



Craigieburn Basin Trust Ecological Vision 2050



Ecological Vision

Strategic ecological goals to:

- support & guide the Trust's work to ensure longevity and maximum impact of resources (time, energy & money)
- Focus project work & support our funding efforts



100 Year Vision

The Craigieburn Basin will be teeming with life – thriving, self-sustaining ecosystems where taonga species flourish and invasive threats are eliminated. Mātauranga Māori guides the sustainable use of whenua. People are drawn to this place for recreation and adventure and to live, learn, work and play. We have resilient, indigenous biodiversity alongside healthy and robust communities. We are continually learning how to better support our cherished mountain ecosystems and environment for the benefit of all.



Work in Progress!!

- Ideas still maturing & will develop over time
- Feedback required from Trust, stakeholders including iwi , DOC



Nine Ecological Goals

- Protect all ecosystems, species, restoration of communities & connectivity, reduce plant & animal pests, build long-term resilience



1: Identify and protect all ecosystems in the Craigieburn Basin

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From the mountain tops down to the intermontane basins, the Craigieburn Basin has many distinctive geographic features supporting specialised ecosystems, including some that are geographically restricted, rare or naturally uncommon in Aotearoa.



1a: Quantify baseline vegetation distribution in the basin



What we will do:

- Identify and map the distribution of all pre-fire and current vegetation communities in the basin
- Create a digital GIS reference maps to be able to monitor and measure future changes and enable effective management
- Monitor baseline changes over time (15 monitoring plots).





1b: Actively protect and enhance rare and uncommon ecosystems



Nationally uncommon ecosystems present in the basin:

- Greywacke & limestone cliffs & rocks
- Wetlands
- Boulderfields
- Scree
- Braided Rivers
- Inland outwash gravels

What we will do:

- Map & and prioritise all uncommon ecosystems across the basin
- Assess the resilience of each ecosystem to long-term threats
- Where required, run **targeted pest and weed control programmes** in each ecosystem type
- Carry out **regular monitoring of indicator species** (plants, lizards, invertebrates)
- Install **physical protection where needed** (e.g. fencing sensitive sites)
- Respond rapidly to new threats (fire, weed incursions, erosion)



1c: Protect and enhance rare/taonga plant and animal species



1c: Protect and enhance rare plant and animal species

Endangered species are crucial for maintaining ecological balance, providing essential services like pollination, seed dispersal, and food chain regulation, and contribute to our national biodiversity and uniqueness.

What we will do:

- **Identify rare/taonga species (e.g.,** kea, New Zealand falcon, mistletoe species, lizards, alpine insects and plants, limestone plant species, Canterbury spotted skink).
- Carry out **hands-on intervention** (nest protection, predator control, habitat restoration)
- Support natural regeneration of host plants (e.g. mistletoe)
- Monitor populations regularly
- Step in with intensive management where needed



1d: Re-establish populations of locally extinct native species



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In the past the Craigieburn Basin was home to native species that no longer exist in the area. Some are now extinct (e.g. moa). With careful planning and management, species that are still present elsewhere in New Zealand (such as kiwi, kakariki, mohua) could be reintroduced to the basin to help support the long term existence of these species.

What we will do:

This goal is beyond the 2050 planning threshold but is mentioned as a long term goal to work towards. Re-introductions could be achievable within the 100 Year Vision period.

- **Work with the Department of Conservation** to identify a small list of animal and plant species for reestablishment.
- **Work with appropriate experts** to determine if re-introductions are possible and create re-introduction plans.



2: Promote ecosystem recovery by restoring native vegetation to fire-affected communities





2a: Determine pre-fire vegetation communities in fire-affected area



2a: Determine pre-fire vegetation communities in fire- affected area

It is essential to understand the distribution of pre-fire vegetation to be able to direct active post-fire restoration efforts.

What we will do:

- Identify and map vegetation community distribution in fire-affected area immediately before the 2024 fire.
- Create digital GIS baseline reference maps to monitor and measure changes in vegetation cover over time and direct management efforts.



2b: Restore native vegetation to fire-affected areas



Identify priority areas:

- Terrace & hillslopes near Mistletoe Flat
- Hillslopes & valley floor between BR & Craigieburn Roads
- Around Env Ed Centre
- Hillslopes east & west of Elephant Hill
- Hillslopes south & north of Bridge Hill
- Craigieburn Cutting slopes



Target:

70% native cover
restored to priority
areas within 15 years



What we will do: (Restoration plan)

- **Use locally-sourced** seed and plants that reflect pre-fire ecosystems
- **Undertake a small trial** of restoration techniques
- **Identify the best approaches for restoration**
- **Create a restoration planting plan**
- **Hand plant** restoration 'islands'
- Fell dead exotic trees and interplant within this sheltered microhabitat
- Investigate mass seeding by air (drone or plane/helicopter)
- Monitor and maintenance of restoration islands. Adjust accordingly
- More planting

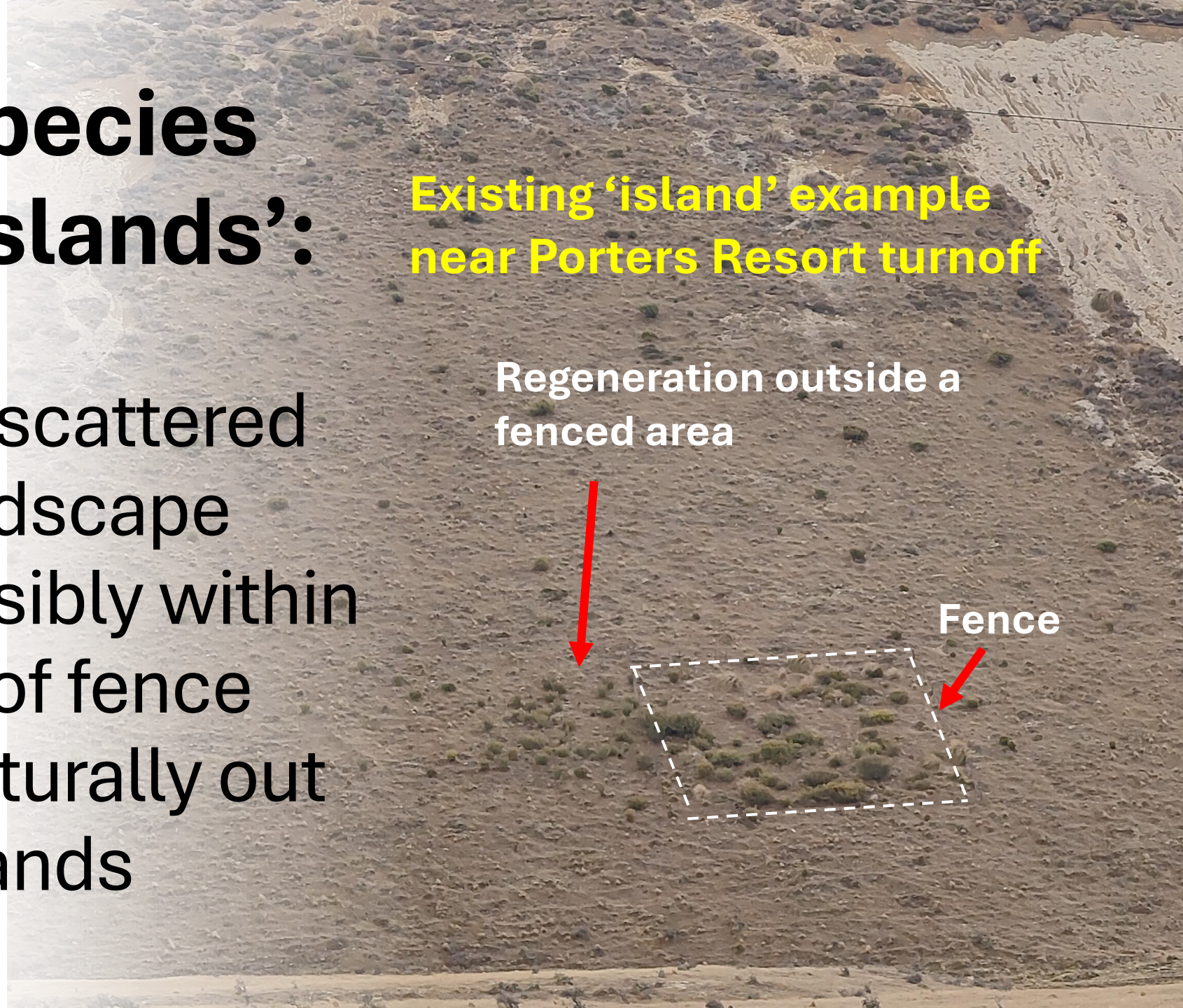
Hand plant species 'restoration islands':

- Planted areas scattered across the landscape
- Each area possibly within a predator proof fence
- Regenerate naturally out from these islands

Existing 'island' example
near Porters Resort turnoff

Regeneration outside a
fenced area

Fence





2c: Enhance biodiversity in the Craigieburn Basin



2c: Enhance biodiversity in the Craigieburn Basin

The Craigieburn Basin is a mix of natural and farmed landscapes. The presence of some ecosystems has decreased since European settlement. We aim to increase native ecosystem cover across the Basin to ensure native ecosystems are preserved and so our wildlife can move freely across the landscape and flourish.

What we will do:

- **Create species list of appropriate plants that are characteristic of the area and encourage native planting** for residents and farmed areas
- Identify where native ecosystems remain on private land
- Retain, restore and expand any native ecosystems remaining on private land
- Expand restoration plantings beyond the burned area to recreate and expand existing native ecosystems



3: Reduce invasive plant species in the burned area and beyond



Target:

maintain <5% cover of invasive woody (wilding pines, other planted species (eucalypts, birch), gorse, scotch broom, lupins) and key herbaceous (e.g. foxgloves, thistles) species after 5 years



What we will do: (Weeds plan)

- Work collaboratively with ECAN, DOC, SDC and other appropriate agencies (Universities) to provide the best solutions
- Identify and prioritise the problem weed species and determine the appropriate methods of control
- Prioritise high-risk species
- Run bi-**annual weed control operations** (spraying, cutting, pulling)
- Set up **early detection and rapid response** for new weeds
- Track progress with **repeat mapping and photo monitoring**



4: Reduce pest species impacts



A brown and white mouse is shown in a natural setting, standing on a grey, textured rock. The mouse has a white underbelly and a brown back with a white stripe running down its side. It is looking towards the left. The background is filled with green and brown foliage, and the lighting is soft and natural.

Target:
reduce key animal pest populations
to below ecological impact
thresholds

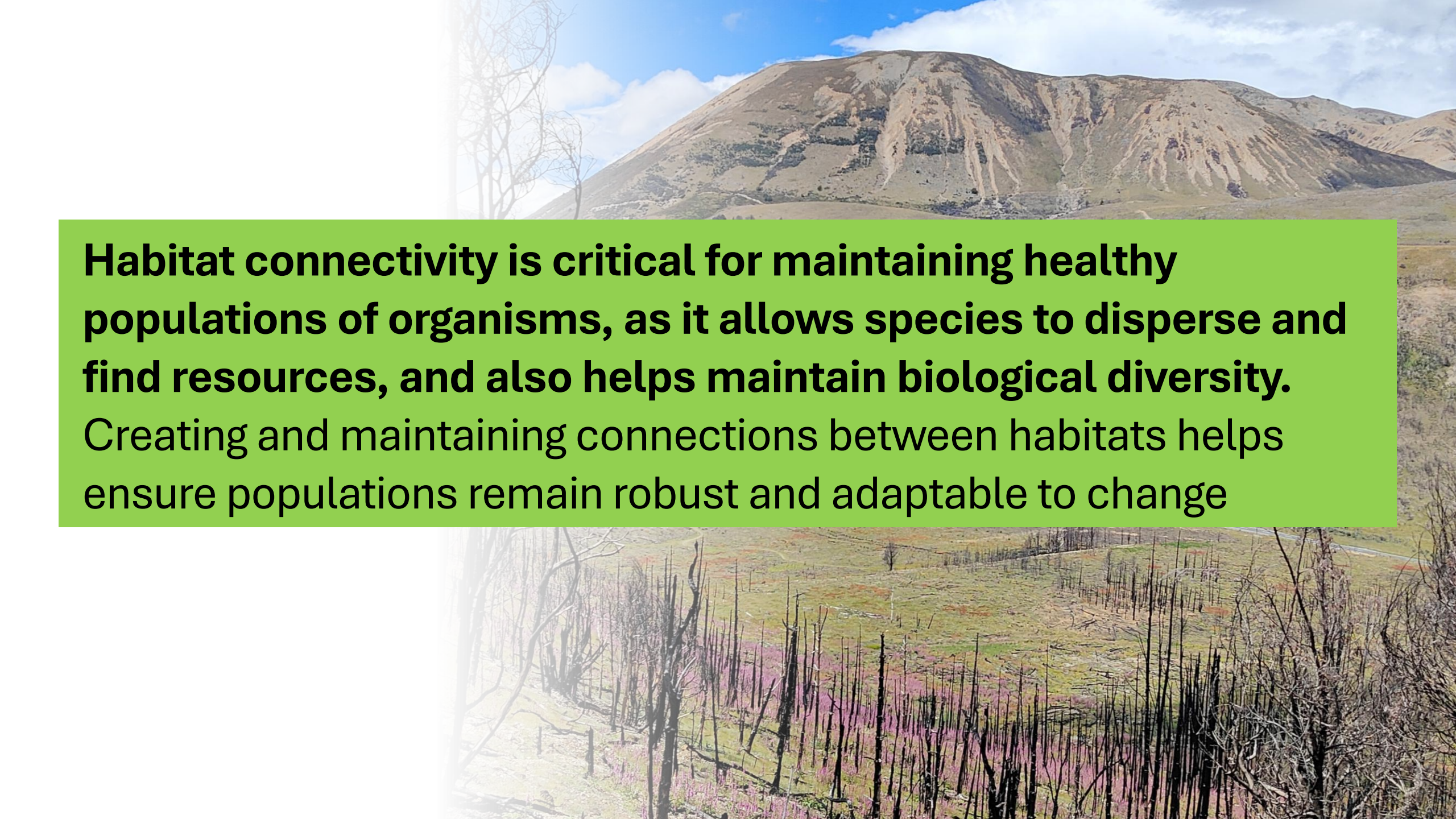
What we will do: (Pest plan)

- Work collaboratively with the Craigieburn Trapping Alliance and other appropriate agencies (DOC, ECAN, SDC)
- Identify and prioritise the problem species and determine the appropriate methods of control
- Prioritise high-risk species. Focus on key pests for plant regeneration (deer, hares) and breeding birds (cats, rodents, mustelids, etc.)
- Establish/maintain **baiting and trapping networks** across priority areas
- Monitor population size using **tracking tunnels and cameras** and impact using monitoring sites
- Adjust control methods based on results
- Maintain long-term suppression below ecological thresholds



5: Reconnect habitats across the landscape





Habitat connectivity is critical for maintaining healthy populations of organisms, as it allows species to disperse and find resources, and also helps maintain biological diversity. Creating and maintaining connections between habitats helps ensure populations remain robust and adaptable to change

What we will do: (Restoration plan)

- Identify and map **priority ecological corridors**
- Plant and restore vegetation to link fragmented habitats
- Remove barriers to wildlife movement where possible
- Monitor and control invasive pest and weed presence



6: Stablise soils after vegetation loss



Soil stability is crucial
for erosion control,
land protection,
ecosystem functioning
and mitigating against
natural disasters



What we will do: (Restoration plan)

- Identify and prioritise areas with instability, prioritising steep slopes and vulnerable soils
- Identify areas where instability from frost heave occurs
- Establish **ground cover using appropriate native seeds and/plants**
- Install erosion control structures (e.g. sediment traps, contouring)
- Monitor high-risk sites after heavy rain events

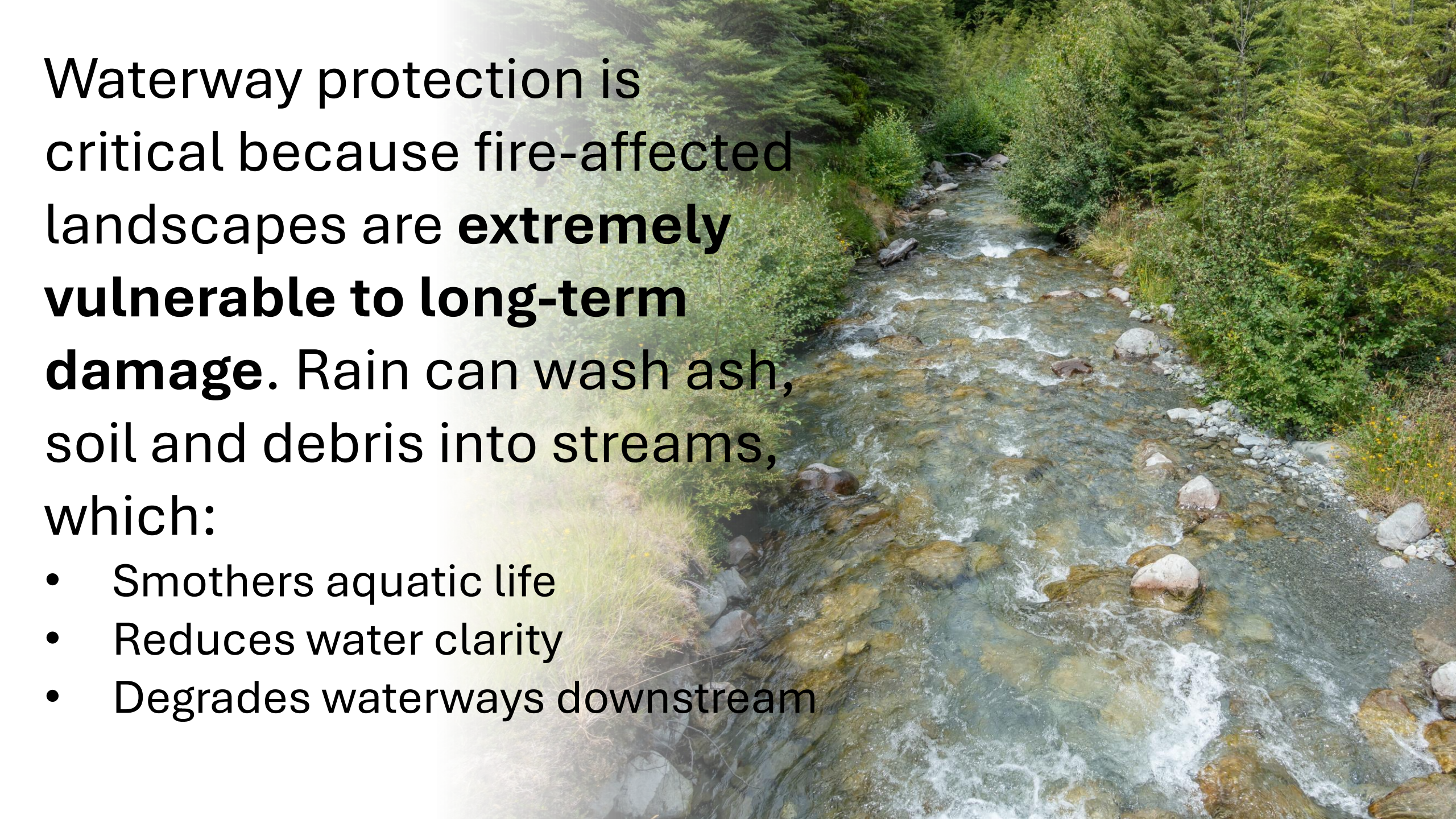


7: Protect waterways and improve water quality



Healthy waterways prevent waterborne diseases, support ecosystems, provide recreational opportunities, and help manage the impacts of climate change, such as pollution and low water levels.





Waterway protection is critical because fire-affected landscapes are **extremely vulnerable to long-term damage**. Rain can wash ash, soil and debris into streams, which:

- Smothers aquatic life
- Reduces water clarity
- Degrades waterways downstream

What we will do: (Restoration & Weeds plans)

- Control sediment flow (see goal 6)
- Establish **riparian planting along streams and rivers** to slow water flow and prevent erosion and improve water quality
- Remove invasive plant species



8: Build climate- resilient ecosystems and landscapes



The challenges posed by climate change and human activities potentially threaten the existing ecosystems of the Craigieburn Basin



Our goal is to ensure restored ecosystems can withstand increasing fire risk, drought, extreme rainfall, and temperature changes.



What we will do: (Restoration plan)

- Collect and store locally sourced seed so we are prepared for any future disturbance events.
- Plant for future conditions using climate-tolerant species.
- Stabilise vulnerable slopes to minimise erosion and slow water run off.
- Strengthen landscape connectivity from high to low elevation and across different ecosystems.
- Use adaptive management that tracks environmental trends and adjusts conservation goals as the climate evolves.



9: Educate, inspire and engage our community



Ongoing
community
engagement and
support for the
Craigieburn
Basin restoration
work are the life
blood of the
Trust.



What we will do: (Educational School Engagement & Communications frameworks)

- Create a warm, welcoming and safe space for people to come together
- Share knowledge and practical experience to educate and inspire
- Develop an Educational Schools Engagement framework to build knowledge and skills.
- Develop a Communication framework to share information and provide updates.
- Share our journey widely through compelling stories to educate and inspire people to take action
- Develop an Outreach Plan to expand the Trust's reach and build relationships.
- Build strong partnerships to help fund our work and inspire and educate our community.
- Continue to build and maintain strong partnerships with mana whenua.
- Partner with our neighbouring trusts for larger landscape projects



Nine Ecological Goals

- protect all ecosystems, species
- restore communities & build connectivity
- minimise plant & animal pest impacts
- build long-term resilience
- educate and inspire community



Thanks!

