



National Environmental  
Research Program

LANDSCAPES AND  
POLICY *hub*

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## ***scenarios overview***



# ***Australian Alps***

## ***An overview of plausible scenarios in 2030***

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**March 2014**

Landscapes and Policy Hub

# FOREWORD

A significant challenge for national parks is balancing biodiversity conservation and other uses. This challenge is accentuated by the impacts from climate change.

The Landscapes and Policy Hub is taking an approach to this challenge that integrates social, economic and ecological perspectives to develop tools, techniques and policy options to support regional biodiversity planning.

An important element of this research is investigating plausible futures for managing the iconic alpine landscapes. In the case of the Australian Alps, climate change impacts on local endemic species distribution make this region particularly vulnerable, as there is no scope for upward mobility of affected species, and they face competition from a wide range of invasive new species.

Led by Sue Moore and Michael Lockwood and supported by researchers Michael Mitchell and Sarah Clement, this team is using a combination of conceptual modelling, scenario planning, surveys, interviews and focus groups to develop a range of governance options to assist biodiversity policy and decision-making.

The material in this background document is built on the knowledge, experience and opinions of people who work in the region, have cultural connections, are responsible for some aspect of its regulation, or have interests in its future.

We are particularly grateful for the generosity of all those who have participated in one-on-one interviews, workshops and focus groups and their thoughtful and candid contributions.

**Ted Lefroy**

Director, Landscapes and Policy Hub

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## About this document...

The 2030 scenarios for the Australian Alps detailed in this document are provided as background reading for the scenario planning workshop on 1-2 April 2014. The scenarios were developed at a workshop on 10-11 April 2013, where we used scenario narratives to create strategic conversations around what a range of key stakeholders see as being the key drivers of change, and what plausible futures may evolve, given our collective understanding of past and current trends in the Australian Alps.

On 1-2 April 2014, we will consider the two governance options presented in a separate document, '*Options to Improve Biodiversity Governance Arrangements in the Australian Alps*'. The two governance options will be tested for their usefulness in improving biodiversity outcomes across all scenarios presented in this document.



# Scenario Planning

## *Why we have created the scenarios*

The Landscape and Policy Hub is undertaking research to identify tools, techniques and policy options that could assist landscape-scale conservation of biodiversity. Making plans to enhance biodiversity outcomes in the Australian Alps is complicated by considerable uncertainty concerning the future state of many of the key drivers of change, and their effects on the condition and ecological communities. Constructing future scenarios is a useful planning technique in such situations. Scenario planning allows people to identify plausible futures that can inform planning and decision making. We use social-ecological systems thinking to underpin our approach to scenario development.

## *Creating the scenarios*

To create the scenarios based on a social-ecological systems analysis, we followed four steps.

- Step 1. Identify a focal system and associated biodiversity features.*
- Step 2. Generate and refine key biophysical and social drivers affecting the focal biodiversity features, together with governance influences regarded as pivotal for adaptive capacity.*
- Step 3. Develop a conceptual social-ecological systems model indicating relationships between important drivers, governance and management influences, and biodiversity features.*
- Step 4. Develop and validate four scenarios derived from two critical uncertainties.*

We summarise these scenario narratives and their anticipated effects on biodiversity outcomes on pages 9-12.

The scenarios were created under the assumption that governance arrangements will not change. This approach allows separate consideration of the impact of proposed alternative governance arrangements on biodiversity outcomes for each scenario.

Our proposed options for alternative governance arrangements are presented in a separate document, 'Options to Improve Biodiversity Governance Arrangements in the Australian Alps' led by Sarah Clement.

## *Climate change is consistent across all scenarios*

The effects of climate change are consistent across all scenarios, and affect most of the key drivers of biodiversity change in the focal area. By 2030, it is anticipated that climate change has resulted in warmer, drier conditions and a reduction in snow cover. Drier conditions have led to a reduction in quality and area of wetlands, and some have been replaced by grasslands or heathlands. Warmer conditions have enabled expansion of snow gum woodlands into areas that were previously occupied by grasslands and heathlands, and expansion of heathlands into areas previously occupied by grasslands. Reduced snow cover and increased erosion have eliminated most snowpatch herbfield ecological communities. Species restricted to high alpine environments are close to extinction because, under a warming climate, they lack any higher ground to move into and will be under pressure from species currently restricted to lower elevations, and due to reduced snow cover, with associated increased severity of frosts. Climate change is also expected to impact alpine bogs. The most vulnerable alpine fauna are frogs dependent on wetlands and mountain pygmy possum dependent on boulder heath.

# Steps to Scenario Planning

To create the scenarios based on a social-ecological systems analysis, we followed four steps.

## **Step 1. Identify a focal system and associated biodiversity features.**

**Alpine and subalpine ecological communities** were selected as the focal biodiversity features because of their national and international significance. Our original choice of treeless alpine and subalpine areas as the focal system was extended by participants in a stakeholder workshop (see Step 2) to include subalpine snow gum woodlands.

## **Step 2. Generate and refine key biophysical and social drivers affecting the focal biodiversity features, together with governance influences regarded as pivotal for adaptive capacity.**

These were identified and refined by the research team in consultation with key informants, and then adjusted and validated at a two-day workshop with 34 stakeholder participants in April 2013. Participants then rated the importance of each driver and strength of each influence to identify a prioritised list of the most **critical and influential drivers**.

### **Top Critical and Influential Drivers**

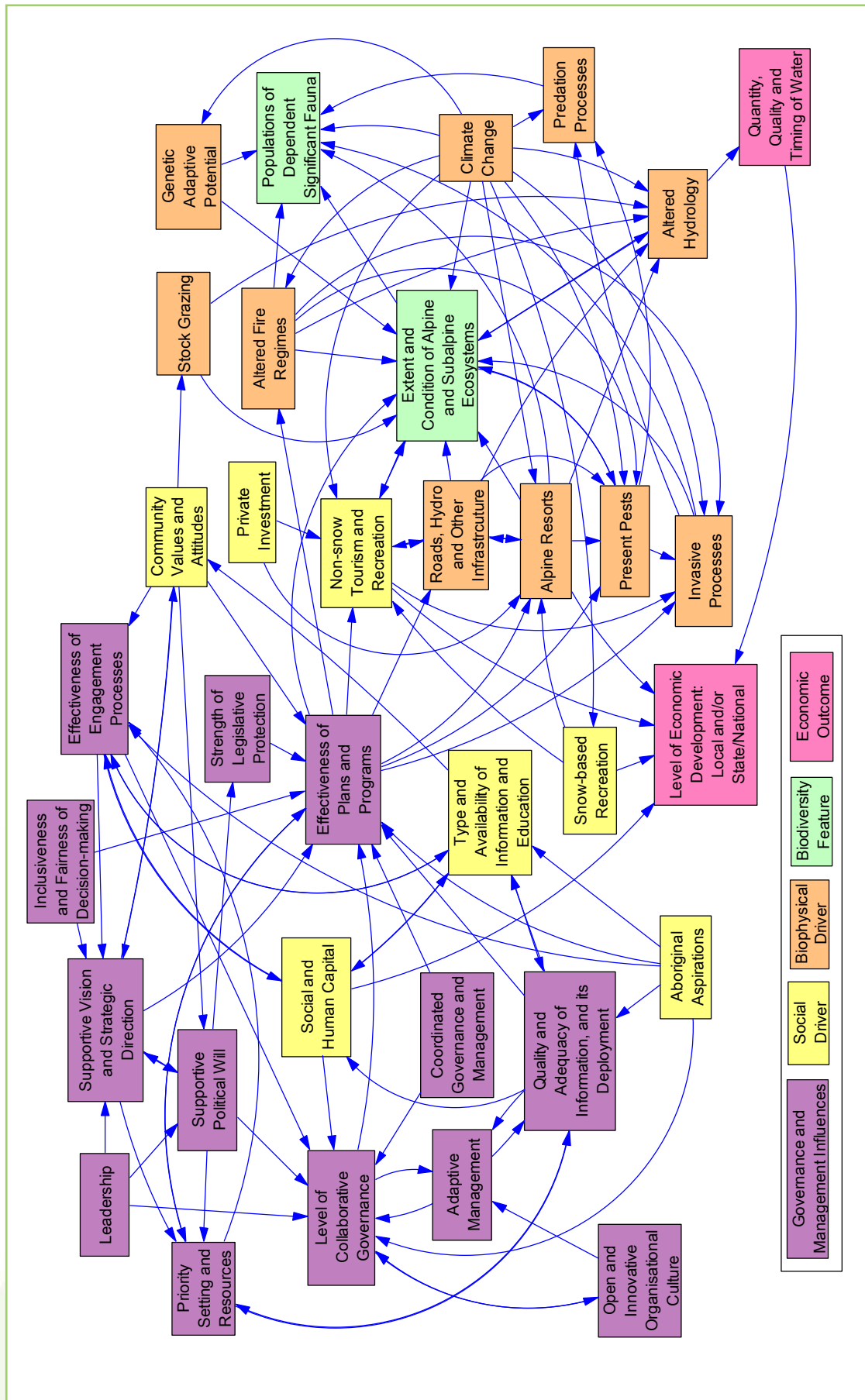
(ranked by category and in order of importance, that is the number of participants who rated drivers as 'high' or 'very high importance' and influences as 'strong' or 'very strong')

<b>Governance and Management Influences</b>	<b>Biophysical Drivers</b>
1. Supportive Political Will (27)	1. Invasive Processes (30)
2. Strength of Legislative Protection (24)	2. Present Pests (29)
3. Priority Setting and Resources (24)	3. Altered Fire Regimes (26)
4. Leadership (23)	4. Climate Change (25)
5. Adaptive Management (21)	5. Predation Processes (21)
6. Coordinated Governance and Management (21)	<b>Social and Economic Drivers</b>
7. Quality and Adequacy of Information, and its Deployment (21)	1. Community Values and Attitudes (28)
8. Effectiveness of Engagement Processes (20)	2. Social and Human Capital (28)
9. Effectiveness of Plans and Programs (20)	3. Type and Availability of Information and Education (21)
10. Supportive Vision and Strategic Direction (20)	4. Aboriginal Aspirations (14)

## **Step 3. Develop a conceptual social-ecological systems model indicating relationships between important drivers, governance and management influences, and biodiversity features.**

The research team developed an initial conceptual model, which was then modified by workshop participants. These suggested modifications were further analysed by the research team to identify elements that were common to most models, and the logic underpinning each relationship, before incorporating them into a final version, see **Conceptual Social-Ecological System** - page 5.

## Conceptual Social-Ecological System

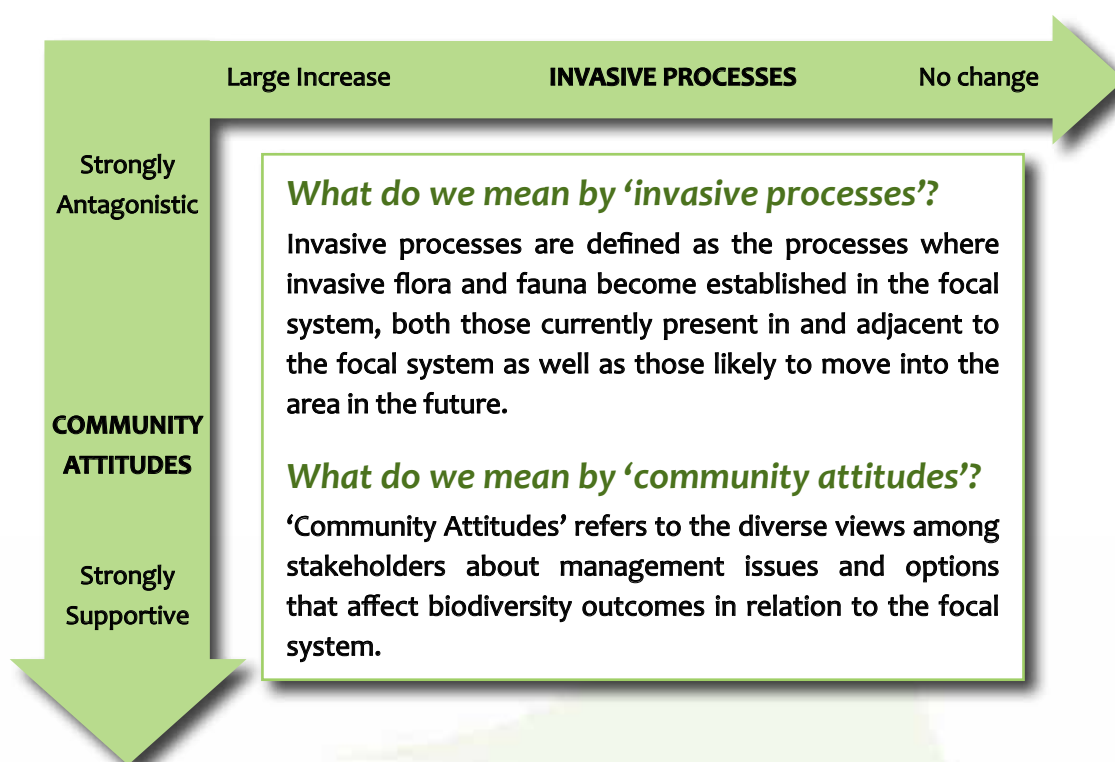


## Steps to Scenario Planning cont

### Step 4. *Develop and validate four scenarios derived from two critical uncertainties.*

To identify **two critical uncertainties**, the most important drivers identified at Step 2 were further rated by participants according to the level of uncertainty associated with their future state in 2030. Through this process and ensuing discussion, the two critical uncertainties were identified as invasive processes and community attitudes, the meaning of which are explained below. Participants then established extreme levels of these critical uncertainties, which enabled the identification of four scenario spaces. Workshop participants briefly characterised each scenario, which were further developed by the research team. The resulting scenario narratives were refined and validated by ecologists and economists from the Landscape and Policy Hub. This paper presents a summary of these scenario narratives, and their anticipated effects on biodiversity outcomes.

### The Two Critical Uncertainties



Participants then established extreme levels of these critical uncertainties, which enabled the identification of four scenario spaces (see below and Scenario Snapshots on Page 8). Workshop participants briefly characterised each scenario, which were further developed by the research team. The resulting scenario narratives were refined and validated by ecologists and economists from the Landscape and Policy Hub.

### 2030 Scenarios





# The Two Critical Uncertainties

## ***What do we mean by 'invasive processes'***

Invasive processes are defined as the processes where invasive flora and fauna become established in the focal system, including the spread of pest species currently present in and adjacent to the focal system, especially weeds such as willow and hawkweed and pest animals such as horse and deer, as well as range shifting native and non-native invasive species that are likely to move into the area in the future.



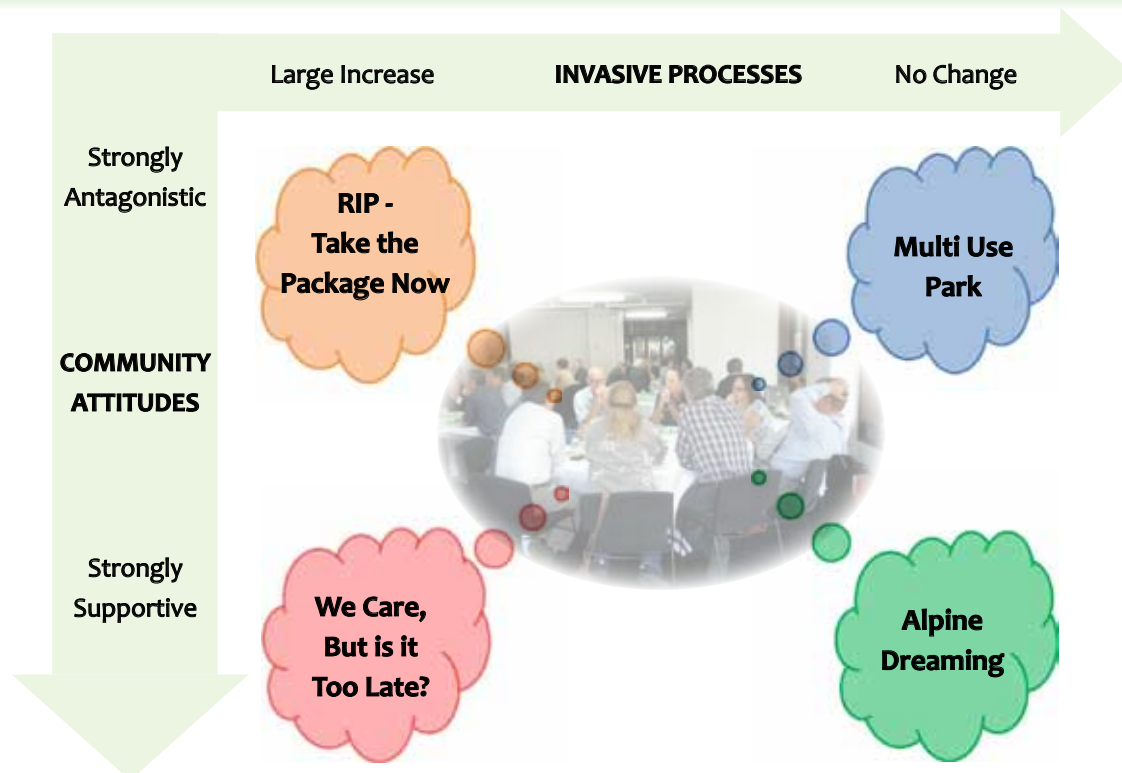
The main factor behind the uncertainty around invasive processes is not knowing what the future carrying capacity of the landscape will be for certain invasive species, such as pest animals, and the effects of interactions with affected ecosystem dynamics and other drivers of change. Workshop participants determined that a reduction in the extent of invasive processes would be implausible, so the two extremes were identified as being no change compared with a large increase in invasive processes.

## ***What do we mean by 'community attitudes'***

'Community Attitudes' refers to the diverse views among stakeholders about management issues and options that affect biodiversity outcomes in relation to the focal system. In the social-ecological model, community attitudes are part of a single social driver called Community Values and Attitudes. Given community values can be very slow to change, the emphasis in this scenario planning was attitudes which can change more readily.

Attitudes that are highly supportive of conservation are generally those that place higher importance on conservation than on other potentially conflicting orientations such as economic development. At the other end of the spectrum are attitudes that are strongly economically oriented, often to the detriment of conservation. In between are attitudes that may have a strong cultural basis, such as having horses as part of Alpine landscapes, an attitude which may not be compatible with conservation viewpoints.





### Plausible Biodiversity Outcomes under the 2030 Scenarios

RIP - Take the Package Now	Multi Use Park	We Care, But is it Too Late?	Alpine Dreaming
<b>Wetlands Extent</b> Large decline and continuing <b>Wetlands Condition</b> Very poor & worsening <b>Grasslands Extent</b> Moderate decline <b>Grasslands Condition</b> Degraded <b>Heathlands Extent</b> Some expansion <b>Heathlands Condition</b> Moderate <b>Boulder Heath Extent</b> Moderate decline <b>Boulder Heath Condition</b> Very poor <b>Snowpatch &amp; Feldmark Extent</b> - Almost disappeared <b>Snowpatch &amp; Feldmark Condition</b> - Very poor	<b>Wetlands Extent</b> Large decline but slowing <b>Wetlands Condition</b> Poor & worsening <b>Grasslands Extent</b> Small decline <b>Grasslands Condition</b> Good <b>Heathlands Extent</b> Some expansion <b>Heathlands Condition</b> Moderate <b>Boulder Heath Extent</b> Small decline <b>Boulder Heath Condition</b> Poor <b>Snowpatch &amp; Feldmark Extent</b> - Declining <b>Snowpatch &amp; Feldmark Condition</b> - Poor	<b>Wetlands Extent</b> Large decline but slowing <b>Wetlands Condition</b> Poor & worsening <b>Grasslands Extent</b> Moderate decline <b>Grasslands Condition</b> Degraded <b>Heathlands Extent</b> Some expansion <b>Heathlands Condition</b> Moderate <b>Boulder Heath Extent</b> Moderate decline <b>Boulder Heath Condition</b> Poor <b>Snowpatch &amp; Feldmark Extent</b> - Declining <b>Snowpatch &amp; Feldmark Condition</b> - Very poor	<b>Wetlands Extent</b> Moderate decline but slowing <b>Wetlands Condition</b> Poor to good depending on location <b>Grasslands Extent</b> Small decline <b>Grasslands Condition</b> Good <b>Heathlands Extent</b> Some expansion <b>Heathlands Condition</b> Good <b>Boulder Heath Extent</b> Small decline <b>Boulder Heath Condition</b> Moderate <b>Snowpatch &amp; Feldmark Extent</b> - Declining <b>Snowpatch &amp; Feldmark Condition</b> - Moderate
			





## RIP - Take the Package Now

- *Large increase in invasive processes (worst case scenario)*
- *Community attitudes strongly antagonistic to achievement of conservation outcomes*

The alpine treeless landscape is drastically and irreversibly altered and the community is resigned to this outcome.

The focal area has been abandoned to the consequences of the spread of thousands more horses, deer, rabbits and other herbivores, and an associated increase in foxes, cats and dogs. The community no longer focuses on the role that national parks play in biodiversity protection, but see them as places for other uses.

There is lack of leadership and political will to protect environmental values, with no vision, strategic direction, or effective engagement processes. Stock grazing has been reintroduced into the focal area. Structure and function of ecosystems are severely undermined by increases in invertebrate pests, as well as woody and non-woody weeds. Native plants and animals have been out competed and several species no longer exist in the wild due to increased predation. Ecological communities in the focal area are fragmented, and genetic diversity of most remaining endemic plant species is curtailed. Extensive fuel reduction burning is undertaken in lower elevation montane forests, which exacerbates the spread of invasive pests reaching higher elevations. This heavy focus on fuel reduction burning also diverts funding away from invasive species control, which is in decline and cannot address the magnitude of the problem.

All wetlands in the focal area are irreversibly degraded, and many have dried out and been converted to weedy grasslands due to peat becoming exposed from trampling of horses and deer, and then lost through erosion following more frequent and severe fire events. Together with the effects of climate change, the associated reduction in water retention and increase in water variability has led to necessary investment in infrastructure for water storage and to assist in flood mitigation associated with storm events.

Alpine resorts need these reservoirs and associated infrastructure to supplement their water supply, especially for snow-making. The poor state of the parks and climate change impacts are continually reducing financial returns for businesses and reducing park revenue. Alpine resort skiing facilities are now only located at the highest peaks. These resorts struggle to remain viable and have to be supplemented by summer-related recreation activities, such as from golf courses.

Devastated by the impact of invasive species on Indigenous natural and cultural heritage, Traditional Owners are one of the few organised community groups concerned about biodiversity conservation, but they receive no government support for their endeavours.

### RIP - Take the Package Now

#### Wetlands Extent

Large decline and continuing

#### Wetlands Condition

Very poor & worsening

#### Grasslands Extent

Moderate decline

#### Grasslands Condition

Degraded

#### Heathlands Extent

Some expansion

#### Heathlands Condition

Moderate

#### Boulder Heath Extent

Moderate decline

#### Boulder Heath Condition

Very poor

#### Snowpatch & Feldmark

Extent - Almost disappeared

#### Snowpatch & Feldmark

Condition - Very poor





# Multi Use Park

- *No change in invasive processes (best case scenario)*
- *Community attitudes strongly antagonistic to achievement of conservation outcomes*

While the landscape of the focal area is appreciated for its aesthetic appeal, the community places greater emphasis on its contribution to the promotion of tourism businesses, as a place to get away, to use as it sees fit for all sorts of pursuits, rather than as a place reserved solely for biodiversity conservation. Park users expect and are provided with increased paved access roads and tracks for bikes, horse riding and four wheel drive vehicles, viewing platforms, chalet and cabin-style accommodation, and greater use of park resources for grazing, hunting, fishing and water extraction.

Tourism businesses and activities are flourishing due in part to an increase in privately-funded development in national parks following reductions in environmental protection. Alpine resort skiing facilities are now predominantly located at the highest peaks, with an expansion and upgrade of roads to reach these locations, and use of a new non-toxic additive to water for snow-making that reduces snow melt.

Endangered iconic species such as the mountain pygmy possum are 'protected' through construction of open zoo type facilities financed through fee-paying tourists, while other less iconic species are left to die out. Reduced funding for invasive species management has led to an increase in weeds and pests. This has resulted in some spraying of weed-affected areas that undermine the aesthetic beauty of the alpine landscape. The prevalence of horse and deer is also beginning to raise some concern by sight-seers, especially due to the dangers they pose for on- and off-road drivers, and there is growing community support for private hunting groups to shoot deer and horse in the park. Limited intermittent stock grazing has been introduced and is used to attract tourists enamoured by its associated cultural heritage values.

Increased frequency and severity of fires entering the focal area from lower elevations has resulted in financial backing by resorts for measures to help protect the alpine landscape, with special emphasis on protecting infrastructure assets such as alpine resorts. Encircling and extensive fire breaks are made bigger and wider leading to increased erosion and fragmentation of the landscape and extensive fuel reduction burning is undertaken in lower elevation montane forests. Fire affected wetland areas experience peat loss, undermining their tourism potential, and further accentuating community calls to protect the area from fire.

Overall reduction in rainfall and snowmelt as well as increased runoff following storm events are the accepted realities of climate change, requiring investment in infrastructure to better manage extremes in water variability and enhance water storage capacity. Storm-related landslides has damaged many roads and highways, and all highways and resort access roads are now heavily fortified against erosion. Most resorts have invested in small reservoirs and associated infrastructure to supplement water supply for snow-making, and to provide summer-related recreation activities. Any leftover water not used is sold to hydropower companies, which have also expanded their dams, aqueducts and other infrastructure given extended droughts and increased inability to capture runoff.

Traditional Owner communities have also established tourism ventures, and those involved are allowed to live on country as long as their activities do not interfere with or affect the enjoyment of other parks users.

## Multi Use Park

### Wetlands Extent

Large decline  
but slowing

### Wetlands Condition

Poor & worsening

### Grasslands Extent

Small decline

### Grasslands Condition

Good

### Heathlands Extent

Some expansion

### Heathlands Condition

Moderate

### Boulder Heath Extent

Small decline

### Boulder Heath Condition

Poor

### Snowpatch & Feldmark

Extent - Declining

### Snowpatch & Feldmark

Condition - Poor





We Care,  
But is it  
Too Late?

## We Care, But is it Too Late?

- *Large increase in invasive processes (worst case scenario)*
- *Community attitudes strongly supportive of achievement of conservation outcomes*

Repeated intense fire events and growth and spread of invasive pests have devastated the focal system. The community is well-informed about the extent of the crisis facing the alps, which is seen as a blight on the nation.

Feral horse and deer numbers are at record levels in the focal area, and cats, foxes, dogs, pigs, rabbits and hares are also prevalent. Public and philanthropic funding for invasive species control has increased, and volunteers contribute their time to invasive species control, especially for removal of weeds. There is considerable community energy and political support to stem the spread of invasive pests, with a strong focus on adaptive management. Parks agencies work closely with researchers, backed up by considerable and effective community monitoring.

Flexible burning management practices with a biodiversity objective are undertaken at lower altitudes in the alps parks, and at higher elevations the focus is on attempting to manage fire to create a mosaic of burnt patches. Extensive post-fire intervention is undertaken to assist recovery and rehabilitation of native ecological communities and species, but these efforts are undermined by ongoing spread of invasives.

Community support has resulted in political will for strong legislation and pest eradication measures. Aerial culling is becoming a favoured way to reduce horse numbers, and dingoes are being introduced to reduce cat, fox and rabbit populations. Carefully managed hunting expeditions have also been introduced as another strategy to reduce numbers of feral horse, deer, pigs and wild dogs.

Despite these measures, irreversible changes have already taken place, with several species already extinct. 'Open' zoo protection zones financed through fee-paying tourists and/or philanthropic interests are used to save species such as mountain pygmy possum from predation.

A concerted scientific effort is invested in tracking and saving remaining broad-toothed rats in the face of take-over by bush rats. Intense fires are the last straw for fire sensitive ecosystems, especially wetlands. There is a concerted effort to save as many wetlands as possible from completely drying out, but it feels like a losing battle against constant breaches of containment lines by horses and deer, loss of peat through erosion following fire events, increased severity of storm events and associated erosion, long periods of extended drought, and continued spread of invasive plants into the wetland areas. Amphibians dependent on wetlands habitat are extremely rare due to destruction of wetlands. Active manipulation of the landscape for wetlands preservation is now being exercised, especially given the noticeable drop in water quality and yield emanating from the alpine areas.

The impact of climate change has forced a massive de-investment in resort infrastructure. The only infrastructure allowed in the parks has to meet strict environmentally-friendly guidelines, and only for companies providing eco-tourism services. Cross-country skiing is the only snow-related winter recreational activity pursued. Conservation non-government organisations combine sight-seeing tours with volunteer work brigades dedicated to the removal of invasive weeds. Increased public and philanthropic funding for invasive species control provide employment and training for Traditional Owners as well as exchanges with park managers on cultural heritage site protection.

Traditional Owners are active providers of eco-tourism services, and Indigenous employment and facilities to promote cultural awareness are encouraged.

### We Care, But is it Too Late?

#### Wetlands Extent

Large decline  
but slowing

#### Wetlands Condition

Poor & worsening

#### Grasslands Extent

Moderate decline

#### Grasslands Condition

Degraded

#### Heathlands Extent

Some expansion

#### Heathlands Condition

Moderate

#### Boulder Heath Extent

Moderate decline

#### Boulder Heath Condition

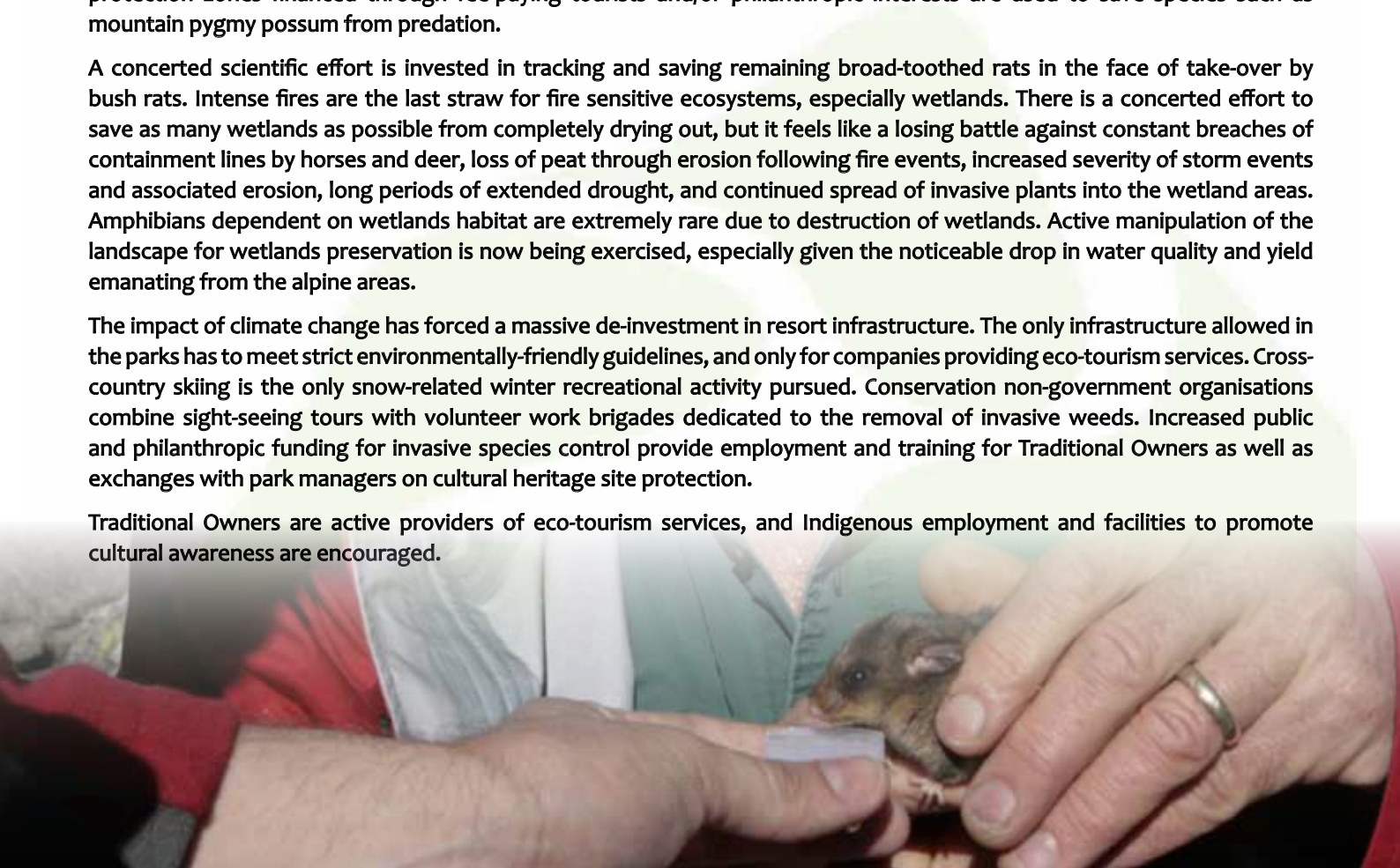
Poor

#### Snowpatch & Feldmark

Extent - Declining

#### Snowpatch & Feldmark

Condition - Very poor







# Alpine Dreaming

- *No change in invasive processes (best case scenario)*
- *Community attitudes strongly supportive of achievement of conservation outcomes*

The Australian community is proud of the cultural and natural heritage that has been preserved in the alpine national parks, and actively support measures to ensure the spread of invasive species does not get out of control. Public and philanthropic funding for biodiversity conservation and invasive species control continues to rise to meet the challenge, and volunteers increasingly contribute their time.

There is strong community leadership and increased partnership arrangements, so parks agencies can benefit from community involvement and education. Dingoes have been reintroduced, and their function as predators in the alpine ecosystem is actively and adaptively monitored and managed to enhance biodiversity outcomes against other invading predators such as foxes, cats and wild dogs. The majority of the community approve of a full range of strategies to reduce populations of feral horses and deer, but appreciate that complete eradication is impossible. Zoned strategies of prevention, eradication, containment and asset protection are well instituted and working well, especially given the level of volunteer support that can be called upon at short notice.

The protection of alpine and subalpine wetlands from the negative impact of horses, deer and pigs is a high priority. Most wetlands are degraded, and the loss of peat is a major concern. Government agencies respond with proactive adaptive management strategies, especially to explore human intervention to rehabilitate highly affected wetlands, supported by wetlands researchers.

Government agencies with the support of volunteers manage lower elevation ecosystems to prevent wild fires moving upwards into the focal system, and manage fires in the focal system to enhance biodiversity outcomes. Research sheds light on pre-European fire regimes, which helps retrieve Indigenous cultural heritage related to fire, and Traditional Owners are now employed on government funded programs to assist with biodiversity-friendly burning practices. Adaptive management approaches are adopted to explore the best ways to support post-fire recovery of topsoils and native vegetation.

There is an active and well-funded research program into native pollinators to understand their diversity and ecosystem functions, and to ensure their survival in the face of climate change impacts. Public access to the alpine areas is driven by a desire for sustainability, with increased nature-based tourism operating in the focal area. Because snow-related recreational activities are now greatly diminished, structural adjustment is provided to ski resort businesses to transition towards provision of eco-tourism related activities. Cross-country skiing is the only snow-related winter recreational activity pursued. Camping is restricted to designated areas, where impact-minimising facilities are provided. Isolated chalet or cabin-style accommodation is seen as a rare privilege, and there is a long waiting list for people wishing to experience nature in this way, with park rangers as their guides. Conservation-friendly path structures are used, and where these paths have not yet been constructed, park visitors are aware of the need to minimise damage to and widening of tracks, and to keep to these paths wherever possible.

Respect and recognition of Aboriginal aspirations and ownership has increased appreciation for the landscape having connected cultural and natural heritage. There is an increased number of Traditional Owners working in the area on well-funded long-term programs for invasive species control, which provide employment that enables Traditional Owners' greater access to their country and increasing their exchanges with park managers on cultural heritage site protection. Traditional Owners have become active providers of eco-tourism services, which are popular and lucrative sources of income.

## Alpine Dreaming

### Wetlands Extent

Moderate decline but slowing

### Wetlands Condition

Poor to good depending on location

### Grasslands Extent

Small decline

### Grasslands Condition

Good

### Heathlands Extent

Some expansion

### Heathlands Condition

Good

### Boulder Heath Extent

Small decline

### Boulder Heath Condition

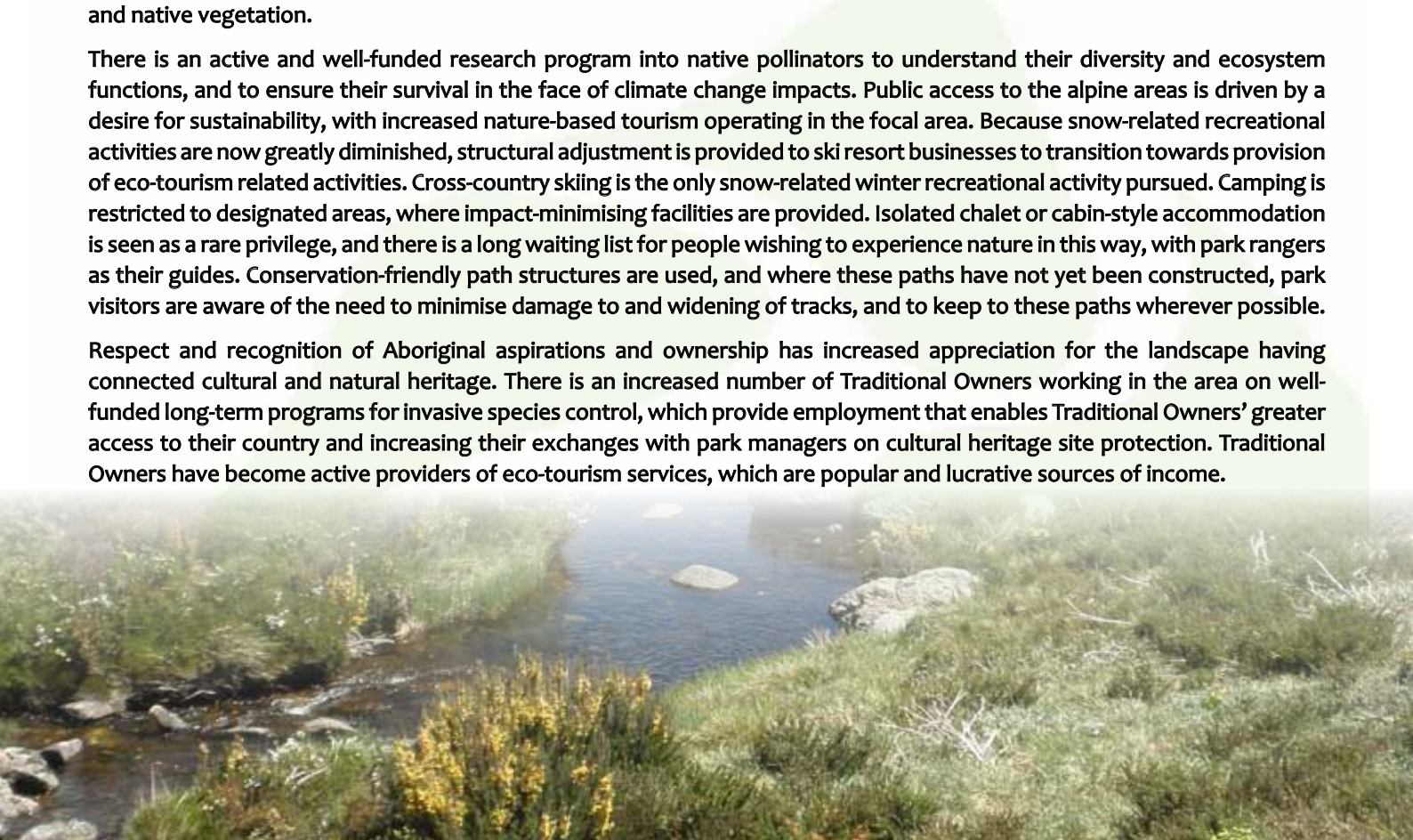
Moderate

### Snowpatch & Feldmark

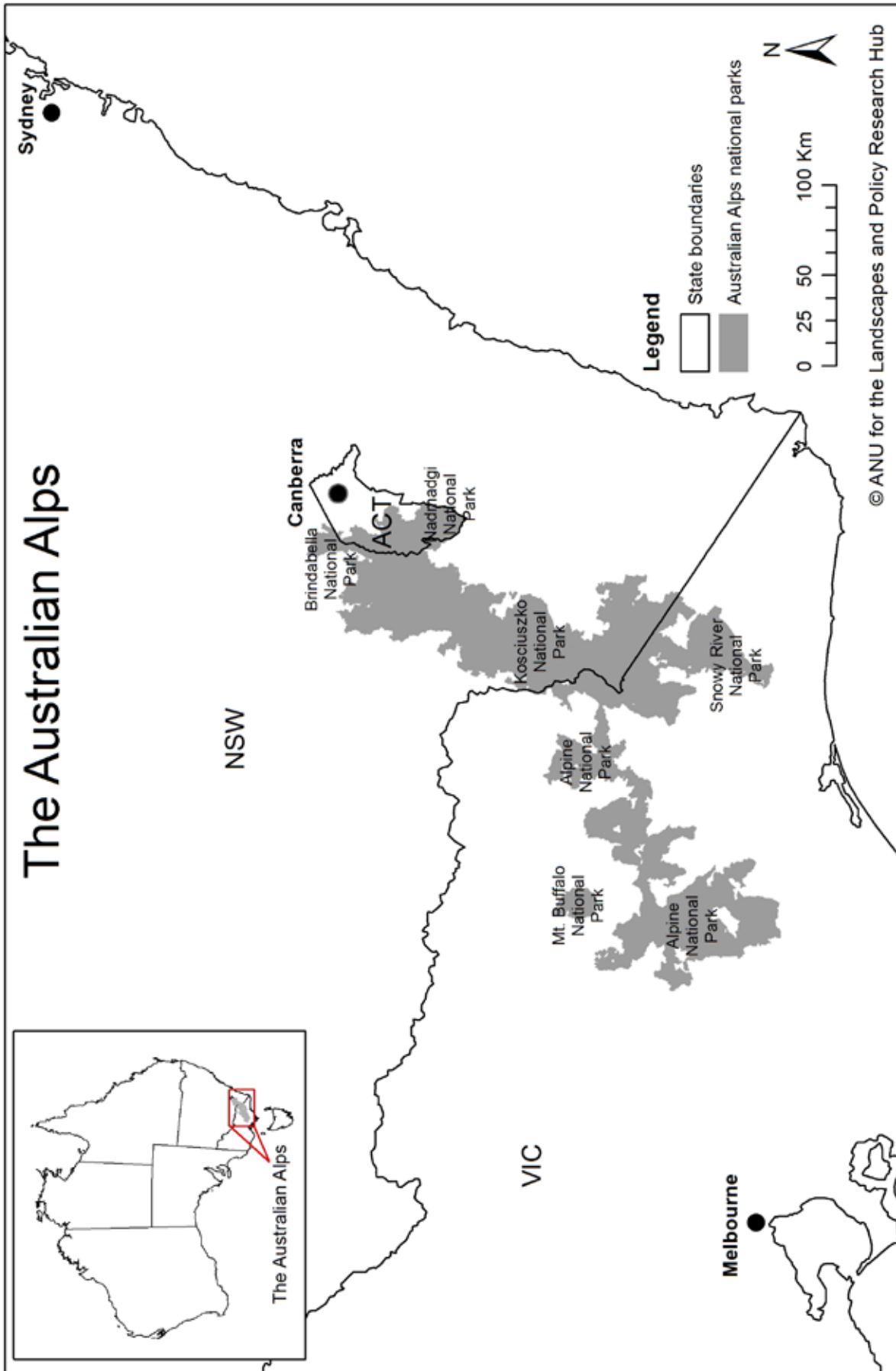
Extent - Declining

### Snowpatch & Feldmark

Condition - Moderate



# The Australian Alps



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## Acknowledgements

We are particularly grateful for the generosity of all those who have participated in one-on-one 'key informant' interviews and workshops. Throughout the research, we have engaged with more than 150 people who work in the region, have cultural connections, are responsible for some aspect of its regulation, or have interests in the future of the Australian Alps. The development of the scenario narratives would not have been possible without their knowledge, experience and opinions.

In particular, we acknowledge and thank Gill Anderson for her guidance and advice on our engagement activities with the people of the Australian Alps. Her knowledge of the role of the alpine managers in biodiversity governance, and the connection between people and nature was critical to feeding into the scenario planning process. Gill's grass-roots appreciation of the alpine ecology and sensitive alpine environment was invaluable.

Finally, we appreciate the contributions to both the consultation process and the production of the background documents by Suzie Gaynor, the hub's Communication Manager. Suzie's talent for taking our text and massaging it into readable, accessible publications, in a remarkably short timeframe, has contributed enormously to the success of our communications.

### **Schedule of consultation and engagement**

In their research, the Social and Institutional Futures Team (Sue Moore, Michael Lockwood, Michael Mitchell and Sarah Clement) has liaised and consulted with people from the Australian Alps and the Tasmanian Midlands, and all levels of government with an interest in these areas. The key engagement activities included workshops, interviews, surveys and focus groups as follows:

Key Informant Interviews ( <i>Michael Mitchell</i> )	Aug 2012
	Jul & Oct 2013
Stakeholder Interviews ( <i>Sarah Clement</i> )	Feb-Apr 2013
Scenario Planning Workshops - round 1	
Tasmanian Midlands	1 Mar 2013
Australian Alps	10-11 Apr 2013
Focus Groups on Governance Options	Feb-Mar 2014
Scenario Planning Workshops - round 2	
Tasmanian Midlands	25 Mar 2014
Australian Alps	1-2 Apr 2014

## About the Landscapes and Policy Hub

The Landscapes & Policy Hub is one of five research hubs funded by the Australian Government's National Environmental Research Program, for four years (2011-2014) to study biodiversity conservation.

We integrate ecology and social science to provide guidance for policymakers on planning and managing biodiversity at a regional scale. We develop tools, techniques and policy options to integrate biodiversity into regional-scale planning.

The University of Tasmania hosts the hub and involves researchers from the University of Tasmania (UTAS), The Australian National University (ANU), Murdoch University, the Antarctic Climate & Ecosystems Cooperative Research Centre (ACE CRC), Griffith University and Charles Sturt University (CSU).

