



**NSW National Parks and Wildlife Service**

# **Kosciuszko Offset Project**

**Annual report 2022–23**





## Acknowledgement of Country

Department of Climate Change, Energy, the Environment and Water acknowledges the Traditional Custodians of the lands where we work and live.

We pay our respects to Elders past, present and emerging.

This resource may contain images or names of deceased persons in photographs or historical content.

© 2024 State of NSW and Department of Climate Change, Energy, the Environment and Water

With the exception of photographs, the State of NSW and Department of Climate Change, Energy, the Environment and Water (the department) are pleased to allow this material to be reproduced in whole or in part for educational and non-commercial use, provided the meaning is unchanged and its source, publisher and authorship are acknowledged. Specific permission is required to reproduce photographs.

Learn more about our copyright and disclaimer at [www.environment.nsw.gov.au/copyright](http://www.environment.nsw.gov.au/copyright)

Artist and designer Nikita Ridgeway from Aboriginal design agency – Boss Lady Creative Designs, created the People and Community symbol.

Cover photo: Yarrangobilly River, Kosciuszko National Park. Elinor Sheargold /DCCEEW

### Published by:

Environment and Heritage  
Department of Climate Change,  
Energy, the Environment and Water  
Locked Bag 5022, Parramatta NSW 2124  
Phone: +61 2 9995 5000 (switchboard)  
Phone: 1300 361 967 (Environment and Heritage enquiries)  
TTY users: phone 133 677, then ask for 1300 361 967  
Speak and listen users: phone 1300 555 727, then ask for 1300 361 967  
Email: [info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au)  
Website: [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

ISBN 978 1 923285 83 5  
EH 2024/0357  
November 2024



Find out more about your environment at:

[environment.nsw.gov.au](http://environment.nsw.gov.au)

# Contents

Introduction	1
Kosciuszko Offset Project	1
Report structure	1
Overview	2
Approval	2
Financial summary	3
Overview	3
Biodiversity	6
Kosciuszko Offset Strategy	6
Kosciuszko offset action plans	6
Reporting on biodiversity	6
Biodiversity offset payments	7
Conservation actions to 30 June 2023	7
Adaptive management	8
Land management	9
Recreation	10
Heritage	11
Park premium	12
Soil landscape profiling	12
Spoil compensation	13
Case study: Alpine bogs and fens horse enclosure fencing	14
Background	14
Monitoring	14
Metrics	16

## List of tables

Table 1	Kosciuszko Offset Project financial summary 2018 to 2023	3
Table 2	Offset payments and interest received by payment type, 2018 to 2023	4
Table 3	Offset expenditure 2018 to 2023	4
Table 4	Total biodiversity offset payments by project phase	7
Table 5	Biodiversity offset payments received to 30 June 2023	7
Table 6	Species, threatened ecological communities (TEC) and ecosystem conservation actions – summary to 30 June 2023	8
Table 7	Land management actions underway or completed to 30 June 2023	9
Table 8	Recreation actions underway or completed to 30 June 2023	10
Table 9	Park premium actions underway or completed to 30 June 2023	12
Table 10	Spoil compensation actions underway or completed to 30 June 2023	13

## List of figures

Figure 1	Little Tin Mines, Pilot Wilderness Kosciuszko National Park – pre-fencing 11 May 2022	15
Figure 2	Little Tin Mines, Pilot Wilderness Kosciuszko National Park – post-fencing 21 February 2023	15

# Introduction

## Kosciuszko Offset Project

This report sets out the NSW National Parks and Wildlife Service's activities on the Kosciuszko Offset Project for the 2022–23 financial year. This is the first annual report under the project. It includes information from the previous 4 years since the project began in 2018. The National Parks and Wildlife Service will now deliver annual reports after the end of each financial year.

The Kosciuszko Offset Project manages offset funds received due to Snowy 2.0 activities in Kosciuszko National Park. The project is a requirement under the Snowy 2.0 planning approvals. It includes:

- a program framework
- a prioritisation plan
- the [Kosciuszko Offset Strategy](#)
- [Kosciuszko offset action plans](#) for each threatened species, threatened ecological community and ecosystems affected by Snowy 2.0
- a recreation strategy
- a heritage strategy.

The project has undertaken limited offset expenditure to date. This is because during the first 4 years of the project, the focus was on contributing to planning approvals and finalising leases and licences that allow Snowy 2.0 to operate in Kosciuszko National Park.

The department expects offset expenditure will increase considerably from 2023–24 due to:

- the approval and publication of the Kosciuszko Offset Strategy (June 2023)
- the drafting and staged approval of Kosciuszko offset action plans for threatened species, threatened ecological communities and ecosystems throughout 2023–24
- the development of the recreation strategy and heritage strategy, which will be finalised over the next year.

Read more about the Kosciuszko Offset Project at the [Environment and Heritage website](#).

## Report structure

This report reflects the structure of the Kosciuszko Offset Project and the various offsets and compensation received. It comprises the following sections:

- financial summary
- biodiversity
- land management
- recreation
- heritage
- park premium
- spoil compensation.

## Overview

The National Parks and Wildlife Service will receive up to \$106.5 million in offset funds. The majority of funds are biodiversity offsets (\$92.9 million). Drafting is underway for 19 species Kosciuszko offset actions plans (flora and fauna) and one threatened ecological community action plan has commenced<sup>1</sup>. Work has also started on the 4 ecosystem action plans.

Although most Kosciuszko offset action plans are still being developed, the project’s governance arrangements allow the National Parks and Wildlife Service to undertake time-critical actions before an action plan is approved. This includes species surveys and intensive weed and feral animal control. This is why some species conservation actions have already started (Table 6).

This year’s annual report covers **activities and actions** rather than **outcomes and progress** towards Kosciuszko offset action plan biodiversity objectives. This is because action plans and conservation objectives for each species, threatened ecological community and ecosystem have not yet been approved. This includes determining metrics and biodiversity measurement methodologies.

The report also features a case study to highlight one of the actions that will provide conservation gains for Kosciuszko National Park. The case study shows how the National Parks and Wildlife Service used offsets to build horse enclosure fencing to protect threatened alpine bogs and fens in the Pilot Wilderness area.

This work also included conservation actions to enhance 3 threatened, nationally significant species listed in the Kosciuszko Offset Strategy: the broad-toothed rat, alpine she-oak skink and Max Mueller’s burr-daisy.

## Approval

Date/approval	
Date prepared	May 2024
Date approved	20 July 2024
Approved by	Atticus Fleming, Deputy Secretary NPWS

---

<sup>1</sup> Note that the *Smoky mouse Kosciuszko offset action plan* was approved in September 2023.

# Financial summary

## Overview

The National Parks and Wildlife Service will receive up to \$106.5 million<sup>2</sup> in total offset funds (excluding rent revenue) due to Snowy 2.0 activities in Kosciuszko National Park (plus any interest earned).

As shown in Table 1, as of 30 June 2023, the National Parks and Wildlife Service:

- received \$62.38 million in offset payments
- earned \$23,149 in interest on the investment of these funds in an interest-bearing account, pending allocation to offset actions to benefit Kosciuszko National Park (including reinvestment of interest earned into the Kosciuszko Offset Project)
- spent \$1.187 million to 30 June 2023.

**Table 1 Kosciuszko Offset Project financial summary 2018 to 2023**

Financial year	Offsets received	Interest earned <sup>3</sup>	Offsets spent on Kosciuszko National Park	Total funds remaining (offsets received plus interest minus expenditure)
2018–19	\$10,511,000	\$0	\$7,845	
2019–20	\$2,944,687	\$0	\$16,241	
2020–21	\$18,405,000	\$0	\$221,720	
2021–22	\$14,760,000	\$23,149	\$198,758	
2022–23	\$15,760,000	\$TBD <sup>4</sup>	\$742,582	
<b>Total</b>	<b>\$62,380,687</b>	<b>\$23,149</b>	<b>\$1,187,146</b>	<b>\$61,216,690</b>

<sup>2</sup> The planning approval allows the Main Works biodiversity offset payment to be released in stages, with 80% of the total payment (\$59.04 million) paid over the first 3 years. The payment of the remaining 20% (\$14.76 million) is conditional on the final disturbance area. The intent of this condition is to create an incentive for Snowy Hydro Limited to reduce the disturbance area and biodiversity impacts of Snowy 2.0 on Kosciuszko National Park.

<sup>3</sup> During the establishment phase, offset revenue was placed in an interest-bearing account in 2021–22, pending allocation to offset actions. The first interest payment occurred in 2021–22. All interest earned during the life of the project will be reinvested into the Kosciuszko Offset Project to further benefit the park.

<sup>4</sup> To be determined. Funds are kept in a department-wide interest-earning account. Interest will be calculated by departmental financial controllers and apportioned relative to the Kosciuszko Offset Project funds invested in this account.

## Kosciuszko Offset Project: annual report 2022–23

Table 2 provides a breakdown of offsets and interest received by financial year and by offset type. Offset types include biodiversity, park values, land management, recreation and heritage.

Table 3 provides an overview of offset expenditure to 30 June 2023. Tables 6 to 10 provide further details on offset actions, projects and expenditure.

**Table 2    Offset payments and interest received by payment type, 2018 to 2023**

Financial year	Payment type	Amount received
2018–19	Exploratory Works – biodiversity	\$5,548,223
	Exploratory Works – park premium	\$4,962,777
	<b>Total 2018–19</b>	<b>\$10,511,000</b>
2019–20	Exploratory Works modification 1 – biodiversity	\$2,639,697
	Exploratory Works modification 2 – biodiversity	\$304,990
	<b>Total 2019–20</b>	<b>\$2,944,687</b>
2020–21	Main Works – biodiversity	\$14,760,000
	Main Works – recreation	\$1,995,000
	Main Works – spoil	\$1,650,000
	<b>Total 2020–21</b>	<b>\$18,405,000</b>
2021–22	Main Works – biodiversity	\$14,760,000
	Interest	\$23,149
	<b>Total 2021–22</b>	<b>\$14,783,149</b>
2022–23	Main Works – biodiversity	\$14,760,000
	Transmission Connection – park values	\$1,000,000
	Interest	\$TBD
	<b>Total 2022–23</b>	<b>\$15,760,000</b>
	<b>Total 2018–19 to 2022–23</b>	<b>\$62,403,836</b>

**Table 3    Offset expenditure 2018 to 2023**

Financial year	Offset category	Expenditure type	Cost
2018–19	Land management	Enhanced feral animal management	\$7,845
		<b>Total 2018–19</b>	<b>\$7,845</b>
2019–20	Land management	Enhanced feral animal management	\$16,241
		<b>Total 2019–20</b>	<b>\$16,241</b>
2020–21	Biodiversity	Alpine bogs and fens horse exclosure fencing	\$77,216
		Recreation	Port Philip Trail road realignment survey
	Land management	Enhanced weed management	\$28,181
		Enhanced feral animal management	\$46,402
	Park premium	Soil landscape profiling Yarrangobilly	\$28,216
	Park premium	Rule Creek bridge replacement Yarrangobilly	\$5,614



## Kosciuszko Offset Project: annual report 2022–23

Financial year	Offset category	Expenditure type	Cost
	Park premium	Yarrangobilly Caves thermal pool access	\$32,591
		<b>Total 2020–21</b>	<b>\$221,720</b>
2021–22	Biodiversity	Alpine bogs and fens horse enclosure fencing	\$28,588
	Biodiversity	Ox-eye daisy management	\$27,652
	Biodiversity	Alpine tree frog chytrid research and management	\$53,850
	Land management	Enhanced weed control management	\$20,482
	Park premium	Soil landscape profiling Yarrangobilly	\$61,783
	Park premium	Yarrangobilly Caves thermal pool access	\$6,403
		<b>Total 2021–22</b>	<b>\$198,758</b>
2022–23	Biodiversity	Alpine bogs and fens horse enclosure fencing	\$7,495
	Biodiversity	Smoky mouse surveys	\$23,245
	Land management	Enhanced weed management	\$47,689
	Recreation	Bullocks Hill campground upgrade	\$28,007
	Recreation	Denison campground upgrade	\$70,663
	Park premium	Blue Waterholes campground upgrade	\$33,261
	Park premium	Snow gum dieback research and management	\$25,000
	Park premium	Yarrangobilly Caves thermal pool access	\$459,006
	Spoil compensation	Yarrangobilly Caves thermal pool access	\$29,762
	Spoil compensation	Soil landscape profiling whole of park	\$18,391
	Spoil compensation	Charlotte Pass car parking scope of works	\$63
		<b>Total 2022–23</b>	<b>\$742,582</b>
		<b>Total expenditure 2018 to 2023</b>	<b>\$1,187,146</b>

# Biodiversity

## Kosciuszko Offset Strategy

The Kosciuszko Offset Strategy sets out how the department will spend biodiversity offsets under the Kosciuszko Offset Project. It provides a framework to deliver a biodiversity gain in Kosciuszko National Park equivalent to 120% of the biodiversity loss identified in the Snowy 2.0 environmental assessments.

The strategy provides for actions that will generate a benefit exceeding requirements of the NSW and Australian Government offset conditions. This means generating a net conservation gain for identified threatened species, threatened ecological communities and ecosystems.

## Kosciuszko offset action plans

Each threatened species, threatened ecological community and ecosystem listed in the strategy will have an action plan.

Action plans provide:

- objectives and targets
- specific actions
- threats being addressed
- the location, timing and costs of each action.

Offset action plans also outline how the National Parks and Wildlife Service will measure biodiversity benefits. This includes what will be measured, the metrics used, the methodology and monitoring design, the timing and frequency of measurement, and the costs of this work.

## Reporting on biodiversity

The Kosciuszko Offset Strategy outlines annual reporting requirements for impacted species, ecological communities and ecosystems. This means reports must:

- detail expenditure from the biodiversity offset fund on agreed actions under the Kosciuszko offset action plans
- outline any interest earned and reinvested into the offset program
- provide details about the conservation actions carried out for each approved threatened species, threatened ecological communities and threatened ecosystem action plan
- provide specific and measurable details on progress towards each Kosciuszko offset action plan objective that has been delivered. This includes the proportion of the proposed conservation actions achieved and proportion yet to be achieved if known. It also includes a summary of monitoring data on the effectiveness of conservation actions
- show the application of adaptive management principles to each action plan to improve their effectiveness.

## Biodiversity offset payments

A total of up to \$92.9 million in biodiversity offsets will be paid to the National Parks and Wildlife Service (Table 4). As of 30 June 2023, the department has received \$52.8 million in biodiversity offsets (Table 5).

The remaining biodiversity payments will be received by the end of 2024, pending payment of the final Main Works biodiversity offset payment, and commencement of the Transmission Connection phase of the project.

**Table 4 Total biodiversity offset payments by project phase**

Exploratory Works	Exploratory Works modification 1	Exploratory Works modification 2	Main Works	Transmission Connection	Total
\$5,548,223	\$2,639,697	\$304,990	\$73,800,000 <sup>5</sup>	\$10,586,027	<b>\$92,878,937</b>

**Table 5 Biodiversity offset payments received to 30 June 2023**

Project phase	Offset payment date	Amount
Exploratory Works	February 2019	\$5,548,223
Exploratory Works modification 1	February 2020	\$2,639,697
Exploratory Works modification 2	May 2020	\$304,990
Main Works	October 2020, September 2021, October 2022	\$44,280,000
<b>Total</b>		<b>\$52,772,910</b>

## Conservation actions to 30 June 2023

Even though offset action plans have not yet been approved, some species conservation actions have started. The National Parks and Wildlife Service has undertaken these actions under governance arrangements that allow the department to do time-critical work. This includes species surveys and intensive weed and feral animal control.

---

<sup>5</sup> The planning approval allows the Main Works biodiversity offset payment to be released in stages, with 80% of the total payment (\$59.04 million) paid over the first 3 years. The payment of the remaining 20% (14.76 million) is conditional on the final disturbance area. The intent of this condition is to create an incentive for Snowy Hydro Limited to reduce the disturbance area and biodiversity impacts of Snowy 2.0 on Kosciuszko National Park.

**Table 6 Species, threatened ecological communities (TEC) and ecosystem conservation actions – summary to 30 June 2023**

Species/TEC/Ecosystem	Conservation action	Expenditure year	Expenditure
Alpine bogs and fens	Horse enclosure fencing – Pilot Wilderness, Kosciuszko National Park	2020–21	\$77,216
		2021–22	\$28,588
		2022–23	\$7,495
		<b>Total</b>	<b>\$113,299</b>
Alpine tree frog	Chytrid research and management	2021–22	\$53,850
		<b>Total</b>	<b>\$53,850</b>
Grasslands	Ox-eye daisy management	2021–22	\$27,652
		<b>Total</b>	<b>\$27,652</b>
Smoky mouse	Surveys, northern Kosciuszko National Park	2022–23	\$23,245
		<b>Total</b>	<b>\$23,245</b>
		<b>Overall total</b>	<b>\$218,046</b>

## Adaptive management

Adaptive management is one of the project’s key principles. It involves adjusting and adapting the approach as work progresses. This will help to ensure the objectives are achieved for each species, threatened ecological community and ecosystem.

There are no adaptive management actions to report for this reporting period. This is because no offset action plans had been approved before 30 June 2023. Future annual reports will document how the department has applied adaptive management.



## Land management

Under the Exploratory Works park premium, a 20-year enhanced weed and exotic tree management program totalling \$1 million will focus on the Yarrangobilly and Kiandra catchments. The Exploratory Works park premium also includes \$300,000 for a 20-year enhanced vertebrate feral animal management program in Kosciuszko National Park. This program will cull deer, foxes and cats in the Yarrangobilly catchment and Goobarragandra valley.

The Yarrangobilly and Kiandra catchments are the most directly affected by Snowy 2.0 activities. The enhanced weed and feral animal control programs will build on existing National Parks and Wildlife Service programs already operating in these catchments.

Table 7 sets out expenditure of land management offset funds to 30 June 2023.

**Table 7 Land management actions underway or completed to 30 June 2023**

Financial year	Conservation action	Expenditure	Status
2018–19	Enhanced feral animal management, northern Kosciuszko National Park (\$300,000 program over 20 years)	\$7,845	Ongoing
2019–20	Enhanced feral animal management, northern Kosciuszko National Park (\$300,000 program over 20 years)	\$16,241	Ongoing
2020–21	Enhanced weed management, northern Kosciuszko National Park (\$1 million program over 20 years)	\$28,181	Ongoing
	Enhanced feral animal management, northern Kosciuszko National Park (\$300,000 program over 20 years)	\$46,402	Ongoing
2021–22	Enhanced weed management, northern Kosciuszko National Park (\$1 million program over 20 years)	\$20,482	Ongoing
2022–23	Enhanced weed management, northern Kosciuszko National Park (\$1 million program over 20 years)	\$47,689	Ongoing
<b>Total</b>		<b>\$166,840</b>	

## Recreation

The National Parks and Wildlife Service received \$2.405 million in recreation offsets. This is from the Exploratory Works park premium and Main Works recreation offsets.

These funds will be used to improve the amenity of Kosciuszko National Park. This includes campground upgrades, improved amenity access, upgraded walking trails, new day use facilities and major precinct upgrades at Yarrangobilly and Currango.

Table 8 sets out recreation offset spending of \$102,170.

**Table 8 Recreation actions underway or completed to 30 June 2023**

Financial year	Action	Expenditure	Status
2018–19	Nil	\$0	
2019–20	Nil	\$0	
2020–21	Port Philip Trail realignment – initial survey works	\$3,500	Completed
2021–22	Nil	\$0	
2022–23	Bullocks Hill campground upgrade, northern Kosciuszko National Park – new horse yards	\$28,007	Completed
	Denison campground upgrade, northern Kosciuszko National Park – installation of 2 new toilets	\$70,663	Completed
<b>Total</b>		<b>\$102,170</b>	

## Heritage

The Snowy 2.0 planning approvals do not require the payment of heritage-specific offsets. However, the National Parks and Wildlife Service will use offset payments to benefit Aboriginal cultural heritage and historic heritage within Kosciuszko National Park. This includes projects funded under the Exploratory Works park premium, Main Works spoil compensation and Transmission Connection park values.

The Kosciuszko Offset Project includes developing a heritage strategy. This will set out how the department will use offsets to enhance Aboriginal cultural heritage and historic heritage within the park.

Development of the heritage strategy will begin in 2025–26.

## Park premium

The Exploratory Works planning approval requires Snowy Hydro Limited to pay the National Parks and Wildlife Service a park premium of \$4,962,777 to offset its impacts on Kosciuszko National Park. This payment recognises that the project is taking place in a national park.

The National Parks and Wildlife Service will use these funds to enhance Kosciuszko National Park and mitigate the effects of the development on the conservation, recreation and heritage values of the park.

Table 9 sets out expenditure on park premium actions to 30 June 2023.

### Soil landscape profiling

Park premium will be used for projects such as soil landscape profiling in the Yarrangobilly catchment in the park. This \$90,000 program is the first stage of a longer-term mapping effort for the whole Kosciuszko National Park.

Soil profiling identifies, maps and describes high-value and vulnerable soils. This work helps the National Parks and Wildlife Service to manage vegetation, fauna, fire, visitation and infrastructure development.

The project will lead to a better understanding of the spatial distribution and variation of Kosciuszko National Park soils.

**Table 9 Park premium actions underway or completed to 30 June 2023**

Financial year	Action	Expenditure	Status
2018–19	Nil	\$0	
2019–20	Nil	\$0	
2020–21	Yarrangobilly thermal pool access upgrade	\$32,591	Completed
	Yarrangobilly Rule Creek bridge replacement	\$5,614	Completed
	Soil landscape profiling Yarrangobilly	\$28,216	Completed
2021–22	Yarrangobilly thermal pool access upgrade	\$6,403	Completed
	Soil landscape profiling Yarrangobilly	\$61,783	Completed
2022–23	Blue Waterholes campground upgrade	\$33,261	Completed
	Yarrangobilly thermal pool access upgrade	\$459,006	Completed
	Snow gum dieback research and management	\$25,000	Ongoing
<b>Total</b>		<b>\$651,874</b>	



## Spoil compensation

The Snowy 2.0 planning approvals require Snowy Hydro Limited to minimise the tunnelling spoil (soil and rock) from the development. The approvals also allow for spoil to be used in different ways. This includes:

- moving and storing spoil out of Kosciuszko National Park
- the National Parks and Wildlife Service using spoil to improve other parts of the park, such as road base for better access
- Snowy Hydro Limited using spoil to construct temporary or permanent infrastructure for the development or to rehabilitate the site
- storage at designated emplacement areas inside and outside of the park.

For the spoil emplaced in Kosciuszko National Park, Snowy Hydro Limited provided compensation of \$1,650,000. This will be used to improve the park.

Table 10 sets out spoil compensation expenditure to 30 June 2023.

**Table 10 Spoil compensation actions underway or completed to 30 June 2023**

Financial year	Action	Expenditure	Status
2018–19	Nil	\$0	
2019–20	Nil	\$0	
2020–21	Nil	\$0	
2021–22	Nil	\$0	
2022–23	Yarrangobilly thermal pool access upgrade (additional funding)	\$29,762	Ongoing
	Soil landscape profiling – whole of Kosciuszko National Park	\$18,391	Ongoing
	Charlotte Pass car park scope of works	\$63	Ongoing
<b>Total</b>		<b>\$48,216</b>	

# Case study: Alpine bogs and fens horse enclosure fencing

## Background

Ecosystem offset funds of \$124,500 will protect and enhance alpine bogs and fens within the Pilot Wilderness of Kosciuszko National Park. The project constructed 4 enclosure fences to protect threatened bogs and fens. It also included management and conservation activities for 3 threatened flora and fauna species found within the fenced enclosure areas.

These species are alpine she-oak skink, broad-toothed rat and Max Mueller's burr-daisy. They are all listed as offset species under the Kosciuszko Offset Strategy.

The Kosciuszko Offset Strategy identifies feral horses as a key threatening process. The New South Wales *Biodiversity Conservation Act 2016* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* provide for mitigating the impacts of feral horses.

In addition, the 2021 Kosciuszko Wild Horse Heritage Management Plan outlines that fencing is appropriate as a short to medium-term method to exclude horses from specific areas.

## Monitoring

Aerial drone photography has been undertaken for all fenced areas. The department will use these photographs in a time series analysis to assess changes in bogs (vegetation extent, stream incision, vegetation indices). Control bogs with no exclusion will be established.

Aerial photography was completed between February and May 2023. Initial examples already show visible improvements (Figures 1 and 2).

Monitoring of broad-toothed rat presence in Ingeegoodbee and Tin Mines bogs was undertaken in February 2023. Fresh scats and camera monitoring confirmed the presence of broad-toothed rats, but departmental officers were not able to capture any rats for further DNA analysis.

During this monitoring, an additional location of broad-toothed rat presence was identified in a bog on the Cowombat Trail approximately 2 km north-east of Cowombat Flat.

The project installed artificial broad-toothed rat habitat structures and runways at the Ingeegoodbee enclosure. This followed on from a proof of concept established in burnt sphagnum bogs in the northern end of Kosciuszko National Park following the 2019–20 bushfires.

These structures and runways have been proven successful, with a number of species, particularly broad-toothed rats, using them and the vegetation recovery associated with them.

Max Mueller's burr-daisy was confirmed to be present on the eastern side of Cascades Creek within the fenced area. The National Parks and Wildlife Service is continuing to monitor the alpine she-oak skink around the Cascades exclusion fence. The fenced area will improve grassland habitat adjacent to the Cascades bog complex.



**Figure 1** Little Tin Mines, Pilot Wilderness Kosciuszko National Park – pre-fencing 11 May 2022



**Figure 2** Little Tin Mines, Pilot Wilderness Kosciuszko National Park – post-fencing 21 February 2023

## Metrics

At the conclusion of the construction phase, the department has:

- built 3 large and one small horse exclusion fences throughout the Pilot Wilderness
- enclosed 24.63 hectares of montane peatlands endangered ecological community (alpine sphagnum bogs and fens threatened ecological community) and associated grassland
- installed 3,990 m of fencing
- established 5 broad-toothed rat artificial runways and habitat structures
- established 11 photo monitoring points across 2 fenced locations
- completed time series aerial drone photography across 6 bog locations (3 fenced, 3 unfenced)
- confirmed the presence of broad-toothed rat in all 3 fenced locations and one additional, previously unrecorded location not associated with enclosure fencing
- confirmed the presence of Max-Mueller's burr-daisy across a wider extent at Cascades Creek and adjacent grassland
- continued monitoring alpine she-oak skink within the Cascades enclosure fence.