

# MAISIE'S PLOTS



Pretty Valley Fenced Plot Sign 2022



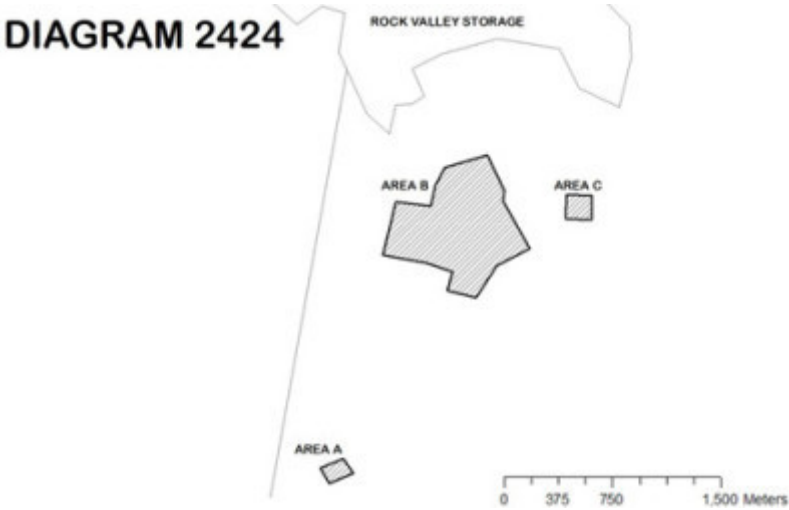
Aerial view Pretty Valley 1992



Pretty Valley Fenced vs Unfenced 1992



Rocky Valley peatland within the fenced plot 1982



Masies Plots Extent 2022

## Location

BOGONG HIGH PLAINS ROAD BOGONG, ALPINE SHIRE

## Municipality

## Level of significance

Registered

## Victorian Heritage Register (VHR) Number

H2424

## VHR Registration

September 1, 2022

## Heritage Listing

Victorian Heritage Register

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## Statement of Significance

Last updated on - September 1, 2022

### What is significant?

Maisie's Plots, two Alpine ecology monitoring sites, one at Rocky Valley and one at Pretty Valley, consisting of fenced exclusion plots and unfenced control plots.

### How is it significant?

#### Criterion A

Importance to the course, or pattern, of Victoria's cultural history.

#### Criterion F

Importance in demonstrating a high degree of creative or technical achievement at a particular period

#### Criterion G

Strong or special association with a particular present-day community or cultural group for social, cultural or spiritual reasons.

#### Criterion H

Special association with the life or works of a person, or group of persons, of importance in Victoria's history.

### Why is it significant?

Maisie's Plots are historically significant as one of the longest continual ecological monitoring experiments in Australia and Victoria. It is amongst the longest continual grassland monitoring projects in the world. Established on the Bogong High Plains by botanist Maisie Fawcett between 1945-47, Maisie's Plots yielded valuable data about the impact of cattle grazing on alpine vegetation and soils. Published initially with colleague Professor John Turner in 1959, the plots continue to contribute to ecological science to this day. The project demonstrated that grazing was detrimental to the sustenance of native vegetation and encouraged soil erosion. This and subsequent longitudinal data contributed to the original controls of licensed grazing, and its eventual cessation in the Alpine National Park in 2005–06. [Criterion A]

Maisie's Plots are historically significant for their importance in demonstrating a high degree of scientific achievement by pioneering ecologist Maisie Fawcett. Her use of the enclosure technique was highly innovative for its time and facilitated robust, long-term data collection. Her work has been pivotal in developing a sound ecological understanding of alpine vegetation dynamics in Victoria. [Criterion F]

Maisie's Plots are socially significant within the Victorian scientific community as place where Victoria's earliest ecological data collection methods can be viewed in action. Generations of students and researchers have been educated at Maisie's Plots and the place is highly valued, visited and written about by botanists and ecological scientists in Victoria and around the world. Their fondness for the place is evident in the name 'Maisie's Plots'. [Criterion G]

Maisie's Plots is of historical significance to Victoria for its association with Masie Fawcett. Fawcett made a strong and influential contribution to the course of Victoria's history through her pioneering role in the botanical and ecological sciences from the mid-twentieth century. At Maisie's Plots, Fawcett established longitudinal studies about soil erosion which have provided information about how land, soil, water, animals, the natural environment and agriculture can be sustainably managed. These plots are thought by many within the scientific community to be one of the foundations of Australian ecology. Fawcett's methodologies and data have been built on and analysed by generations of successive scientists. [Criterion H]

## Permit Exemptions

### General Exemptions:

General exemptions apply to all places and objects included in the Victorian Heritage Register (VHR). General exemptions have been designed to allow everyday activities, maintenance and changes to your property, which don't harm its cultural heritage significance, to proceed without the need to obtain approvals under the Heritage Act 2017.

Places of worship: In some circumstances, you can alter a place of worship to accommodate religious practices without a permit, but you must [notify](#) the Executive Director of Heritage Victoria before you start the works or activities at least 20 business days before the works or activities are to commence.

Subdivision/consolidation: Permit exemptions exist for some subdivisions and consolidations. If the subdivision or consolidation is in accordance with a planning permit granted under Part 4 of the *Planning and Environment Act 1987* and the application for the planning permit was referred to the Executive Director of Heritage Victoria as a determining referral authority, a permit is not required.

Specific exemptions may also apply to your registered place or object. If applicable, these are listed below. Specific exemptions are tailored to the conservation and management needs of an individual registered place or object and set out works and activities that are exempt from the requirements of a permit. Specific exemptions prevail if they conflict with general exemptions.

Find out more about heritage permit exemptions [here](#).

### Specific Exemptions:

#### GENERAL

1 Minor repairs and maintenance which replaces like with like. Repairs and maintenance must maximise protection and retention of fabric and include the conservation of existing details or elements. Any repairs and maintenance must not exacerbate the decay of fabric due to chemical incompatibility of new materials, obscure fabric or limit access to such fabric for future maintenance.

2 Works or activities, including emergency stabilisation, necessary to secure safety in an emergency where a structure or part of a structure has been irreparably damaged or destabilised and poses a safety risk to its users or the public. The Executive Director must be notified within seven days of the commencement of these works or activities.

3 Removal of environmental and noxious weeds, as defined by the Catchment and Land Protection Act 1994 (Vic), using chemical herbicide by spot application only.

## ACTIVITIES BY PARKS VICTORIA AND THIRD-PARTY RESEARCH INSTITUTES AUTHORISED BY PARKS VICTORIA

4 All research, monitoring, security and educational activities undertaken by, authorised by and/or supervised by Parks Victoria.

5 Erection, maintenance, repair and removal of the deer-proof fences at the Rocky Valley site.

### Theme

1. Shaping Victoria's environment 4. Transforming and managing the land

Construction dates 1944,

Heritage Act Categories Registered place,

Other Names MAISIES PLOTS,

Hermes Number 208374

Property Number

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### History

## Maisie Fawcett

### *Education*

Stella Grace Maisie Fawcett (later Mrs Maisie Carr; 1912-88) was a botanist and ecologist born in the Melbourne working-class suburb of Footscray. Dux of the local primary school, she attended the then co-educational Melbourne High School and won a university 'free place'. After time as a schoolteacher, Fawcett graduated BSc in 1935 and MSc in 1936 majoring in botany with honours. She received several scholarships and an exhibition. With research scholarships and grants she undertook fungal research in the University of Melbourne Botany Department. In 1940 an accident to her head and neck prevented further microscope work.

## High Country fieldwork

### *Omeo - Hume Dam catchment erosion project*

In 1940 the *Soil Conservation Act* established Victoria's new Soil Conservation Board (SCB). At the time the members of the Board were very concerned about condition of the Hume Catchment, particularly the high plains, much of which had been burnt in the 1939 fires, and which was used extensively for free-range cattle grazing. Today the damaging impact of cattle grazing on the ecology of the High Country, including patterns of soil erosion, is well understood. But in the early-mid twentieth century, there was little scientific evidence to conclusively demonstrate this. More research was needed to protect water catchment areas and dams so that siltation did not become an expensive problem for government water projects.

The SCB instigated an investigation into soil erosion and ecology of the High Country in 1941 in collaboration with Professor John Turner, Head of The School of Botany at the University of Melbourne. He selected eroded areas near Omeo in the Hume catchment area for research. He needed a skilled ecologist to undertake the fieldwork. At this time, the High Country was a remote and rugged part of Victoria: some areas were only accessible on horseback and communication by telephone was limited. Given these difficult conditions, it was initially thought that a man was best suited to the job of conducting the research.

It was wartime, however, and male ecologists were in short supply. CT Clark, of the Lands Department and the SCB, arranged with Professor Turner for Maisie to undertake an ecological survey of Hume Catchment<sup>[1]</sup>. At the time Maisie was a post-graduate student, but Prof. Turner convinced the Board that she could capably undertake

the work. This was initially via a research grant to the Botany School, but in 1944 Maisie was appointed as the first research officer of the Soil Conservation Board. She extended her activities to cover all the High Country in the Hume Catchment, including the Bogong High Plains.

From September 1941, Fawcett moved to Omeo. As part of her pasture regeneration studies, she had large areas fenced to exclude stock on the steep eroded slopes of Mt Mesley and Mt Livingstone. In these exclosures she recorded vegetation changes and also stream flow and siltation rates. Fawcett travelled extensively on foot and horseback across the hilly Hume Catchment area becoming familiar with the Alpine environment and its particular ecology. Being a city-bred woman, a scientist, a representative of the University and the SCB was not easy in a rural community. Fawcett overcame entrenched conservative attitudes, wartime shortages, physical exhaustion and challenging terrain and weather conditions.

#### *Bogong High Plains - Kiewa hydro-electric scheme erosion project*

During her time at Omeo, Fawcett became aware that soil erosion in the Bogong High Plains to the northwest of Omeo could potentially threaten the Hume Catchment, including and the new Kiewa hydro-electric scheme which had been under construction since 1938. In 1944 Maisie accompanied members of Board to assess obvious deterioration of grazing values and incidence of erosion on the Bogong High Plains. On Maisie's recommendation, and at the request of the SCB the State Electricity Commission (SEC), fenced the Rocky Valley and, later, the Pretty Valley experimental monitoring sites on the Bogong High Plains. This arrangement (i.e. two study areas) was necessary so that soil and vegetation measurements could be made over the full range of plant associations on the Bogong High Plains.

#### *Rocky Valley Plots*

The large fenced exclosure at Rocky Valley was established in 1944-45. The exclosure included the headwaters of a first order stream and its associated peatland vegetation, and various other vegetation types such as heathlands and herbfields. The fence excluded cattle (but not hares), and the nearby unfenced control areas allowed cattle to graze freely. Within the exclosure, 500m<sup>2</sup> permanent sample plots with permanently marked transect lines were established in open heathland, closed heathland and herbfield. Similar sample plots-with-transects were established within comparable vegetation types in the unfenced, control area; one of these was several hundred metres to the east of the main fenced plot.

#### *Pretty Valley Plots*

In 1946 Fawcett selected land for sites on the edge of Pretty Valley (a grassland area). The exclosure was fenced in 1946 to exclude cattle, along with an unfenced control area in which cattle could graze. The Pretty Valley plots were established because the type of grassland present there was not well-represented at Rocky Valley. Permanently-marked transects were established in the exclosure and the adjacent unfenced area.

#### *Fieldwork, findings and reception*

Professor Turner arranged for several scientists (including Sophie Ducker, Ethel McLennan and Nancy Millis) the self-proclaimed 'High Plains Plant Hounds', to assist Fawcett during several summers. Botany students also assisted with the measurements.

A field day was held in 1946, with the aim of explaining the situation to cattlemen. Representatives of the Soil Conservation Board met with most of the cattlemen who held licences on the Bogong High Plains to explain that stock numbers should be regulated, and dates should be set for entry and withdrawal of stock. This was held at the Rocky Valley plots.

In 1946, a Bogong High Plains Committee was established, and a Royal Commission was held into the grazing of forests, at which Fawcett and Turner gave evidence. Representing the SCB, Maisie was the only woman on the Bogong High Plains Advisory Committee which determined the permissible number of cattle and length of their stay each summer.

Fawcett's investigations and findings were not always welcome. She criticised the cattlemen's frequent burning of vegetation and examined the effects of rabbits and stock on indigenous pastures. Her research earned her the titles of 'Washaway Woman' and 'Erosion Girl'. That said, Maisie slowly and consistently won the respect of cattlemen, of SCB members and others by speaking not only from her love for the High Country, but from the clear, uncluttered evidence that the land itself was revealing. In 1949 Fawcett became a lecturer in systematic botany and ecology at the University of Melbourne and continued her research at the Alpine plots. Fawcett's findings - that summer grazing was detrimental to the sustenance of native vegetation and encouraged soil

erosion - were published in 1959, co-written with Professor Turner, in the *Australian Journal of Botany*. Her classical observations of shrub ecology were published in 1962 in the *Proceedings of the Royal Society of Victoria*. The Rocky Valley and Pretty Valley plots have been monitored ever since. The compelling evidence provided by these long-term, longitudinal studies, and Maisie's ecological insights, contributed to the controls on grazing that commenced in the 1940s, further restrictions on grazing in the 1980s following the establishment of the Bogong National Park, and the cessation of all licenced grazing in the Victorian Alpine Park in 2005.

## Legacy

Maisie's Plots are thought by many within the scientific community to be one of the foundations of Australian ecology. The plots at Rocky Valley and Pretty Valley were among the first such exclosures in Australia. They are one of the longest running ecological experiments in Australia and are recognised within the scientific community as being of unquestionable National Significance. They are amongst the longest continual grassland monitoring projects in the world. Prior to the 1940s there had been only a handful of exclosure projects in Australia. When most of Australia's few ecologists were male, Maisie Fawcett undertook ground-breaking ecological research into plant-environment relationships that revealed unequivocally the damaging effects of cattle on the vegetation and soils of major Australian water-catchments. Maisie Fawcett was a gifted scientist and pioneering ecologist who grasped opportunities that took her to the forefront of her field. 'Maisie's Plots' contributed to early, foundational scientific assessments of the significance of the Australian Alps and land-use therein. The vegetation in and around the plots continue to be studied by new generations of scientists and are yielding new information about the ecology of our precious Australian Alps, including long-term vegetation change in grasslands and heathlands and wetlands, and the effects of fire, alien plants and climate change.

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- Associate Professor John Morgan, Department of Environment & Genetics, La Trobe University

- Associate Professor Ewen Silvester, Director of the Research Centre for Applied Alpine Ecology (RCAAE)
- Ms Elaine Thomas, Ranger, Alpine National Park, Parks Victoria
- Mr Warwick Papst, Research Centre for Applied Alpine Ecology, La Trobe University, and formerly Soil Conservation Authority of Victoria
- Professor Richard J (Dick) Williams, Research Centre for Applied Alpine Ecology, La Trobe University.

## Extent of Registration

### NOTICE OF REGISTRATION

As Executive Director for the purpose of the **Heritage Act 2017**, I give notice under section 53 that the Victorian Heritage Register is amended by including a place in the Heritage Register:

Number: H2424

Category: Registered Place

Place: Maisie's Plots

Location: Bogong High Plains Road Falls Creek

Municipality: Alpine Shire

All of the place shown hatched on Diagram 2424 encompassing part of Allotment 3 Parish of Nowyeo, consisting of three non-contiguous areas: Area A (Pretty Valley, 0.9ha), Area B and Area C (Rocky Valley, 17.5ha in total). Area A comprises two plots (one fenced and one unfenced) and land for 20m around their perimeter. Area B comprises three plots (one fenced and two unfenced) and land for 20m around their perimeter. Area C comprises an unfenced plot and land for 20m around its perimeter.

Dated 1 September 2022

STEVEN AVERY

Executive Director

*This place/object may be included in the Victorian Heritage Register pursuant to the Heritage Act 2017. Check the Victorian Heritage Database, selecting 'Heritage Victoria' as the place source.*

*For further details about Heritage Overlay places, contact the relevant local council or go to Planning Schemes Online <http://planningschemes.dpcd.vic.gov.au/>*