0	152.05	11.67	0	11	1	13	1			130.62	1	0	0	0	0	0	0
Hall's totara/broadleaf forest_successional/degradedT1	1.14	1	0	0	0	0	0	5	0			0.77	0	0	0	0	0	0	0
Hall's totara/broadleaf forestB3	1.08	1	0	0	0	0	0	2	0			0.78	0	0	0	0	0	0	0
Hall's totara/broadleaf forestE1	3,228.76	0	201.32	461.67	1	18	1	21	1			140.15	1	0	0	0	0	0	0
Hall's totara/broadleaf forestE3	630.68	0	69.74	249.2	1	2	0	12	0			23.12	0	0	0	0	0	0	0
Hall's totara/broadleaf forestE4	525.02	0	145	513.29	1	4	0	17	1			90.95	1	0	0	0	0	0	0
Hall's totara/broadleaf forestF3	760.05	0	21.97	328.79	0	20	1	7	0			14.36	0	0	0	0	0	0	0
Hall's totara/broadleaf forestJ2	1.68	0	61.96	194.08	1	0	0	4	0			36.12	0	0	0	0	0	0	0
Hall's totara/broadleaf forestK1	129.66	0	121.85	140.48	1	0	0	11	0			17.94	0	0	0	0	0	0	0
Hall's totara/broadleaf forestK3	30.10	0	81.15	243.44	1	0	0	7	0			51.44	0	0	0	0	0	0	0
Hall's totara/broadleaf forestM2	171.45	0	27.1	0.7	0	2	0	12	0			1.89	0	0	0	0	0	1	1
Hall's totara/broadleaf forestN1	0.13	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	1	1
Hall's totara/broadleaf forestN2	13.91	0	8.44	253.56	0	0	0	6	0			12.19	0	0	0	0	0	0	0
Hall's totara/broadleaf forestN3	463.73	0	54.56	431.3	1	0	0	12	0			16.93	0	0	0	0	0	0	0
Hall's totara/broadleaf forestNA	0.15	1	0	0	0	0	0	2	0			0.00	0	0	0	0	1	1	1
Hall's totara/broadleaf forestO1	16.22	0	0	0	0	1	0	7	0			0.15	0	0	0	0	0	0	0
Hall's totara/broadleaf forestO2	12.02	0	41.02	1.57	0	0	0	8	0			1.82	0	0	0	0	0	0	0
Hall's totara/broadleaf forestP1	4,033.63	0	149.26	490.05	1	11	1	16	1			38.49	0	0	0	0	0	0	0
Hall's totara/broadleaf forestP2	314.69	0	94.23	2.61	0	3	0	10	0			24.63	0	0	0	0	0	0	0
Hall's totara/broadleaf forestP5	78.83	0	154.17	306.35	1	0	0	8	0			140.21	1	0	0	0	0	0	0
Hall's totara/broadleaf forestQ1	32.57	0	112.06	166.37	1	0	0	5	0			75.62	1	0	0	0	0	0	0
Hall's totara/broadleaf forestQ2	8,653.82	0	156.07	494.94	1	39	1	17	1			95.13	1	0	0	0	0	0	0
Hall's totara/broadleaf forestQ4	8.34	0	16.42	47.1	0	0	0	6	0			1.82	0	0	0	0	0	0	0
Hall's totara/broadleaf forestR1	1,557.31	0	123.98	3.45	0	8	1	17	1			25.89	0	0	0	0	0	0	0
Hall's totara/silver-beech-kamahi-southern rata forest_successional/degradedE3	11.94	0	5.57	95.88	0	0	0	3	0			9.30	0	0	0	0	0	0	0
Hall's totara/silver-beech-kamahi-southern rata forest_successional/degradedP2	237.10	0	70.96	2.06	0	5	0	4	0			10.50	0	0	0	0	0	0	0
Hall's totara/silver-beech-kamahi-southern rata forest_successional/degradedQ1	3,241.05	0	84.73	284.09	1	1	0	2	0			18.39	0	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Hall's totara/silver-beech-kamahi-southern rata forest_successional/degradedQ2	384.58	0	84.73	185.18	1	0	0	3	0			19.86	0	0	0	0	0	0	0
Hall's totara/silver-beech-kamahi-southern rata forest_successional/degradedR1	942.48	0	95.79	2.07	0	2	0	10	0			19.27	0	0	0	0	0	0	0
Hall's totara/silver-beech-kamahi-southern rata forestP2	101.20	0	70.96	1.63	0	0	0	3	0			13.33	0	0	0	0	0	0	0
Hall's totara/silver-beech-kamahi-southern rata forestP5	4.87	0	52.36	0.62	0	0	0	4	0			3.66	0	0	0	0	0	0	0
Hall's totara/silver-beech-kamahi-southern rata forestQ1	2.61	0	26.96	12.95	0	0	0	2	0			3.97	0	0	0	0	0	0	0
Hall's totara/silver-beech-kamahi-southern rata forestR1	1,717.75	0	76.61	2.06	0	7	1	10	0			32.06	0	0	0	0	0	0	0
Herbaceous Freshwater VegetationB3	7.32	0	86.14	64.72	0	0	0	3	0			85.06	1	1	0	0	0	0	0
Herbaceous Freshwater VegetationB8	0.59	1	1.89	301.09	0	0	0	4	0			29.14	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationB9	2.91	0	0	0	0	0	0	3	0			0.00	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationE1	28.73	0	118.17	516.89	1	1	0	15	1			103.81	1	1	0	0	0	0	0
Herbaceous Freshwater VegetationE3	46.45	0	61.11	86.62	0	0	0	7	0			32.97	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationE4	1,345.50	0	111.35	523.55	1	16	1	27	1			134.73	1	1	0	0	0	0	0
Herbaceous Freshwater VegetationI3	130.11	0	13.2	136.86	0	8	1	4	0			35.75	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationI4	0.52	1	0	0	0	0	0	2	0			0.00	0	1	0	0	0	1	1
Herbaceous Freshwater VegetationJ2	238.64	0	169.46	332.15	1	5	0	18	1			90.29	1	1	0	0	0	0	0
Herbaceous Freshwater VegetationJ3	6.55	0	1.4	42.39	0	0	0	6	0			0.65	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationK1	228.19	0	103.35	351.48	1	1	0	15	1			66.59	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationK2	9.44	0	8.02	44.31	0	0	0	1	0			5.55	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationK3	35.42	0	21.69	289.36	0	2	0	11	0			52.26	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationK4	1,430.42	0	98.97	498.29	1	16	1	20	1			229.19	1	1	0	0	0	0	0
Herbaceous Freshwater VegetationL1	15.74	0	59.79	174.25	1	0	0	6	0			43.68	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationL2	17.52	0	0	0	0	0	0	2	0			0.00	0	1	0	0	0	1	1
Herbaceous Freshwater VegetationN1	189.17	0	78.17	344	1	35	1	12	0			119.24	1	1	0	0	0	0	0
Herbaceous Freshwater VegetationN2	82.75	0	101.12	484.2	1	1	0	13	1			65.72	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationN3	64.81	0	86	503.43	1	1	0	10	0			37.81	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationN4	10.40	0	97.38	281.14	1	0	0	7	0			37.18	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationN5	17.59	0	46.55	176.61	0	5	0	4	0			20.14	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationN6	38.91	0	86.84	293.31	1	0	0	8	0			28.27	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationN7	266.89	0	33.35	178.64	0	5	0	8	0			19.59	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationNA	62.23	0	185.31	673.72	1	9	1	22	1			148.13	1	1	0	0	1	1	1
Herbaceous Freshwater VegetationP1	82.50	0	36.26	214.09	0	0	0	4	0			56.51	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationP5	15.37	0	0	0	0	0	0	1	0			0.07	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationQ1	716.01	0	78.26	513.66	1	1	0	7	0			14.93	0	1	0	0	0	0	0
Herbaceous Freshwater VegetationQ2	38.80	0	61.61	201.78	1	0	0	6	0			36.56	0	1	0	0	0	0	0
Herbaceous Saline Vegetation	268.37	0	94	214.49	1	11	1	16	1			121.77	1	1	0	0	1	1	1
Indigenous ForestE1	276.31	0	184.75	297.92	1	0	0	11	0			80.51	1	0	0	0	0	0	0
Indigenous ForestE4	356.21	0	116.26	296.77	1	1	0	11	0			46.27	0	0	0	0	0	0	0
Indigenous ForestK1	39.99	0	70.77	123.49	0	0	0	6	0			77.41	1	0	0	0	0	0	0
Indigenous ForestK4	1.03	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Indigenous ForestN6	3.12	0	25.79	134.55	0	0	0	2	0			32.60	0	0	0	0	0	0	0
Indigenous ForestN8	0.30	1	0	0	0	0	0	3	0			0.00	0	0	0	0	0	0	0
Indigenous ForestNA	301.51	0	184.75	461.7	1	13	1	23	1			69.90	1	0	0	0	1	1	1
Indigenous ForestP1	36,277.93	0	195.15	372.33	1	57	1	21	1			69.98	1	0	0	0	0	0	0
Indigenous ForestP2	2,388.18	0	139.07	173.5	1	6	1	11	0			46.34	0	0	0	0	0	0	0
Indigenous ForestP3	0.00	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Indigenous ForestP5	11.66	0	88.82	54.93	0	0	0	11	0			126.38	1	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: Iwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Indigenous ForestQ2	1.44	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Indigenous ForestR1	6,019.23	0	147.08	63.71	0	11	1	15	1			35.70	0	0	0	0	0	0	0
Indigenous ForestT1	172.69	0	126.82	28.24	0	2	0	20	1			47.31	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedB3	290.09	0	39.22	265.86	0	1	0	7	0			30.45	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedB6	1.54	1	0.13	24.74	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedB7	0.87	1	0	0	0	0	0	3	0			1.12	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedB8	551.01	0	46.86	388.75	0	2	0	11	0			12.98	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedE1	645.57	0	125.38	561.93	1	5	0	17	1			31.55	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedF2	39.45	0	26.26	128.13	0	0	0	6	0			22.07	0	0	0	0	1	0	1
Kahikatea-matai/tawa-mahoe forest_successional/degradedF3	3,098.77	0	26.38	348.32	0	58	1	10	0			12.36	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedJ2	10.29	0	15.25	275.03	0	0	0	4	0			13.86	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedJ3	9.85	0	19.91	64.11	0	0	0	7	0			27.18	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedK1	12.98	0	107.19	305.21	1	0	0	6	0			17.54	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedK3	17.73	0	91.02	106.73	0	1	0	4	0			4.81	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedN1	20.05	0	24.38	202.34	0	0	0	6	0			38.52	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedN2	0.21	1	0	0	0	0	0	3	0			0.08	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forest_successional/degradedQ2	0.01	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forestB3	147.53	0	29.56	263.67	0	0	0	10	0			33.69	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forestB6	0.76	1	8.92	95.53	0	0	0	3	0			50.88	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forestB8	135.26	0	16.61	333.12	0	1	0	7	0			13.76	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forestE1	392.67	0	48.67	561.93	1	7	1	9	0			19.66	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forestE3	1.60	1	0	0	0	1	0	1	0			0.16	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forestF2	33.97	0	10.32	128.13	0	0	0	4	0			3.75	0	0	0	0	1	0	1
Kahikatea-matai/tawa-mahoe forestF3	3,797.74	0	26.38	348.32	0	86	1	11	0			16.86	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forestJ2	26.74	0	19.79	275.03	0	6	1	3	0			15.99	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forestJ3	0.93	1	0	0	0	0	0	3	0			0.18	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forestK3	0.33	1	0	0	0	0	0	2	0			0.10	0	0	0	0	1	0	1
Kahikatea-matai/tawa-mahoe forestN1	45.30	0	35.65	193.49	0	0	0	7	0			17.81	0	0	0	0	0	0	0
Kahikatea-matai/tawa-mahoe forestN2	4.02	0	25.1	34.2	0	0	0	3	0			1.38	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedB3	741.95	0	84.59	287.24	1	4	0	17	1			40.87	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedB6	4.21	0	2.31	26.91	0	0	0	2	0			0.86	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedB7	80.92	0	2.53	385.02	0	2	0	6	0			8.32	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedB8	711.47	0	46.99	388.75	0	4	0	10	0			14.42	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedB9	3.84	0	7.39	186.37	0	0	0	4	0			4.01	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedE1	205.57	0	45.44	322.75	0	0	0	9	0			34.84	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedF2	21.98	0	0.07	21.06	0	2	0	2	0			4.11	0	0	0	0	1	0	1
Kahikatea-pukatea-tawa forest_successional/degradedF3	202.60	0	26.38	311.76	0	17	1	4	0			10.78	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedI3	0.00	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedJ2	1.23	1	17.11	120.63	0	0	0	3	0			14.84	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedJ3	183.99	0	21.71	363.31	0	0	0	10	0			29.90	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedN1	147.06	0	50.03	217.1	1	0	0	9	0			24.34	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedN3	1.10	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forest_successional/degradedNA	0.27	1	0	0	0	0	0	2	0			0.00	0	0	0	0	1	1	1
Kahikatea-pukatea-tawa forestB3	393.62	0	74.35	217.1	1	14	1	12	0			34.01	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forestB6	2.46	0	26.82	128.3	0	0	0	3	0			31.48	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forestB7	37.17	0	0.39	68.41	0	2	0	4	0			14.12	0	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Kahikatea-pukatea-tawa forestB8	356.73	0	31.36	354.02	0	9	1	13	1			22.04	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forestB9	2.55	0	1.39	36.88	0	0	0	3	0			5.76	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forestE1	165.89	0	20.16	307.99	0	7	1	8	0			27.39	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forestF2	9.56	0	1.56	49.3	0	1	0	3	0			1.44	0	0	0	0	1	0	1
Kahikatea-pukatea-tawa forestF3	153.16	0	26.38	267.8	0	18	1	7	0			20.31	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forestJ2	21.12	0	62.12	162.05	1	2	0	4	0			55.32	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forestJ3	106.39	0	22.5	317.55	0	1	0	10	0			28.53	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forestN1	156.04	0	40.54	208.3	0	1	0	8	0			38.95	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forestN3	0.00	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Kahikatea-pukatea-tawa forestNA	0.03	1	0	0	0	0	0	1	0			0.00	0	0	0	0	1	1	1
Kahikatea-totara forest_successional/degradedB3	6.11	0	26.55	93.66	0	0	0	6	0			20.34	0	0	0	0	0	0	0
Kahikatea-totara forest_successional/degradedE4	2.58	0	13.18	174.64	0	0	0	6	0			23.27	0	0	0	0	0	0	0
Kahikatea-totara forest_successional/degradedJ2	0.73	1	32.66	65.41	0	0	0	4	0			98.08	1	0	0	0	0	0	0
Kahikatea-totara forest_successional/degradedN1	11.13	0	28.54	123.64	0	0	0	7	0			18.17	0	0	0	0	0	0	0
Kahikatea-totara forest_successional/degradedN2	0.58	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Kahikatea-totara forest_successional/degradedN3	1.83	0	18.31	258.83	0	0	0	4	0			39.15	0	0	0	0	0	0	0
Kahikatea-totara forestI3	1.43	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	1	1
Kahikatea-totara forestJ2	6.92	0	9.57	98.66	0	0	0	4	0			68.56	1	0	0	0	0	0	0
Kahikatea-totara forestN1	1.24	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Kahikatea-totara forestN3	2.50	0	6.18	16.97	0	0	0	4	0			4.01	0	0	0	0	0	0	0
Kahikatea-totara forestNA	0.00	1	0	0	0	0	0	1	0			0.00	0	0	0	0	1	1	1
Kauri/taraire-kohekohe-tawa forest_successional/degradedF3	0.50	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Lake margin wetlands	10,294.89	0	204.21	679.93	1	92	1	86	1			124.89	1	1	1	1	1	1	1
Lake or Pond	46,224.01	0	254.57	710.99	1	141	1	116	1			175.90	1	1	1	1	1	1	1
Landslide_successional/degradedB3	0.20	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Landslide_successional/degradedE1	0.08	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Landslide_successional/degradedNA	4.53	0	155.67	352	1	0	0	9	0			121.86	1	0	0	0	1	1	1
Landslide_successional/degradedP1	14.75	0	73.05	67.47	0	0	0	2	0			35.33	0	0	0	0	0	0	0
Landslide_successional/degradedQ1	19.54	0	61.94	259.18	1	0	0	4	0			26.06	0	0	0	0	0	0	0
Landslide_successional/degradedQ2	0.36	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Landslide_successional/degradedR1	0.04	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	1	1
limestone.coastal.cliffs	1.59	1	40.77	105.06	0	3	0	6	0			147.91	1	0	1	0	1	1	1
limestone.cst	53.28	0	142.97	578.86	1	1	0	36	1			113.32	1	0	1	0	1	1	1
Manuka and/or Kanuka_successional/degradedB3	1.06	1	47.29	162.31	1	0	0	5	0			71.36	1	0	0	0	0	0	0
Manuka and/or Kanuka_successional/degradedB7	0.32	1	0	0	0	0	0	3	0			0.00	0	0	0	0	1	0	1
Manuka and/or Kanuka_successional/degradedB8	0.06	1	25.41	119.24	0	0	0	1	0			2.37	0	0	0	0	0	0	0
Manuka and/or Kanuka_successional/degradedE1	37.33	0	147.77	346.81	1	0	0	13	1			70.81	1	0	0	0	0	0	0
Manuka and/or Kanuka_successional/degradedE4	1.80	0	76.46	375.52	1	0	0	3	0			114.50	1	0	0	0	0	0	0
Manuka and/or Kanuka_successional/degradedF1	0.02	1	NA	NA	0	0	0	2	0			0.00	0	0	0	0	1	1	1
Manuka and/or Kanuka_successional/degradedF3	0.93	1	0	0	0	0	0	2	0			7.24	0	0	0	0	0	0	0
Manuka and/or Kanuka_successional/degradedJ2	0.02	1	NA	NA	0	0	0	1	0			0.00	0	0	0	0	1	1	1
Manuka and/or Kanuka_successional/degradedJ3	1.90	0	0.89	15.48	0	0	0	4	0			7.87	0	0	0	0	0	0	0
Manuka and/or Kanuka_successional/degradedK1	0.12	1	27.78	154.11	0	0	0	3	0			68.50	1	0	0	0	0	0	0
Manuka and/or Kanuka_successional/degradedK4	0.06	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	1	1
Manuka and/or Kanuka_successional/degradedNA	396.21	0	159.53	654.9	1	7	1	36	1			76.83	1	0	0	0	1	1	1
Manuka and/or Kanuka_successional/degradedP1	11.17	0	65.32	43.72	0	0	0	6	0			50.06	0	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: Iwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Manuka and/or Kanuka_successional/degradedQ1	17.00	0	56.37	446.26	1	0	0	4	0			19.25	0	0	0	0	0	0	0
Manuka and/or Kanuka_successional/degradedQ2	3.81	0	56.37	446.26	1	0	0	3	0			17.37	0	0	0	0	0	0	0
Manuka and/or Kanuka_successional/degradedT1	8.21	0	98.95	0.65	0	0	0	7	0			9.37	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedB8	0.69	1	21.31	87.74	0	0	0	6	0			9.02	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedE1	4.52	0	111.48	249.82	1	0	0	10	0			93.22	1	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedE3	0.00	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedE4	8.43	0	105.71	499.36	1	0	0	7	0			109.92	1	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedJ2	0.02	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedK1	4.33	0	48.35	251.59	1	1	0	5	0			68.11	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedK2	0.05	1	5.86	127.94	0	0	0	2	0			0.90	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedK3	28.37	0	25.19	340.65	0	2	0	5	0			62.45	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedM2	0.60	1	27.1	0.17	0	0	0	1	0			0.32	0	0	0	0	1	1	1
Matagouri or Grey Scrub_successional/degradedN2	12.85	0	34.8	132.1	0	0	0	3	0			27.25	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedN3	0.00	1	0	0	0	0	0	2	0			0.41	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedN4	1.80	0	33.47	161.26	0	0	0	3	0			3.93	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedNA	96.90	0	182.76	707.78	1	4	0	28	1			141.87	1	0	0	0	1	1	1
Matagouri or Grey Scrub_successional/degradedP1	0.00	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedQ1	203.51	0	101.83	429.38	1	0	0	6	0			23.69	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedQ2	151.67	0	98.72	391.02	1	0	0	9	0			19.77	0	0	0	0	0	0	0
Matagouri or Grey Scrub_successional/degradedT1	2.36	0	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedB3	1,277.86	0	145.48	371.34	1	5	0	25	1			51.81	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedB8	397.24	0	63.62	514.21	1	1	0	11	0			19.45	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedB9	51.87	0	23.73	23.55	0	0	0	4	0			0.00	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedE1	2,400.94	0	174.98	424.78	1	5	0	36	1			96.25	1	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedE3	7.20	0	71.83	85.36	0	0	0	6	0			76.62	1	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedE4	758.78	0	131.66	319.72	1	6	1	21	1			26.51	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedF2	0.07	1	0	0	0	0	0	2	0			0.00	0	0	0	0	1	1	1
Matai-kahikatea-totara forest_successional/degradedF3	429.39	0	24.81	342.79	0	11	1	6	0			11.58	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedI3	0.54	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedJ2	121.33	0	154.34	295.43	1	0	0	16	1			35.56	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedJ3	197.64	0	29.66	301.04	0	2	0	11	0			7.24	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedK1	262.71	0	100.5	316.69	1	2	0	10	0			40.58	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedK2	220.23	0	134.56	225.22	1	0	0	10	0			202.55	1	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedK3	43.89	0	90.32	164.44	1	0	0	9	0			14.15	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedL1	8.69	0	23.6	257.68	0	0	0	4	0			38.84	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedN1	95.77	0	60.34	217.1	1	0	0	11	0			41.21	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedN2	104.35	0	49.39	341.11	1	0	0	18	1			55.14	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedN3	869.15	0	55.3	466.75	1	5	0	20	1			55.11	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedN4	2.39	0	46.78	150.25	0	0	0	5	0			5.84	0	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedNA	8.71	0	48.45	571.54	1	0	0	12	0			45.40	0	0	0	0	1	1	1
Matai-kahikatea-totara forest_successional/degradedQ2	623.47	0	82.85	419.72	1	1	0	15	1			73.21	1	0	0	0	0	0	0
Matai-kahikatea-totara forest_successional/degradedQ4	17.35	0	12.59	294.09	0	0	0	4	0			26.52	0	0	0	0	0	1	1
Matai-kahikatea-totara forestB3	92.31	0	70.75	258.51	1	0	0	20	1			67.26	0	0	0	0	0	0	0
Matai-kahikatea-totara forestB6	0.00	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	1	1
Matai-kahikatea-totara forestB8	10.28	0	61.57	283.84	1	0	0	6	0			216.37	1	0	0	0	0	0	0
Matai-kahikatea-totara forestE1	293.55	0	131.98	455.17	1	1	0	13	1			57.78	0	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Matai-kahikatea-totara forestE3	39.30	0	45.05	133.34	0	1	0	12	0			73.57	1	0	0	0	0	0	0
Matai-kahikatea-totara forestE4	37.04	0	94.33	273.83	1	0	0	12	0			21.00	0	0	0	0	0	0	0
Matai-kahikatea-totara forestF3	399.23	0	26.38	328.79	0	19	1	6	0			17.32	0	0	0	0	0	0	0
Matai-kahikatea-totara forestJ2	31.51	0	62.1	173.65	1	12	1	11	0			63.62	0	0	0	0	0	0	0
Matai-kahikatea-totara forestJ3	133.28	0	37.24	212.95	0	1	0	5	0			6.34	0	0	0	0	0	0	0
Matai-kahikatea-totara forestK1	10.14	0	44	127.29	0	0	0	4	0			8.24	0	0	0	0	0	0	0
Matai-kahikatea-totara forestK3	8.29	0	6.51	164.44	0	0	0	4	0			14.55	0	0	0	0	0	0	0
Matai-kahikatea-totara forestL1	24.38	0	30.78	217.58	0	2	0	7	0			19.41	0	0	0	0	0	0	0
Matai-kahikatea-totara forestN1	182.24	0	50.98	249.6	1	0	0	13	1			35.27	0	0	0	0	0	0	0
Matai-kahikatea-totara forestN2	254.92	0	57.97	273.14	1	5	0	24	1			101.26	1	0	0	0	0	0	0
Matai-kahikatea-totara forestN3	584.22	0	53.83	343.66	1	1	0	18	1			29.25	0	0	0	0	0	0	0
Matai-kahikatea-totara forestNA	2.92	0	36.07	125.33	0	0	0	6	0			119.32	1	0	0	0	1	1	1
Matai-kahikatea-totara forestQ2	241.50	0	80.52	302.95	1	8	1	13	1			27.10	0	0	0	0	0	0	0
Matai-kahikatea-totara forestQ4	0.01	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedB8	8.31	0	1.76	161.25	0	1	0	1	0			4.49	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedE1	374.78	0	185.06	372.29	1	1	0	17	1			132.58	1	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedE3	48.29	0	58.95	211.06	1	0	0	6	0			17.39	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedE4	1,160.67	0	119.37	514.41	1	4	0	12	0			117.83	1	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedF3	1,047.40	0	26.18	348.32	0	25	1	6	0			11.82	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedJ3	6.46	0	0	0	0	0	0	3	0			0.10	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedK1	769.40	0	96.45	140.49	1	1	0	8	0			14.07	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedK3	1.50	1	19.74	117.53	0	0	0	2	0			7.84	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedL1	18.63	0	0	0	0	0	0	7	0			0.03	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedN2	46.51	0	116.04	159.7	1	0	0	5	0			32.46	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedN3	889.86	0	57.32	476.31	1	3	0	15	1			45.45	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedP1	0.17	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedQ2	1,241.54	0	81.52	410.75	1	1	0	15	1			23.47	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forest_successional/degradedQ4	76.49	0	31.18	294.09	0	1	0	6	0			16.95	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestB3	0.08	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestB8	1.48	1	0	0	0	0	0	1	0			0.64	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestE1	250.82	0	186.55	461.67	1	4	0	15	1			111.52	1	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestE3	179.84	0	41.86	211.46	0	1	0	9	0			23.20	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestE4	83.29	0	96.45	307.97	1	0	0	7	0			54.39	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestF3	2,066.89	0	26.38	348.32	0	46	1	7	0			11.54	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestK1	9.12	0	84.13	46.66	0	0	0	3	0			7.24	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestK3	1.84	0	6.51	1.87	0	0	0	3	0			0.21	0	0	0	0	1	0	1
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestL1	2.46	0	43.4	37.38	0	0	0	6	0			12.75	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestN1	0.56	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestN2	8.12	0	7.12	208.15	0	0	0	6	0			17.22	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestN3	1,057.85	0	71.09	341.88	1	8	1	15	1			46.41	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestO1	0.68	1	0	0	0	0	0	5	0			0.00	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestP1	0.00	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestP5	0.78	1	0	0	0	0	0	3	0			0.09	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestQ2	1,224.96	0	91.62	439.31	1	13	1	16	1			24.96	0	0	0	0	0	0	0
Matai-totara-kahikatea-rimu/broadleaf-fuchsia forestQ4	42.16	0	23.67	60.32	0	0	0	6	0			4.25	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedB3	8,002.84	0	101.47	316.05	1	14	1	23	1			29.64	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedB7	0.72	1	NA	NA	0	0	0	2	0			0.00	0	0	0	0	1	1	1
Matai-totara/black/mountain beech forest_successional/degradedB8	2,172.57	0	46.99	386.94	0	11	1	11	0			10.21	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedE1	21,169.22	0	142.97	587.08	1	42	1	27	1			35.19	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedE3	139.15	0	26.45	73.3	0	1	0	5	0			21.54	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedE4	13.95	0	40.44	446.65	0	1	0	6	0			55.82	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedF2	1,140.26	0	26.62	151.75	0	6	1	5	0			6.16	0	0	0	0	1	0	1
Matai-totara/black/mountain beech forest_successional/degradedF3	17.27	0	5.43	297.76	0	0	0	4	0			8.77	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedI4	0.03	1	NA	NA	0	0	0	1	0			0.00	0	0	0	0	1	1	1
Matai-totara/black/mountain beech forest_successional/degradedJ2	11.06	0	26.4	208.39	0	0	0	6	0			41.97	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedJ3	24.82	0	26.43	326.79	0	1	0	10	0			18.49	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedK1	0.63	1	59.66	13.27	0	0	0	4	0			7.40	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedN1	281.94	0	81.07	227.54	1	0	0	11	0			30.31	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedN2	0.21	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedNA	0.15	1	0	0	0	0	0	3	0			0.00	0	0	0	0	1	1	1
Matai-totara/black/mountain beech forest_successional/degradedP1	2.78	0	91.45	33.83	0	0	0	3	0			6.71	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedP2	4.78	0	71.15	5.8	0	1	0	3	0			4.32	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedP5	0.80	1	0	0	0	0	0	3	0			0.00	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forest_successional/degradedR1	4.53	0	48.47	0.76	0	0	0	1	0			7.06	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestB3	3,287.50	0	87.45	311.12	1	21	1	22	1			35.15	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestB8	535.97	0	46.99	388.75	0	1	0	11	0			6.78	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestE1	12,679.70	0	142.6	654.54	1	58	1	29	1			57.07	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestE3	511.72	0	47.55	127.04	0	7	1	12	0			33.42	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestE4	0.68	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestF2	315.72	0	26.62	151.75	0	7	1	6	0			6.65	0	0	0	0	1	0	1
Matai-totara/black/mountain beech forestF3	19.32	0	3.97	297.76	0	2	0	4	0			3.79	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestJ2	2.73	0	37	241.43	0	0	0	5	0			29.90	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestJ3	33.21	0	26.26	119.6	0	3	0	6	0			15.67	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestK1	6.43	0	71.45	0.36	0	0	0	7	0			3.71	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestN1	249.63	0	50.75	217.1	1	0	0	11	0			30.50	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestN2	36.56	0	33.84	89.01	0	0	0	8	0			26.16	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestN3	0.88	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestNA	0.03	1	0	0	0	0	0	1	0			0.00	0	0	0	0	1	1	1
Matai-totara/black/mountain beech forestP1	82.34	0	93.26	34.55	0	0	0	7	0			16.60	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestP2	4.07	0	51.74	31.96	0	0	0	2	0			4.88	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestP5	9.12	0	71.45	0.36	0	0	0	8	0			5.85	0	0	0	0	0	0	0
Matai-totara/black/mountain beech forestR1	51.39	0	105.46	0.98	0	2	0	7	0			5.08	0	0	0	0	0	0	0
moraine	8,200.78	0	180.11	100.59	0	19	1	18	1			60.95	0	0	1	0	1	1	1
Mountain beech-red beech forest_successional/degradedB3	58.98	0	37.53	86.15	0	1	0	6	0			21.53	0	0	0	0	0	0	0
Mountain beech-red beech forest_successional/degradedB8	87.00	0	0	0	0	0	0	3	0			0.18	0	0	0	0	0	0	0
Mountain beech-red beech forest_successional/degradedE1	21,122.55	0	172.2	563.72	1	38	1	24	1			48.49	0	0	0	0	0	0	0
Mountain beech-red beech forest_successional/degradedE4	2,243.45	0	85.52	187.95	1	10	1	13	1			27.34	0	0	0	0	0	0	0
Mountain beech-red beech forest_successional/degradedF2	10.62	0	0	0	0	0	0	2	0			0.18	0	0	0	0	1	0	1

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Mountain beech-red beech forest_successional/degradedK1	264.72	0	87.74	174.53	1	5	0	12	0			41.97	0	0	0	0	0	0	0
Mountain beech-red beech forest_successional/degradedK4	0.01	1	0	0	0	0	0	1	0			0.00	0	0	0	0	1	0	1
Mountain beech-red beech forest_successional/degradedP1	7,858.57	0	173.63	381.83	1	12	1	18	1			53.58	0	0	0	0	0	0	0
Mountain beech-red beech forest_successional/degradedP2	291.15	0	98.21	173.5	1	6	1	6	0			15.13	0	0	0	0	0	0	0
Mountain beech-red beech forest_successional/degradedP5	0.50	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Mountain beech-red beech forest_successional/degradedR1	506.16	0	111.37	2.61	0	8	1	4	0			12.96	0	0	0	0	0	0	0
Mountain beech-red beech forestB3	29.63	0	33.15	74.54	0	1	0	3	0			13.44	0	0	0	0	0	0	0
Mountain beech-red beech forestE1	12,102.08	0	172.2	563.72	1	24	1	21	1			49.06	0	0	0	0	0	0	0
Mountain beech-red beech forestE4	160.03	0	83.39	187.75	1	1	0	9	0			20.90	0	0	0	0	0	0	0
Mountain beech-red beech forestF2	0.27	1	0	0	0	0	0	2	0			0.00	0	0	0	0	1	0	1
Mountain beech-red beech forestJ2	5.34	0	19.23	27.62	0	0	0	3	0			12.26	0	0	0	0	0	0	0
Mountain beech-red beech forestK1	36.89	0	98.95	68.87	0	1	0	8	0			31.88	0	0	0	0	0	0	0
Mountain beech-red beech forestP1	39,907.23	0	159.4	194.63	1	60	1	18	1			28.19	0	0	0	0	0	0	0
Mountain beech-red beech forestP2	17.31	0	58.09	172.49	1	0	0	4	0			18.22	0	0	0	0	0	0	0
Mountain beech-red beech forestP5	0.50	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Mountain beech-red beech forestR1	1,575.40	0	111.37	1.01	0	12	1	9	0			9.55	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedB3	4,823.84	0	121.65	365.07	1	9	1	24	1			28.88	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedB8	33.93	0	75.85	171.07	1	0	0	3	0			0.64	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedE1	72,873.66	0	207.18	491.84	1	88	1	42	1			80.02	1	0	0	0	0	0	0
Mountain beech forest_successional/degradedE3	567.16	0	95.02	151.78	1	2	0	14	1			34.96	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedE4	8,861.98	0	137.12	307.65	1	40	1	24	1			56.25	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedF2	118.95	0	17.11	81.71	0	2	0	5	0			1.02	0	0	0	0	1	0	1
Mountain beech forest_successional/degradedF3	5.35	0	84.07	4.28	0	0	0	4	0			41.59	0	0	0	0	1	0	1
Mountain beech forest_successional/degradedJ2	55.63	0	81.27	327.37	1	0	0	12	0			34.79	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedK1	765.60	0	166.36	277.96	1	8	1	18	1			94.97	1	0	0	0	0	0	0
Mountain beech forest_successional/degradedK4	1.19	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedN1	1.29	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedN2	24.28	0	57.32	115.29	0	0	0	9	0			29.75	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedNA	0.61	1	17.05	127.3	0	0	0	3	0			93.66	1	0	0	0	1	1	1
Mountain beech forest_successional/degradedP1	58,683.65	0	211.43	364.78	1	128	1	29	1			186.03	1	0	0	0	0	0	0
Mountain beech forest_successional/degradedP2	1,181.93	0	146.43	189.69	1	0	0	8	0			67.22	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedQ1	3,864.39	0	77.53	243.37	1	10	1	12	0			7.89	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedQ2	113.56	0	49.59	19.01	0	0	0	9	0			4.17	0	0	0	0	0	0	0
Mountain beech forest_successional/degradedR1	911.62	0	156.81	159.18	1	1	0	9	0			51.28	0	0	0	0	0	0	0
Mountain beech forestB3	1,662.72	0	100.52	341.02	1	5	0	18	1			48.53	0	0	0	0	0	0	0
Mountain beech forestE1	61,590.94	0	207.18	487.66	1	99	1	38	1			77.58	1	0	0	0	0	0	0
Mountain beech forestE3	269.72	0	100.05	138.22	0	7	1	7	0			28.03	0	0	0	0	0	0	0
Mountain beech forestE4	1,744.23	0	149.3	306.22	1	19	1	14	1			75.54	1	0	0	0	0	0	0
Mountain beech forestF2	45.53	0	2.88	12.71	0	0	0	3	0			1.88	0	0	0	0	1	0	1
Mountain beech forestF3	0.94	1	1.19	29.96	0	0	0	2	0			1.00	0	0	0	0	0	0	0
Mountain beech forestJ2	48.64	0	81.27	307.13	1	1	0	16	1			49.93	0	0	0	0	0	0	0
Mountain beech forestK1	113.28	0	112.03	273.74	1	0	0	15	1			126.11	1	0	0	0	0	0	0
Mountain beech forestN1	8.76	0	35.91	155.27	0	0	0	6	0			22.60	0	0	0	0	0	0	0
Mountain beech forestN2	38.02	0	48.97	68.79	0	0	0	8	0			13.24	0	0	0	0	0	0	0
Mountain beech forestP1	48,796.71	0	211.43	284.32	1	105	1	24	1			80.51	1	0	0	0	0	0	0
Mountain beech forestP2	202.70	0	120.49	189.39	1	1	0	7	0			179.59	1	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Mountain beech forestP5	71.11	0	87.41	54.39	0	2	0	7	0			10.91	0	0	0	0	0	0	0
Mountain beech forestQ1	175.59	0	71.52	223.67	1	1	0	6	0			7.83	0	0	0	0	0	0	0
Mountain beech forestQ2	4.11	0	0	0	0	0	0	6	0			0.34	0	0	0	0	0	0	0
Mountain beech forestR1	187.66	0	107.73	63.67	0	4	0	8	0			57.64	0	0	0	0	0	0	0
outwash.gravels	7,378.13	0	46.9	217.89	0	24	1	13	1			16.82	0	0	1	0	1	1	1
Permanent Snow and IceP1	208.97	0	111.43	139.6	0	0	0	5	0			37.16	0	0	0	0	0	0	0
Permanent Snow and IceP2	61.63	0	124.46	31.47	0	0	0	4	0			197.69	1	0	0	0	0	0	0
Permanent Snow and IceR1	2,502.23	0	172.89	139.73	1	6	1	12	0			79.35	1	0	0	0	0	0	0
Permanent Snow and IceT1	29,401.83	0	185.99	81.29	0	23	1	11	0			90.54	1	0	0	0	0	0	0
quartzose.cst	29.80	0	109.28	335.71	1	0	0	26	1			63.93	0	0	1	0	1	1	1
Red beech-silver beech forest_successional/degradedE1	721.16	0	67.28	183.64	1	0	0	10	0			18.07	0	0	0	0	0	0	0
Red beech-silver beech forest_successional/degradedE4	967.12	0	83.19	81.24	0	6	1	8	0			15.83	0	0	0	0	0	0	0
Red beech-silver beech forest_successional/degradedK1	25.36	0	21.92	25.49	0	2	0	4	0			29.91	0	0	0	0	0	0	0
Red beech-silver beech forest_successional/degradedP1	149.25	0	51.97	68.45	0	0	0	5	0			22.32	0	0	0	0	0	0	0
Red beech-silver beech forestE1	932.14	0	71.48	184.66	1	0	0	10	0			15.60	0	0	0	0	0	0	0
Red beech-silver beech forestE4	4,330.78	0	95.09	125.64	0	18	1	9	0			31.67	0	0	0	0	0	0	0
Red beech-silver beech forestP1	153.85	0	70.19	65.76	0	0	0	6	0			29.56	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forest_successional/degradedE1	2,945.46	0	177.7	490.97	1	7	1	17	1			141.57	1	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forest_successional/degradedE3	49.94	0	34.99	42.54	0	0	0	4	0			8.40	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forest_successional/degradedE4	855.19	0	130.11	317.09	1	4	0	12	0			34.80	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forest_successional/degradedF2	238.19	0	10.32	128.13	0	1	0	4	0			2.45	0	0	0	0	1	0	1
Rimu-matai-miro-totara/kamahi forest_successional/degradedF3	274.27	0	19.41	342.79	0	11	1	3	0			12.30	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forest_successional/degradedJ3	22.13	0	5.32	24.85	0	1	0	4	0			9.86	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forest_successional/degradedK1	23.84	0	49.58	274.06	1	0	0	4	0			12.88	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forest_successional/degradedK3	4.45	0	0	0	0	0	0	2	0			0.62	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forest_successional/degradedN2	11.76	0	34.55	23.17	0	0	0	4	0			13.67	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forest_successional/degradedP1	1.40	1	41.27	271.82	0	0	0	2	0			35.53	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forest_successional/degradedQ2	0.58	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forestE1	3,910.34	0	142.63	491.85	1	44	1	16	1			69.94	1	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forestE3	37.14	0	31.85	147.58	0	1	0	5	0			6.95	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forestE4	147.84	0	96.45	307.97	1	3	0	4	0			14.75	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forestF2	68.36	0	10.32	128.13	0	0	0	4	0			2.81	0	0	0	0	1	0	1
Rimu-matai-miro-totara/kamahi forestF3	662.30	0	26.38	348.32	0	15	1	3	0			10.80	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forestJ3	2.17	0	0	0	0	1	0	3	0			0.95	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forestK1	5.87	0	36.8	69.48	0	2	0	3	0			6.54	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forestN2	6.28	0	35.92	177.91	0	0	0	6	0			22.34	0	0	0	0	0	0	0
Rimu-matai-miro-totara/kamahi forestP1	0.40	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Rimu-miro-totara/kamahi forest_successional/degradedE1	4.16	0	17.11	69	0	0	0	3	0			3.76	0	0	0	0	0	0	0
Rimu-miro-totara/kamahi forest_successional/degradedE4	17.13	0	18.58	87.91	0	2	0	3	0			10.96	0	0	0	0	0	0	0
Rimu-miro-totara/kamahi forest_successional/degradedF2	0.99	1	0	0	0	0	0	2	0			0.00	0	0	0	0	1	0	1
Rimu-miro-totara/kamahi forest_successional/degradedF3	3.78	0	12.63	171.51	0	0	0	2	0			8.98	0	0	0	0	0	0	0
Rimu-miro-totara/kamahi forest_successional/degradedN2	3.84	0	12.19	6.48	0	0	0	4	0			0.04	0	0	0	0	0	0	0
Rimu-miro-totara/kamahi forestE1	5.35	0	26.55	138.65	0	0	0	4	0			4.15	0	0	0	0	0	0	0
Rimu-miro-totara/kamahi forestF2	0.05	1	0	0	0	0	0	1	0			0.00	0	0	0	0	1	0	1
Rimu-miro-totara/kamahi forestF3	56.32	0	13.98	171.51	0	1	0	3	0			11.09	0	0	0	0	0	0	0
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedE1	1,759.34	0	135.3	645.14	1	1	0	7	0			14.49	0	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedE4	0.51	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedF2	18.75	0	17.11	81.71	0	0	0	3	0			2.34	0	0	0	0	1	0	1
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedF3	13.96	0	6.74	31.14	0	1	0	2	0			8.81	0	0	0	0	0	0	0
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedP5	0.62	1	43.84	1.63	0	0	0	6	0			20.64	0	0	0	0	0	0	0
Rimu-miro/kamahi-red beech-hard beech forest_successional/degradedR1	2.20	0	9.12	0.88	0	0	0	2	0			3.10	0	0	0	0	0	0	0
Rimu-miro/kamahi-red beech-hard beech forestE1	1,701.59	0	135.02	556.08	1	6	1	10	0			13.82	0	0	0	0	0	0	0
Rimu-miro/kamahi-red beech-hard beech forestE4	0.03	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Rimu-miro/kamahi-red beech-hard beech forestF2	4.93	0	17.11	81.71	0	0	0	2	0			3.03	0	0	0	0	1	0	1
Rimu-miro/kamahi-red beech-hard beech forestF3	163.59	0	6.74	31.14	0	6	1	3	0			6.29	0	0	0	0	0	0	0
Rimu-miro/kamahi-red beech-hard beech forestP1	77.20	0	53.07	9.48	0	0	0	7	0			14.93	0	0	0	0	0	0	0
Rimu-miro/kamahi-red beech-hard beech forestP5	73.88	0	52.36	4.95	0	0	0	6	0			18.67	0	0	0	0	0	0	0
Rimu-miro/kamahi-red beech-hard beech forestR1	490.46	0	54.82	1.8	0	2	0	10	0			38.50	0	0	0	0	0	0	0
Rimu/tawa-kamahi forest_successional/degradedB3	12.37	0	10.56	68.93	0	0	0	4	0			0.26	0	0	0	0	0	0	0
Rimu/tawa-kamahi forest_successional/degradedE1	336.98	0	93.93	398.87	1	2	0	8	0			13.77	0	0	0	0	0	0	0
Rimu/tawa-kamahi forest_successional/degradedE4	4.18	0	12.58	11.48	0	0	0	2	0			0.36	0	0	0	0	0	0	0
Rimu/tawa-kamahi forest_successional/degradedF2	59.86	0	25.48	103.68	0	0	0	8	0			8.29	0	0	0	0	1	0	1
Rimu/tawa-kamahi forest_successional/degradedF3	789.61	0	20.54	348.32	0	14	1	4	0			13.73	0	0	0	0	0	0	0
Rimu/tawa-kamahi forest_successional/degradedJ3	18.89	0	17.87	107.07	0	3	0	7	0			11.90	0	0	0	0	0	0	0
Rimu/tawa-kamahi forest_successional/degradedK1	3.07	0	17.04	54.51	0	0	0	2	0			4.10	0	0	0	0	0	0	0
Rimu/tawa-kamahi forest_successional/degradedN2	4.10	0	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Rimu/tawa-kamahi forest_successional/degradedNA	0.50	1	0	0	0	0	0	2	0			0.00	0	0	0	0	1	1	1
Rimu/tawa-kamahi forestE1	836.04	0	56.97	224.11	1	17	1	8	0			30.32	0	0	0	0	0	0	0
Rimu/tawa-kamahi forestF2	7.66	0	10.25	128.13	0	0	0	4	0			8.77	0	0	0	0	1	0	1
Rimu/tawa-kamahi forestF3	1,476.35	0	26.18	348.32	0	25	1	4	0			13.66	0	0	0	0	0	0	0
Rimu/tawa-kamahi forestJ3	6.67	0	36.57	176.91	0	0	0	4	0			7.97	0	0	0	0	0	0	0
Rimu/tawa-kamahi forestK1	0.60	1	12.58	11.48	0	0	0	3	0			0.00	0	0	0	0	0	0	0
Rimu/tawa-kamahi forestN2	0.29	1	0.53	26.27	0	0	0	2	0			0.49	0	0	0	0	0	0	0
Riparian	5,227.75	0	268.53	710.99	1	54	1	129	1			148.23	1	1	0	1	1	1	1
River	817.32	0	221.7	593.31	1	22	1	82	1			154.77	1	1	0	1	1	1	1
River - 4	5,329.79	0	268.29	710.99	1	59	1	116	1			115.02	1	1	0	1	1	1	1
River - 5	7,300.12	0	179.91	681.84	1	71	1	88	1			167.15	1	1	0	1	1	1	1
River - 6	4,546.68	0	163.31	685.24	1	39	1	74	1			94.92	1	1	0	1	1	1	1
River - 7	2,243.40	0	114.51	519.19	1	46	1	40	1			78.68	1	1	0	1	1	1	1
River - 8	2,091.42	0	71.4	310.29	1	22	1	16	1			0.00	0	1	0	1	1	1	1
Sand or GravelB3	89.83	0	38.79	132.83	0	0	0	4	0			57.28	0	0	0	0	0	0	0
Sand or GravelB7	57.24	0	0.39	68.41	0	15	1	6	0			25.87	0	0	0	0	0	0	0
Sand or GravelB8	6.21	0	7.5	221.61	0	5	0	6	0			43.71	0	0	0	0	0	0	0
Sand or GravelB9	68.62	0	8.23	66.6	0	8	1	10	0			50.02	0	0	0	0	0	0	0
Sand or GravelE1	92.66	0	21.39	60.8	0	14	1	9	0			26.13	0	0	0	0	0	0	0
Sand or GravelE4	0.57	1	6.08	368.78	0	0	0	4	0			52.78	0	0	0	0	0	0	0
Sand or GravelF1	0.38	1	NA	NA	0	0	0	1	0			0.00	0	0	0	0	1	1	1
Sand or GravelF2	5.45	0	1.49	49.3	0	0	0	3	0			0.62	0	0	0	0	1	0	1
Sand or GravelF3	39.38	0	6.54	244.46	0	6	1	7	0			27.15	0	0	0	0	0	0	0
Sand or GravelI3	21.54	0	2.8	16.84	0	0	0	2	0			0.43	0	0	0	0	1	1	1
Sand or GravelI4	10.47	0	0.58	1.81	0	6	1	2	0			9.67	0	0	0	0	0	1	1

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: Iwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Sand or GravelJ2	242.99	0	31.51	209.28	0	11	1	8	0			37.90	0	0	0	0	0	0	0
Sand or GravelJ3	168.87	0	21.7	338.88	0	20	1	10	0			21.49	0	0	0	0	0	0	0
Sand or GravelL1	0.46	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Sand or GravelL2	46.99	0	1.94	17.94	0	3	0	4	0			39.30	0	0	0	0	0	1	1
Sand or GravelN1	351.79	0	26.55	157.61	0	10	1	15	1			189.72	1	0	0	0	0	0	0
Sand or GravelN2	174.89	0	9.97	76.04	0	0	0	8	0			10.51	0	0	0	0	0	0	0
Sand or GravelN3	16.76	0	9.44	62.19	0	0	0	3	0			27.19	0	0	0	0	0	0	0
Sand or GravelN6	0.43	1	0	0	0	0	0	2	0			0.20	0	0	0	0	0	0	0
Sand or GravelNA	42.58	0	100.45	429.36	1	4	0	17	1			132.08	1	0	0	0	1	1	1
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldN4	14.98	0	50.17	152.58	1	0	0	2	0			1.67	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldP1	513.17	0	107.62	230.94	1	0	0	9	0			213.29	1	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldP2	15.91	0	63.1	20.81	0	0	0	3	0			15.95	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Alpine Grass/HerbfieldQ1	525.35	0	80.37	539.09	1	0	0	9	0			32.08	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - FernlandK3	0.06	1	0	0	0	0	0	1	0			0.07	0	0	0	0	0	1	1
Scrub, shrubland and tussock-grassland below treeline - FernlandN4	0.98	1	0	0	0	0	0	3	0			0.00	0	0	0	0	0	1	1
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaE1	417.82	0	99.21	165.93	1	1	0	12	0			18.16	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaE4	330.18	0	101.78	99.19	0	1	0	8	0			43.19	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaJ2	0.61	1	0	0	0	0	0	1	0			0.00	0	0	0	0	1	0	1
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaK1	64.45	0	67.62	144.67	1	1	0	6	0			7.24	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaN4	270.06	0	78.02	423.86	1	1	0	9	0			16.33	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaN6	2.24	0	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaNA	0.00	1	0	0	0	0	0	2	0			0.00	0	0	0	0	1	1	1
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaP1	1,615.66	0	116.09	221.44	1	7	1	9	0			16.86	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaP2	11.83	0	0	0	0	0	0	3	0			0.00	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaQ1	7.83	0	5.31	141.39	0	0	0	2	0			24.54	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Manuka and/or KanukaQ2	1.76	0	55.06	147.25	1	0	0	4	0			45.62	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubE1	215.42	0	51.09	78.61	0	0	0	7	0			4.33	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubE4	96.00	0	55.03	501.28	1	0	0	8	0			73.16	1	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubK1	24.74	0	14.14	429.41	0	2	0	1	0			46.26	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubK3	1.53	1	2.34	0.09	0	0	0	3	0			9.09	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubK4	10.28	0	48.29	433.66	1	0	0	2	0			183.95	1	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubL1	0.62	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN3	0.02	1	16.57	97.91	0	0	0	1	0			4.50	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN4	5,048.41	0	121.91	427.31	1	23	1	22	1			45.09	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN5	49.53	0	51.79	194.27	1	0	0	10	0			38.39	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN6	163.17	0	105.84	236.69	1	0	0	13	1			22.32	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubN7	28.47	0	33.25	90.53	0	0	0	4	0			8.48	0	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubP1	448.15	0	87.22	91.61	0	3	0	9	0			35.15	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubQ1	190.86	0	77.86	326.33	1	0	0	5	0			18.18	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Matagouri or Grey ScrubQ2	55.38	0	99.82	327.83	1	1	0	8	0			29.50	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandE1	697.42	0	55.9	140.67	1	0	0	7	0			4.58	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandE4	17.80	0	36.75	38.61	0	0	0	3	0			15.72	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandN4	25.04	0	27.68	247.4	0	0	0	2	0			18.69	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandP1	4,438.55	0	142.79	233.58	1	9	1	16	1			316.47	1	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandP2	1,019.45	0	133.9	126.92	0	3	0	11	0			47.78	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandQ1	96.18	0	82.34	116.5	0	0	0	6	0			21.49	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandQ2	1.66	0	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Sub Alpine ShrublandR1	61.97	0	57.42	1.86	0	0	0	4	0			9.74	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandE1	102.08	0	71.4	164.36	1	0	0	10	0			12.01	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandE4	81.17	0	62.99	458.05	1	3	0	9	0			62.31	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandJ2	16.20	0	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandK1	25.08	0	70.39	199.13	1	1	0	5	0			37.11	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandK2	0.27	1	0	0	0	0	0	1	0			0.10	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandK3	3.81	0	0	0	0	0	0	1	0			0.00	0	0	0	0	0	1	1
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandN4	10,778.15	0	104.05	427.31	1	20	1	17	1			29.07	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandN5	178.72	0	43.46	164.26	0	0	0	6	0			1.60	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandN6	38.72	0	21.83	178.04	0	0	0	5	0			12.17	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandP1	21,462.45	0	150.03	233.58	1	69	1	22	1			65.91	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandP2	1,120.09	0	133.9	82.52	0	0	0	9	0			39.71	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandQ1	19,892.48	0	113.15	623.25	1	24	1	12	0			27.40	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandQ2	200.95	0	50.79	357.24	1	3	0	8	0			25.54	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline - Tall Tussock GrasslandR1	44.73	0	56.18	1.86	0	0	0	5	0			27.51	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedE1	32.58	0	55.31	66.69	0	0	0	4	0			4.55	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedE4	6,124.80	0	92.69	470.11	1	16	1	15	1			25.16	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedJ2	0.82	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedK2	108.73	0	16.4	75.73	0	6	1	2	0			4.87	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedK4	4.98	0	0	0	0	0	0	2	0			0.07	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedN2	23.04	0	0	0	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedN4	13,047.58	0	94.69	427.31	1	20	1	22	1			19.81	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedN5	339.12	0	34.5	195.31	0	0	0	9	0			10.99	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedN6	30,994.65	0	35.49	258.78	0	57	1	26	1			20.62	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedN7	17.83	0	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: Iwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Scrub, shrubland and tussock-grassland below treeline_successional/degradedNA	2.05	0	0	0	0	0	0	2	0			0.00	0	0	0	0	1	1	1
Scrub, shrubland and tussock-grassland below treeline_successional/degradedP1	1,667.17	0	124.99	232.71	1	2	0	11	0			38.27	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedP2	5.13	0	86.31	43.63	0	0	0	4	0			36.74	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedQ1	2,686.32	0	90.42	447.5	1	2	0	9	0			33.26	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedQ2	35.62	0	53.5	293.97	1	0	0	5	0			35.38	0	0	0	0	0	0	0
Scrub, shrubland and tussock-grassland below treeline_successional/degradedR1	1.57	1	0	0	0	0	0	2	0			4.86	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldP1	14,072.27	0	173.13	451.41	1	28	1	14	1			72.24	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldP2	2,932.05	0	134.33	127.37	0	9	1	10	0			193.85	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldQ1	11,725.00	0	131.3	561.03	1	26	1	11	0			94.71	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldR1	10,263.59	0	198.88	253.77	1	29	1	16	1			71.19	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Alpine Grass/HerbfieldT1	127.82	0	88.18	63.71	0	0	0	5	0			50.65	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - FernlandP1	1.59	1	58.64	28.22	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - FernlandQ1	65.29	0	58.97	52.04	0	0	0	3	0			6.22	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaE1	74.76	0	133.74	222.49	1	3	0	6	0			35.77	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaE4	0.20	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaK1	3.71	0	0	0	0	0	0	1	0			0.00	0	0	0	0	1	1	1
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaP1	524.85	0	147.42	195.1	1	0	0	11	0			85.18	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaP2	10.83	0	47.01	66.87	0	0	0	3	0			64.13	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaP5	4.94	0	0	0	0	0	0	4	0			0.00	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Manuka and/or KanukaR1	16.43	0	98.95	0.7	0	0	0	2	0			6.07	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubE1	14.66	0	96.88	145.13	1	0	0	4	0			171.38	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubE4	83.47	0	79.18	425.24	1	0	0	3	0			37.29	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubP1	640.91	0	172.13	402.9	1	1	0	10	0			66.54	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubP2	1.05	1	0	0	0	0	0	2	0			0.00	0	0	0	0	0	1	1
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubQ1	564.90	0	96.07	475.8	1	2	0	7	0			47.92	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Matagouri or Grey ScrubR1	0.53	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandE1	94.31	0	126.26	183.42	1	0	0	5	0			27.23	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandE4	154.58	0	126.12	114.65	0	0	0	9	0			33.01	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandP1	22,223.60	0	220.5	418.06	1	69	1	22	1			92.44	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandP2	11,102.77	0	147.55	127.38	0	17	1	15	1			60.70	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandQ1	1,197.27	0	137.48	507.34	1	1	0	8	0			76.20	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandR1	11,377.21	0	162.86	134.59	0	27	1	14	1			111.14	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Sub Alpine ShrublandT1	10.02	0	88.28	4.15	0	0	0	6	0			9.25	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandE1	83.54	0	184.98	256.83	1	0	0	6	0			156.99	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandE3	4.35	0	2.82	16.49	0	0	0	3	0			0.85	0	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: lwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandE4	487.61	0	127.87	431.83	1	0	0	5	0			37.37	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandNA	9.93	0	69.74	84.02	0	0	0	5	0			68.35	1	0	0	0	1	1	1
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandP1	177,879.82	0	228.41	466.72	1	183	1	29	1			127.08	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandP2	45,514.90	0	152.18	189.71	1	46	1	17	1			86.52	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandQ1	85,972.27	0	136.48	527.18	1	66	1	15	1			58.31	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandR1	32,217.33	0	179.35	159.22	1	39	1	15	1			62.48	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline - Tall Tussock GrasslandT1	54.07	0	122.4	41.03	0	0	0	5	0			68.45	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline_successional/degradedE1	143.11	0	65.11	225.45	1	0	0	5	0			24.76	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline_successional/degradedE4	213.29	0	28.89	119.1	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline_successional/degradedP1	7,999.59	0	169.22	452.32	1	27	1	21	1			104.52	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline_successional/degradedP2	211.17	0	128.48	69.82	0	0	0	6	0			176.52	1	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline_successional/degradedQ1	14,447.94	0	117.27	541.72	1	25	1	11	0			46.84	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline_successional/degradedQ2	0.12	1	7.83	49.87	0	0	0	2	0			0.00	0	0	0	0	0	0	0
Scrub, tussock-grassland and herbfield above treeline_successional/degradedR1	73.01	0	102.21	243.96	1	0	0	8	0			87.74	1	0	0	0	0	0	0
Silver beech forest_successional/degradedE1	0.73	1	0	0	0	0	0	1	0			0.00	0	0	0	0	0	0	0
Silver beech forest_successional/degradedE4	282.18	0	78.9	98.48	0	3	0	9	0			162.56	1	0	0	0	0	0	0
Silver beech forest_successional/degradedF3	1.40	1	0	0	0	0	0	1	0			0.10	0	0	0	0	1	0	1
Silver beech forest_successional/degradedK1	302.33	0	79.12	80.84	0	15	1	8	0			50.63	0	0	0	0	0	0	0
Silver beech forest_successional/degradedP1	3,417.60	0	136.26	175.49	1	28	1	12	0			184.79	1	0	0	0	0	0	0
Silver beech forest_successional/degradedP2	1,072.40	0	137.87	66.42	0	3	0	10	0			65.88	0	0	0	0	0	0	0
Silver beech forest_successional/degradedP5	63.51	0	56.43	27.64	0	0	0	10	0			44.10	0	0	0	0	0	0	0
Silver beech forest_successional/degradedR1	7,211.60	0	146.03	139.56	0	15	1	13	1			110.39	1	0	0	0	0	0	0
Silver beech forestE1	45.53	0	43.11	129.34	0	4	0	5	0			7.22	0	0	0	0	0	0	0
Silver beech forestE4	86.33	0	114.17	81.88	0	1	0	8	0			80.37	1	0	0	0	0	0	0
Silver beech forestF3	19.33	0	1.19	29.96	0	0	0	1	0			0.57	0	0	0	0	0	0	0
Silver beech forestK1	97.13	0	87.92	98.28	0	10	1	10	0			47.79	0	0	0	0	0	0	0
Silver beech forestP1	33,705.73	0	123.73	175.34	1	38	1	18	1			59.50	0	0	0	0	0	0	0
Silver beech forestP2	53.64	0	137.87	66.28	0	0	0	8	0			144.98	1	0	0	0	0	0	0
Silver beech forestP5	1,198.11	0	137.87	30.08	0	0	0	9	0			24.83	0	0	0	0	0	0	0
Silver beech forestR1	9,489.85	0	146.03	63.54	0	27	1	17	1			128.83	1	0	0	0	0	0	0
sinkhole	62.07	0	156.86	397.52	1	0	0	20	1			117.92	1	0	1	0	1	1	1
snow.banks	17.46	0	184.41	185.82	1	28	1	16	1			77.17	1	0	1	0	1	1	1
Sub Alpine Shrubland_successional/degradedB8	0.36	1	26.35	93.35	0	0	0	3	0			0.00	0	0	0	0	0	0	0
Sub Alpine Shrubland_successional/degradedE1	0.36	1	43.76	195.96	0	0	0	3	0			149.46	1	0	0	0	0	0	0
Sub Alpine Shrubland_successional/degradedE4	0.16	1	53.57	82.24	0	0	0	3	0			27.87	0	0	0	0	0	0	0
Sub Alpine Shrubland_successional/degradedNA	59.83	0	160.24	277.97	1	5	0	12	0			78.55	1	0	0	0	1	1	1
Sub Alpine Shrubland_successional/degradedP1	63.77	0	111.87	333.92	1	0	0	8	0			104.69	1	0	0	0	0	0	0
Sub Alpine Shrubland_successional/degradedP2	3.65	0	58.99	36.86	0	0	0	3	0			55.48	0	0	0	0	0	0	0
Sub Alpine Shrubland_successional/degradedP5	0.15	1	0	0	0	0	0	3	0			0.00	0	0	0	0	0	0	0
Sub Alpine Shrubland_successional/degradedQ1	62.63	0	57.16	259.34	1	0	0	4	0			27.93	0	0	0	0	0	0	0
Sub Alpine Shrubland_successional/degradedQ2	3.04	0	0	0	0	0	0	1	0			0.18	0	0	0	0	0	0	0
Sub Alpine Shrubland_successional/degradedR1	62.18	0	147.61	62.84	0	0	0	10	0			72.77	1	0	0	0	0	0	0

ecosystem2	Total area (ha)	S: Small range	Frost days range	PED range	AC: Climatic range	Notable species #	S: notable species	Unique level4 envs	AC: heterogenous	Area available	S: dispersal	Avg_dist	S: isolated	S: Iwi	S: NUE	S: interdependent	PED limited	Frost days limited	S:Dispersal restricted
Sub Alpine Shrubland_successional/degradedT1	51.53	0	150.24	14.13	0	0	0	10	0			67.96	0	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedB3	0.30	1	0	0	0	0	0	3	0			0.00	0	0	0	0	0	1	1
Tall Tussock Grassland_successional/degradedE1	6.33	0	168.62	348.48	1	0	0	8	0			193.60	1	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedE4	314.82	0	94.92	482.16	1	0	0	11	0			61.05	0	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedJ2	13.17	0	0	0	0	0	0	1	0			0.00	0	0	0	0	0	1	1
Tall Tussock Grassland_successional/degradedK1	3.26	0	95.14	213.27	1	0	0	3	0			24.71	0	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedK2	5.98	0	4.54	32.02	0	0	0	1	0			0.25	0	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedK3	25.18	0	20.72	97.01	0	0	0	3	0			0.07	0	0	0	0	0	1	1
Tall Tussock Grassland_successional/degradedN2	13.53	0	9.36	132.1	0	0	0	2	0			0.13	0	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedN4	3.75	0	57.47	356.6	1	0	0	3	0			8.90	0	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedNA	292.86	0	152.38	710.79	1	7	1	24	1			80.12	1	0	0	0	1	1	1
Tall Tussock Grassland_successional/degradedP1	3,068.97	0	180.74	489.94	1	5	0	17	1			203.85	1	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedP2	450.76	0	130.13	64.23	0	0	0	6	0			135.94	1	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedP5	0.08	1	81.84	0.73	0	0	0	3	0			8.49	0	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedQ1	8,995.65	0	113.95	547.99	1	12	1	14	1			42.67	0	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedQ2	2,324.00	0	88.24	457.34	1	1	0	7	0			41.85	0	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedR1	3,755.08	0	175.14	134.59	0	3	0	13	1			111.81	1	0	0	0	0	0	0
Tall Tussock Grassland_successional/degradedT1	251.40	0	165.11	73.44	0	1	0	14	1			69.88	1	0	0	0	0	0	0
tarn	645.75	0	222.5	609.62	1	6	1	53	1			153.34	1	0	1	0	1	1	1
Wetlands	23,521.51	0	230.82	710.94	1	125	1	127	1			105.85	1	1	0	0	1	1	1
Wetlands_successional/degradedE1	0.26	1	0	0	0	0	0	1	0			0.00	0	1	0	0	0	0	0
Wetlands_successional/degradedE3	1.13	1	0	0	0	0	0	1	0			0.37	0	1	0	0	0	0	0
Wetlands_successional/degradedE4	3.66	0	18.62	171.31	0	0	0	5	0			101.52	1	1	0	0	0	0	0
Wetlands_successional/degradedF3	0.00	1	0	0	0	0	0	1	0			0.00	0	1	0	0	0	0	0
Wetlands_successional/degradedI3	11.56	0	11.47	159.09	0	1	0	4	0			9.84	0	1	0	0	0	0	0
Wetlands_successional/degradedK4	1,256.11	0	98.97	498.29	1	10	1	23	1			81.32	1	1	0	0	0	0	0
Wetlands_successional/degradedL2	0.38	1	NA	NA	0	0	0	1	0			0.00	0	1	0	0	1	1	1
Wetlands_successional/degradedN1	0.06	1	0	0	0	0	0	2	0			0.00	0	1	0	0	0	1	1
WetlandsK4	5.92	0	11.04	16.04	0	0	0	1	0			0.00	0	0	0	0	0	0	0

Call Free 0508 WILDNZ
Ph +64 7 343 9017
Fax +64 7 349018
ecology@wildlands.co.nz

99 Sala Street
PO Box 7137, Te Ngae
Rotorua 3042, New Zealand

Regional Offices located in Auckland; Christchurch;
Dunedin; Hamilton; Invercargill; Queenstown; Tauranga;
Wānaka; Wellington; Whangārei.

wildlands.co.nz

Wildlands