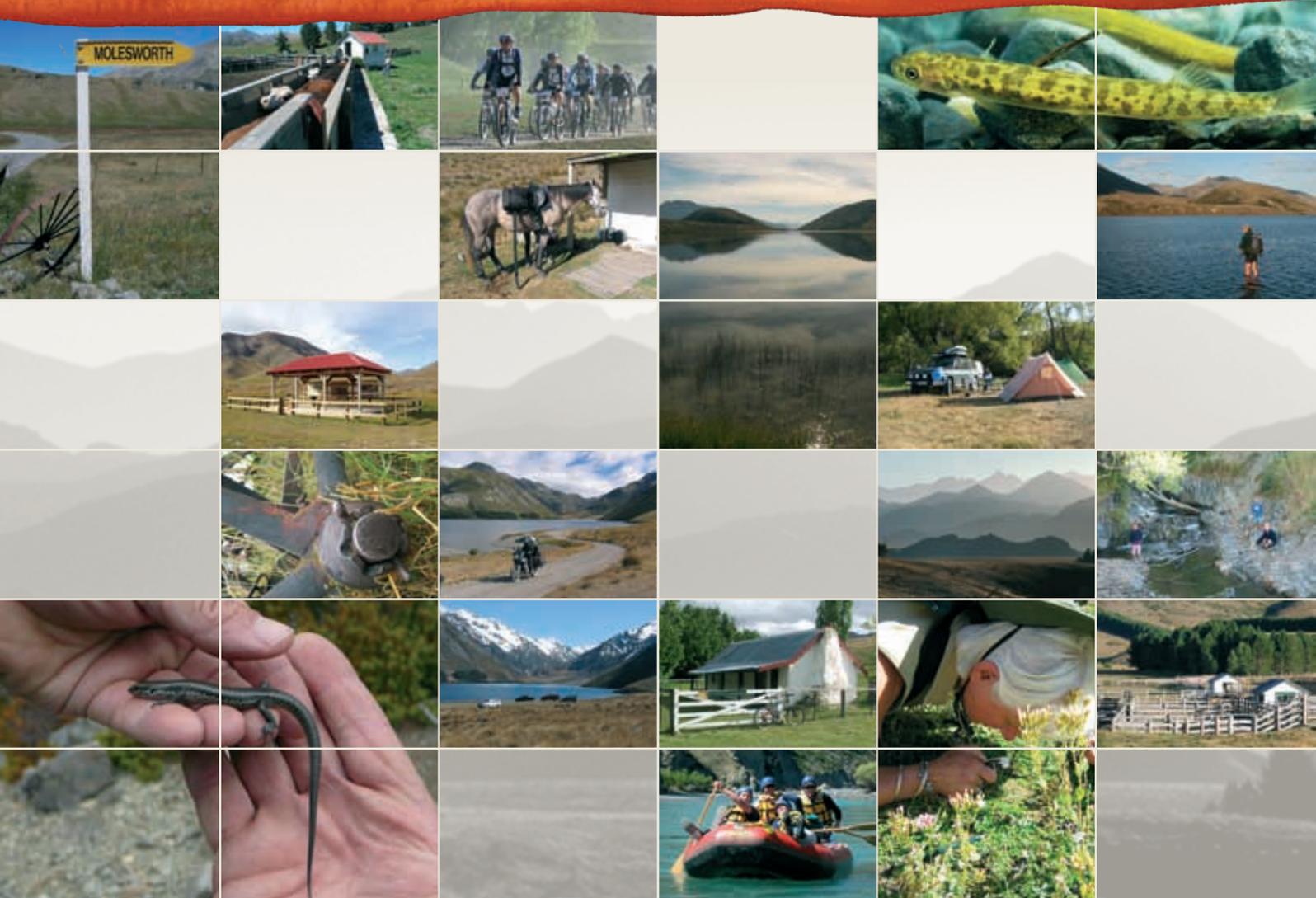




Molesworth Management Plan

October 2013



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ISBN 978-0-478-14997-5 (web PDF)
978-0-478-14996-8 (print copy)

Published by Department of Conservation, PO Box 10420, The Terrace, Wellington 6143, New Zealand.

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Preface

Molesworth Recreation Reserve ('Molesworth') is a unique part of the South Island high country. This remarkable landscape supports many values and represents an important part of New Zealand's high country heritage. Two roads facilitate public access through Molesworth, the nation's largest farm, where natural, historical, cultural and recreational values are protected alongside a pastoral farming operation. Its remoteness and sheer size (180 787 hectares, about the size of Stewart Island/Rakiura) belie the public's ability to reach Molesworth within 3 hours of leaving Christchurch, Blenheim or Nelson.

In 2005, the Government added Molesworth to New Zealand's network of high country parks and reserves. It is to remain a working high country station; however, the wider public interests, particularly conservation and recreation, are to be enhanced. This change will occur gradually to ensure successful integration.

This management plan expresses the vision of a high country reserve that supports a broad spectrum of values, including farming, and represents the continued progression towards achieving this vision. The management plan sits alongside a farming lease and grazing licence that set the parameters for the farming operation, with Landcorp Farming Limited as Lessee. Managing this wide range of uses presents challenges, but also offers considerable benefits to the nation.

This management plan has been prepared in accordance with the farming lease and Section 40B of the Reserves Act 1977. It is effective for 10 years, but may be reviewed at any time as a result of increased knowledge or changes in circumstances.

The description of iwi values and interests is incomplete in this management plan. This text has been put on hold while the Treaty of Waitangi settlement process for Te Tau Ihu (Top of the South iwi) is under way. Once settlements have been completed, text relating to iwi values and interests will be added to the management plan through an amendment process. This will include public consultation on the new text.



Ross Hall
Chairperson
Nelson Marlborough Conservation Board
October 2013

The Molesworth Saga

(By Anonymous—reproduced with permission from *The Marlborough Express* newspaper)

Away up the Awatere,
Towards the setting sun,
Lies the red-roofed homestead,
Of New Zealand's longest run.

So let's sing a song of Molesworth,
For, like Lazarus of old,
It too, has risen from the dead,
And the story should be told.

Everywhere was desolation,
Utter and complete!
Yet after thirty years of struggle
It's back now on its feet.

From a state of desecration,
On the hills and valley floors,
Nature's sprung to life again,
And is healing up the sores.

In a miracle of achievement,
It really is a treat,
To see the green grass growing,
Sheer—nigh up 5000 feet.

Instead of rabbits by the million,
There are now a million trees,
And the bird-life is increasing,
And the cattle love the breeze.

Beneath the shady willows,
Yet many of them graze,
High away up on those slopes,
Half hidden by the haze.

Yes, the bird life's now returning,
To whence they all but died,
And a holding that's so spic and span
Shows a return also of pride.

For Molesworth is now a Millionaire!
Give credit where it's due—
From a pauper's state to something great,
Seems too good to be true!

Congratulations, Lands and Survey,
It is only fair to say,
You have silenced all the brickbats,
And deserve a big bouquet.

And the guiding hand behind the reins
Has been M M Chisholm (Bill).
His, the purpose single-minded,
His, the never faltering will!

So let's sing this song of Molesworth,
Let's sing it clear and loud,
It's a story of achievement,
That makes New Zealand proud!

1. Introduction

1.1 Background

Molesworth is a high country pastoral station that is managed for public access and conservation values as well as primary production. The term ‘iconic’ is often used in conversations about Molesworth. It is valued for a range of reasons—its wide open landscape, the indigenous ecosystems and species it supports, its high country farming tradition and ongoing operation as New Zealand’s largest farm, and the historical and cultural heritage that travellers, both Māori and Pākehā, and graziers have left behind. Overlaid upon this set of values is a strong interest from the public to visit and experience Molesworth.

This management plan (‘the Plan’) describes these (and other) values that are to be safeguarded, and sets out the outcomes, objectives and policies that are designed to do this. It describes the philosophy behind Molesworth, which is about integrated management. It outlines how the balance will be struck between protecting nature, and historical and cultural heritage, fostering recreation, and maintaining a viable farming operation.

It is the first management plan since Molesworth Station was designated Molesworth Recreation Reserve (‘Molesworth’) in 2005 and the Government set out its intentions to alter the management emphasis of Molesworth to integrate the ‘present good pastoral farming practices, including soil and water conservation, with more recreation and conservation activities’ (New Zealand Government 2005).

This change has not been sudden. It followed earlier signals that Molesworth should be managed for a wide set of values. In 1987, the Government decided to retain Molesworth Station as Crown land and the public was granted more access. This Plan continues this gradual process of re-balancing the set of values for Molesworth.

The Plan sits alongside a farming lease and grazing licence that enable Molesworth to continue as a working farm, a clear goal of the Government. The 2005 transfer to recreation reserve has set up expectations of greater public access to this special place. While recreation and conservation activity will be enhanced, the timing of these outcomes must fit with the farming operation. Specifically, this Plan must be consistent with the farming lease.

This Plan has been prepared by the Department of Conservation (‘the Department’) and approved by the Nelson Marlborough Conservation Board. The Molesworth Steering Committee advised and participated in its development. The Plan is subject to review no later than 10 years from the date of approval.

1.2 Purpose

This Plan has been prepared to guide the management and protection of the conservation and recreation values of Molesworth and integrate these with the maintenance and development of Molesworth’s production values. The critical factor in the management of Molesworth is the successful integration of farming, conservation and recreation values.

The management plan has multiple purposes:

1. For the public, it provides information about Molesworth and certainty about how it will be managed. The management planning process provides an opportunity for public input into the strategic management of Molesworth.
2. For the Department and the Lessee (Landcorp Farming Limited), it directs the strategic management of Molesworth.

3. For the Nelson Marlborough Conservation Board and the Molesworth Steering Committee, which both have an advisory role in the implementation of this Plan, it provides the benchmark for the continuing assessment of performance of the agencies involved with the management of Molesworth in meeting the requirements of the Plan.
4. For everyone with an interest in Molesworth, it explains the rights and responsibilities of the different parties.

1.3 Legal context

1.3.1 History of land administration

This section briefly traces the history of land tenure and administration for Molesworth. A history of Molesworth land use is provided in section 2.2: *History of land administration*.

Molesworth has been Crown land under pastoral farming for over a century. In 1987, central government restructuring resulted in the control and administration of Molesworth becoming the responsibility of the Department of Lands and then Land Information New Zealand. The Crown, through the Commissioner of Crown Lands, leased Molesworth to Landcorp Farming Limited ('Landcorp'). Thus, the environmental reforms of the late 1980s saw Molesworth retain its status as Crown land, with land management based on promoting and safeguarding its many uses and values.

In 2003, the Government decided that Molesworth should become conservation land as part of the Government's intentions to form a network of high country parks and reserves, with the provision that the farming operation was to continue. This decision was implemented in a lease signed between the Crown and Landcorp (under the Land Act 1948) on 11 May 2005 and the subsequent vesting of land as a recreation reserve (subject to the lease), to be administered by the Department of Conservation, on 1 July 2005. In its decision, Cabinet¹ set out the following principles for managing Molesworth Station:

- *The cultural and historical heritage of farming at Molesworth Station, as well as its important regional role in pest management, and its role in achieving certain environmental outcomes, must be recognised within the context of maintaining a long-term viable farming operation;*
- *Important historic heritage, biodiversity and other natural heritage values of the property must be protected;*
- *Recreation opportunities must be enhanced.*

Cabinet considered that Molesworth's protection as public conservation land would be best achieved via recreation reserve designation under the Reserves Act 1977, subject to the farming lease. Cabinet noted that a joint management structure should be retained (the Molesworth Steering Committee). Special mention of multiple use was made by Cabinet in its decision.

The Government released a public document which outlined the changes (New Zealand Government 2005). It stated that:

By transferring management of Molesworth to the Department of Conservation, the Government is formally recognising the wider public interest in the area, particularly the need for conservation. Access to the station will be increased over time, allowing for its full potential to be realised. The profitable farming operation run by Landcorp on the station will continue. The incorporation of a wider variety of activities will occur gradually to ensure successful integration.

¹ Cabinet Policy Committee minute [POL Min (03) 30/9 refers] from 19 November 2003.

This Plan represents another step towards this gradual incorporation of recreation and conservation activities alongside farming.

This is the fourth management plan prepared for Molesworth and the first prepared under the Reserves Act 1977. All previous plans were prepared by Land Information New Zealand under the Land Act 1948 (plans were published in 1987, 1992 (which was rolled over for another term in 1997), and 2003). The 2003 management plan provided for a non-statutory recreation plan to be developed. Initial work was discontinued when the Government announced the change in management of Molesworth and recreation provisions were negotiated within the 2005 farming lease (see section 1.3.3: *Farming lease and grazing licence*).

1.3.2 Legal designation

Molesworth (Map 1) is a recreation reserve under section 17 of the Reserves Act 1977 (see Appendix 1). Its vesting as a reserve was made subject to the farming lease ('the lease'; see sections 1.3.3 and 1.3.4). Molesworth is managed for multiple values (described in section 3: *Concept, values and issues*) and the choice of suitable legal designation was not straight forward. Recreation reserve status was chosen because it could accommodate a farming lease along with the other values to which the government was committed (including conservation and recreation).

Molesworth encompasses 180 787 hectares and includes all river and lake beds within its boundaries. Parts of the Clarence River fall within Molesworth (the boundary crosses the river in multiple places); however, Lake Tennyson does not.

The lands adjoining water bodies that were previously marginal strips (marked on Map 2) were gazetted as recreation reserve on 1 July 2005. These lands are 20-metre riparian margins alongside rivers that are more than 3 metres wide and alongside specified lakes (marked on Map 2). Like the marginal strips that they replaced, they are ambulatory; that is, they move simultaneously with the water body (if it changes course or position). They are subject to the Reserves Act 1977 but are not subject to the lease. The public enjoys the same access rights to these lands adjoining water bodies as would apply if these areas were still marginal strips, i.e. open access except when restricted by the Minister of Conservation under sections 17(2)(a) and 53(1)(o) of the Reserves Act 1977, which may be for reasons of public safety, emergency, extreme weather conditions, fire risk or conservation management. Other lawful parameters also guide access to and use of public conservation lands, including concession provisions and offence provisions. Other use provisions that apply to the Recreation Reserve (e.g. concessions, offence provisions) also apply to these lands adjoining water bodies, except where stated otherwise in this Plan.

Some legal roads cross Molesworth, most of which are unformed. Two formed roads (Map 2) traverse Molesworth, both of which follow the legal road alignment for only part of their length:

- Tophouse Road (also known as Rainbow Road, Wairau Hanmer Springs Hydro Road, Clarence Road and Lake Tennyson Road), which runs from Hanmer Springs northwards along the upper Clarence River valley through to Rainbow Station; and
- Acheron Road (also known as Molesworth Road), which runs along the Acheron River valley and connects with the Awatere Valley Road via Wards Pass.

Legal roads do not form part of Molesworth Recreation Reserve and therefore this management plan does not apply to them. All legal roads on Molesworth are under the jurisdiction of the Marlborough or Hurunui District Councils. However, both the Acheron Road and the Tophouse Road have several sections where either gaps in legal road designation occur, or the formed road does not follow the legal road alignment. One consequence of this is that these sections of formed road are subject to the Reserves Act 1977 and, where they are not on lands adjoining water bodies as shown in Map 2, the lease. This means that public access along the roads must be managed in accordance with the provisions of the Reserves Act 1977, which includes the ability to restrict access in the case of an emergency, extreme weather, fire risk, public safety, or for

conservation or other management reasons that warrant such restriction. Within this plan, the Department's ability to manage and control use of the Acheron Road is because the formed road is part of the Recreation Reserve at the southern and northern entrances to the legal road (see section 4.8.3: *Public access*).

The alignment of unformed legal roads across Molesworth is often impractical for public access (e.g. across cliff faces) or some distance from the formed road or track (e.g. Acheron Road over Wards Pass is about 2 km south of the legal road alignment which goes over Saxton Pass). For these reasons, this management plan proposes that alternative routes be identified and marked to provide practical public access (see section 4.8.3: *Public access*).

Molesworth has farm tracks maintained by the Lessee and pylon access roads maintained by Transpower New Zealand Limited. In places, these cross legal roads but seldom align with them. Therefore, they are part of the reserve rather than legal road and are not available for public vehicular use without an activity permit or concession (see section 4.8.3: *Public access*).

1.3.3 Farming lease and grazing licence

Landcorp Farming Limited (the Lessee) has a lease for farming operations on Molesworth under the Land Act 1948. The current lease was signed on 11 May 2005 and expires in 2020. The leasehold area encompasses all of Molesworth Recreation Reserve except for the lands adjoining water bodies as shown on Map 2 where the Lessee has a non-exclusive grazing licence ('the grazing licence'—see later in this section). The lease and grazing licence can be viewed via a link on the Department of Conservation's website.

1.3.3.1 Farming lease

Given that the lease was signed before Molesworth became a recreation reserve, and that the vesting was made subject to the lease, the lease was written with the detail required to set out the respective roles of the Department and Landcorp with respect to farming operations, as well as conservation and recreation outcomes.

The lease provides for a limit on the number of stock (60 000 stock units), the rotational grazing system, coordinated control of weeds and pest and wild animals, further areas to be fenced from grazing and increased biodiversity monitoring.

With respect to public access, the lease uses a zoning system. The west zone (Map 3) provides for year-round access. Other zones provide for access on a seasonal basis (east and north zones on Map 3) or by permit (central zone on Map 3). The Acheron Road is open to the public from late October to mid April; specified access routes and tracks also provide access.

The Lessee is the owner of the livestock and improvements, including any pasture improvements that arise from over-sowing and topdressing, and most buildings (the Department has five huts/ bivvies and three staff accommodation buildings, and Transpower New Zealand Limited has buildings in two locations). Landcorp owns most of the historic buildings and structures on Molesworth.

1.3.3.2 Grazing licence

The grazing licence was granted because grazing these lands was essential to the economic viability of the farming operation. The ability to graze the lands adjoining water bodies is acknowledged in the lease as being critical to the economic viability of the farming operation. Granted under section 59A of the Reserves Act 1977, the licence covers the lands adjoining water bodies shown on Map 2. These lands traditionally have been grazed (under previous leases). The licence states that Landcorp shall use and manage these lands in a good and husband-like manner, and shall not impoverish or waste its soil. Landcorp is required to follow the provisions set out in the main lease with respect to good husbandry, weed control, pest and wild animal control, fire control and biodiversity. It must comply with the Biosecurity Act 1993 and cannot cut

down or damage any vegetation (excluding weeds) or damage any feature or historic resource within the licence area. The land cannot be altered nor new structures erected. The licence is non-exclusive and has no effect on public access. Access on these lands may not be closed for farming purposes.

1.3.4 Relationship between the Reserves Act, the lease, the management plan and the grazing licence

Molesworth is a unique legal entity. Molesworth was declared a recreation reserve under the administration of the Department of Conservation subject to the lease. This means that the administration of Molesworth under the Reserves Act 1977 must not be inconsistent with the terms of the lease. This Plan meets this requirement.

This Plan has been prepared under section 40B of the Reserves Act 1977 and establishes objectives for the management of the reserve according to the purposes expressed in the lease and the Reserves Act 1977. This Plan binds the Department. The lease states that Landcorp will be bound by the Plan where it is not inconsistent with the lease. Landcorp has been consulted in the preparation of this Plan and this Plan is not inconsistent with the lease.

The non-exclusive grazing licence is granted under the Reserves Act 1977 and the Conservation Act 1987. The lands covered by the licence (those lands adjoining water bodies that are marked on Map 2) are subject to this Plan but are not subject to the lease.

The effect of this legal arrangement is that the provisions set out in this Plan originate from the Reserves Act 1977, the farming lease and the grazing licence. Explanatory text outlines the basis for the policies in this Plan; for example, many of the public access policies derive from the lease.

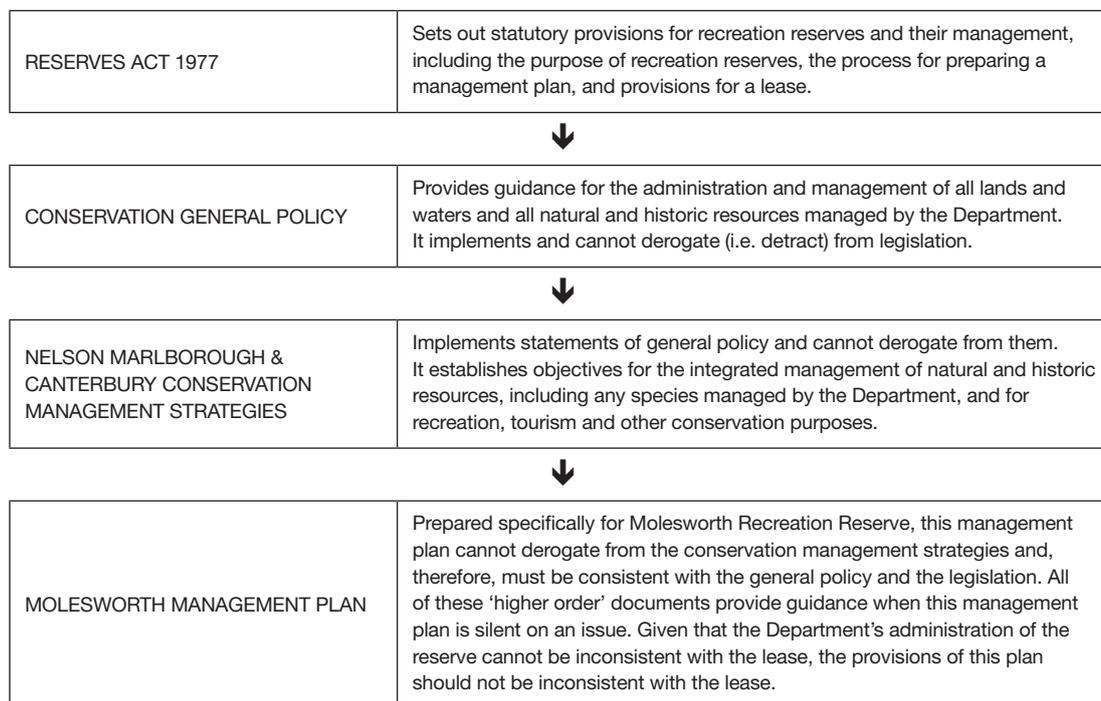
1.3.5 Bylaws

The public are bound by lawful management decisions of the Department and by bylaws. The need for bylaws is identified in this Plan where they are required to implement the public access provisions of the lease and provisions of the Reserves Act 1977 that affect the public, including regulation of public access, camping, fires and animals, amongst other things. Bylaws are proposed where they are necessary to give effect to the provisions of this Plan.

The public must be consulted when bylaws are made. Bylaw proposals were contained in the notified version of this Plan that was subject to public submissions and hearings. The process associated with the preparation of this Plan, therefore, has constituted the consultation step of the bylaw-making process.

1.4 Planning context

This management plan is part of a hierarchy of policy documents that provides the planning framework for all public conservation lands and waters in Zealand:



1.4.1 Relationship with other Department of Conservation strategic documents and tools

The Department produces other documents regarding particular issues on a local and national basis, such as recovery plans for threatened native species and animal pest control plans. These can be applied at Molesworth, where relevant, to assist with the implementation of this management plan.

Given its size and recent vesting as recreation reserve, various functional plans have been prepared, or are in preparation, to guide aspects of Molesworth's management. At the time this management plan was prepared and approved, these included Molesworth Animal Pest Control Plan, Molesworth Weed Control Plan, Molesworth Biodiversity Strategic Plan, Molesworth Interpretation Plan, Molesworth Station Existing Recreational Opportunities and Visitor Facilities Assets Plan, and conservation plans for the Acheron Accommodation House and the Molesworth Cob Cottage. These are discussed in the relevant policy sections.

The Department is developing tools to prioritise its work on biodiversity and recreation management: the Natural Heritage Management System and the Destination Management Framework, respectively. The application of these tools will help to guide future expenditure for biodiversity and recreation on Molesworth.

1.5 Treaty of Waitangi responsibilities

Building relationships with tangata whenua is fundamental to understanding their interests and involving them in relevant decision-making processes. Effective partnerships with tangata whenua help to achieve conservation of natural resources and historical and cultural heritage.

The Conservation Act 1987 and all the Acts listed in its First Schedule (which includes the Reserves Act 1977) must be interpreted and administered so as to give effect to the principles of the Treaty of Waitangi (section 4, Conservation Act 1987). The Department of Conservation also has specific responsibilities under Treaty settlement legislation. Treaty of Waitangi responsibilities are reflected throughout this Plan and specifically provided for in section 4.1: *Treaty of Waitangi responsibilities*. However, the description of iwi values and interests is incomplete because of Treaty of Waitangi settlement processes being incomplete at the time this management plan was prepared and approved. On completion of the settlement processes, new text will be added to this Plan, where appropriate, and a public consultation process for this text will be provided.

1.6 Agencies with responsibilities for Molesworth

Many agencies have a statutory role relevant to the management of Molesworth. Their duties and responsibilities are set out in this section.

1.6.1 Department of Conservation

The Department of Conservation is responsible for the administration and management of Molesworth and, therefore, must not act inconsistently with the Reserves Act 1977 or the objectives, policies and methods in this management plan. More specifically, its responsibilities for Molesworth include:

- Identification, and subsequent negotiation (with the Lessee), of appropriate management for Areas of High Natural Value (areas on Molesworth that are recognised for their natural values)
- Biodiversity management, including surveying and monitoring, outside Areas of High Natural Value
- Management of historic heritage and values, including their identification and protection
- Recreation management, including the provision of public information and facilities
- Processing concession applications and monitoring the effects of concession activities
- Regulation of public access (in consultation with the Lessee)
- Provision of interpretation to the public on Molesworth's values
- Weed control (jointly with the Lessee)
- Pest and wild animal control (jointly with the Lessee)
- Fencing (jointly with the Lessee)
- Preparation and dissemination of the Molesworth Care Code
- Fire control, including restrictions on public access during times of high fire risk
- Provision of the opportunity for a viable farming operation
- The role of lessor, including monitoring the implementation of the lease and grazing licence
- Representation on, and resourcing of, the Molesworth Steering Committee
- Resourcing of, and administrative support for, the Nelson Marlborough Conservation Board
- Administration of all legislative requirements that pertain to the Department

1.6.2 Landcorp Farming Limited

Landcorp Farming Limited is a state-owned enterprise and the Molesworth lessee. In carrying out commercial farming operations on Molesworth, Landcorp is bound by the State-Owned Enterprises Act 1986, relevant provisions of the Land Act 1948 and the Reserves Act 1977 (subject

to the lease), and to the provisions of the lease itself, the grazing licence, and this management plan (insofar as it is not inconsistent with the lease). See section 1.3.3 for key provisions of the lease and grazing licence. Specific responsibilities include:

- Good farm husbandry
- Weed control (jointly with the Department)
- Pest and wild animal control (jointly with the Department)
- Maintenance of historic buildings in its ownership
- Fencing (protection fencing jointly with the Department)
- Notifying the Department whether public access permit applications will affect farming operations
- Assistance to the Department with fire management
- Requirement to obtain the Department's permission for the construction of any significant structures or infrastructure
- Representation on the Molesworth Steering Committee

1.6.3 Molesworth Steering Committee

The Steering Committee is an Advisory Committee under section 9 of the Reserves Act 1977 and comprises an independent chair, the Conservator of the Nelson Marlborough Conservancy of the Department of Conservation, two members from Landcorp Farming Limited, a farmer, a member of the Nelson Marlborough Conservation Board, one person with recreation or conservation interests, and one person from Te Rūnanga o Ngāi Tahu. In undertaking its functions, the Steering Committee has regard to the principles of the Treaty of Waitangi.

The Steering Committee is representative of the range of interests in Molesworth, including the two primary organisations that have direct responsibilities for its management (the Department and the Lessee). The Steering Committee's functions are to:

- Advise the Minister of Conservation on the biodiversity, recreation and pastoral farming management of Molesworth
- Assist in the preparation of a draft Conservation Management Plan (this Plan) for consideration and approval pursuant to section 40B of the Reserves Act 1977
- Advise the Minister of Conservation and the Lessee on any issues arising from the implementation of the terms of the lease and this management plan.

The Steering Committee is serviced by the Department of Conservation.

1.6.4 Nelson Marlborough Conservation Board

The Nelson Marlborough Conservation Board comprises up to twelve members appointed by the Minister of Conservation, including, currently, two members appointed on the nomination of Te Rūnanga o Ngāi Tahu.

Conservation Board functions include approving conservation management plans (including approving their review and amendment), and advising on their implementation. Other roles include the preparation, review and amendment (but not approval) of conservation management strategies and national park management plans, advising the New Zealand Conservation Authority and Director-General of Conservation on conservation matters within their areas of jurisdiction, and liaising with regional Fish and Game Councils.

This Plan is a conservation management plan and requires approval from the Nelson Marlborough Conservation Board.

The Conservation Board is serviced by the Department of Conservation.

1.6.5 Treaty partners

To carry out its Treaty-related responsibilities, the Department works in partnership with Te Rūnanga o Kaikoura and Te Rūnanga o Ngāi Tahu, as well as those Te Tau Ihu iwi with customary interests in Molesworth.

1.6.6 Local government

The Marlborough and Hurunui District Councils, and the Canterbury Regional Council (known as Environment Canterbury or ECan), hold statutory responsibilities for the sustainable management of those parts of Molesworth that lie within the boundaries of each council. Most of Molesworth falls under the jurisdiction of the Marlborough District Council (MDC), a unitary authority; however, roughly one-fifth of the area (that land that drains into the Clarence River from Island Pass to the Acheron River junction) falls within the boundaries of Canterbury Regional Council and Hurunui District Council.

Regional council activities that relate to Molesworth include the management and eradication of plant and animal pests in terms of the Councils' pest management strategies; the taking, use, damming and diversion of water; and activities in the beds of rivers.

District council activities that relate to Molesworth include roading, working with the Department and the Lessee to achieve integrated management and control of the effects of land use and development, maintaining indigenous biodiversity, protecting outstanding landscapes and heritage resources, and managing activities on the surface of waterways.

1.6.7 Fish and Game Councils

Regional Fish and Game Councils are public entities that have statutory responsibilities under the Conservation Act 1987 and the Wildlife Act 1953 for the management of sports fish and game birds in the recreational interests of anglers and hunters. The Nelson/Marlborough Fish and Game Council exercises these responsibilities with respect to Molesworth in accordance with the operative Nelson/Marlborough Sports Fish and Game Bird Management Plan.

1.6.8 New Zealand Historic Places Trust

The management of historical and cultural heritage under conservation legislation is subject to the statutory roles of the New Zealand Historic Places Trust under the Historic Places Act 1993. The Trust is an autonomous Crown entity with the leading national role in promoting the identification, protection, preservation and conservation of the historical and cultural heritage of New Zealand. Its principle functions include the registration of historic places, protection of archaeological sites, advocacy for the conservation of historic resources, education, and management of historic properties. Molesworth currently has numerous archaeological sites and four registered historic places (see Appendix 2). This management plan outlines intentions to seek registration for additional sites (see section 4.5: *Historical and cultural heritage*).

1.6.9 Transpower New Zealand Limited

Transpower New Zealand Limited ("Transpower") is a state-owned enterprise that has responsibility under the Electricity Act 1992 for the national grid, the network of high-voltage electricity transmission lines. Several high-voltage transmission lines pass through Molesworth, including the main north-south link.

1.6.10 Marlborough Kaikoura Rural Fire Authority

The Marlborough Kaikoura Rural Fire Authority is legally responsible for fire management within that area of Molesworth that falls within Marlborough District. The Authority's work includes reducing the risk of fire, responding to fires and enabling the community to recover from the effects of fire. The Authority is governed by a Board comprised of representatives from forest and rural fire stakeholders, including the Department.

1.7 Terminology and conventions

In this Plan:

1. **'Outcomes'** are the end results to be achieved.
2. **'Objectives'** are long-term goals with a 20- to 50-year timeframe, the achievement of which ensures the fulfillment of outcomes.
3. **'Policies'** set out what the Department intends to do to achieve these objectives and outcomes during the life of this Plan.

The Plan establishes a long-term strategic direction for Molesworth, expressed as high-level outcomes and long-term objectives. Policies express the contribution toward this long-term strategic direction that can be achieved through implementation of this Plan.

The following conventions have been used for the policies within this management plan, consistent with Conservation General Policy 1(d) and the lease:

1. Where legislation or the lease provides no discretion for decision-making, or a deliberate decision has been made by the Minister to direct decision-makers, policies state that a particular action or actions **'will'** be undertaken.
2. Where there is a strong expectation of outcome without diminishing the constitutional role of the Minister and other decision-makers, policies state that a particular action or actions **'should'** be undertaken. When the term 'should' is used, it is anticipated that there will be only very exceptional circumstances where the outcome differs from that expressed in the policy.
3. Where the intention is to allow flexibility in decision-making, policies state that a particular action or actions **'may'** be undertaken.

Because the Minister has discretion over the granting of concessions and other authorisations, policies that relate to concessions use this 'will', 'should' and 'may' convention. In addition, where the lease commits the Department, then the relevant policy uses the 'will' terminology.

Where a plant or animal species has a common Māori or European name, this is used throughout the plan, and the scientific name (where appropriate) is given at first mention. Where a plant or animal species does not have a common name, the scientific name is used. A list of indigenous and introduced species known to occur on Molesworth is provided in Appendix 3.

Where a Māori word is used, the English translation is given alongside in the text. Māori words are also listed in the Glossary.

Lists within the Plan do not imply priority, unless stated.

1.8 Plan structure

This management plan has the following structure (Fig. 1):

Section 1 sets out the purpose and context for this Plan.

Section 2 describes the land and waters of Molesworth, as well as current uses.

Section 3 outlines a vision for Molesworth, the primary values that this management plan sets out to protect, and the key management issues addressed by this Plan.

Section 4 contains outcomes, objectives and management policies.

Section 5 contains information on Plan implementation, monitoring and review.

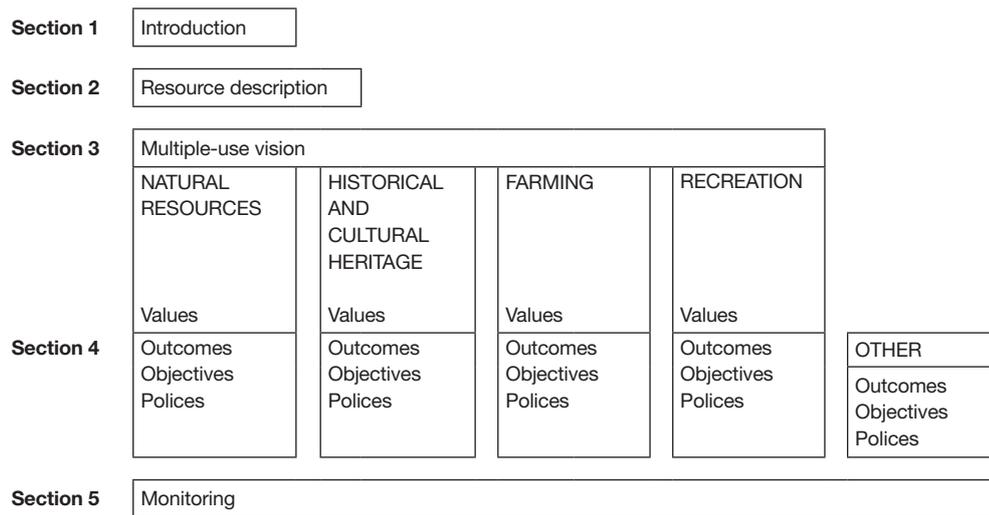


Figure 1. Management plan structure.

2. The resource and its use

2.1 Natural resources

Molesworth is characterised by the diversity of its landforms, soils and climate, with its lower country situated between 800–1200 metres above sea level and many of its peaks rising over 1700 metres. This diversity influences the animals and plants that live there. The ecosystems of Molesworth comprise a substantial portion of the endemic plants found only in South Marlborough.

Molesworth lies at the head of the valleys of the Awatere, Wairau and Clarence rivers and has a dramatic rainfall gradient from the wetter west to the drier east (annual rainfall averages between 700 mm and 2400 mm). In the west, the wetter climate interacts with glacial landforms, key features of which are the wetlands and tarns. In the drier east, tectonic landforms underlie very different ecosystems. Snow is widespread in winter, commonly covering the ground for several months, but can fall at any time of the year. Molesworth experiences a continental climate of hot summers, cold winters and extreme daily temperature ranges.

Molesworth's topography reflects its history of glaciation and pattern of fault lines. The mountain ranges, formed mostly from greywacke and argillite, house extensive scree, exposed bedrock and bare ground. The ranges are separated by river valleys and intermontane basins, which are infilled by alluvium, outwash and moraine.

2.1.1 Geological features, landforms and landscapes

Molesworth has some geological features that are nationally significant (Courtney & Arand 1994). These include numerous but small sites of bedrock outcrop and talus in valleys (which provide important habitat for lizards and vegetation) as well as fault scarps and traces. A tephra deposit dates from the Kawakawa eruption in the central North Island (c. 22600 years ago); one of four known deposits in South Marlborough from this eruption.

Lake McRae, one of Marlborough's few lakes, was formed when earthquake-induced landslides blocked the valley. It has a subterranean outlet. The lake is associated with fault traces and landslides that are ranked as nationally significant for their scientific, educational or aesthetic importance (Hayward et al. 1999).

Also of national significance is the landform complex of the Sedgemere/Tarndale lakes, moraines and outwash (Hayward et al. 1999). Isolated Flat and the Bush Gully faulted slope and terrace (Elliot Fault) are regionally significant landforms (Hayward et al. 1999).

The 'wide open' landscape of Molesworth is commonly referenced by people talking about Molesworth—it is a value that is widely held.

Soil types vary across Molesworth. Gley and brown soils dominate in the west, while oxidic and brown soils are prevalent in the east (see Map 4).

2.1.2 Terrestrial species, habitats and ecosystems

Dryland ecosystems cover a substantial part of Molesworth. These ecosystems, which occur in the rain shadow areas east of the axial ranges of both main islands, contain a high proportion of New Zealand's most threatened native ecosystems and species (Walker et al. 2005). Only a very small proportion of New Zealand's dryland ecosystems are legally protected, which elevates their significance on Molesworth.

The natural pattern of vegetation developed under the influence of altitude, rainfall, landform and natural fires. In pre-human times, west to east variation in these physical parameters would have meant that there was more tall forest, particularly tawhairauriki/mountain beech (*Nothofagus solandri* var. *cliffortioides*) forest in the west with a transition to dry woodland communities in the east. The woodland mix would have been dominated by thin barked tōtara (*Podocarpus cunninghamii*) (especially on the slopes), mataī (*Prumnopitys taxifolia*) (especially in the valley floors), houhi/mountain ribbonwood (*Hoheria lyallii*) and mountain toatoa/celery pine (*Phyllocladus alpinus*). In the last 200 years, human disturbance (burning, grazing, over-sowing and topdressing, as well as the introduction of weeds and pest and wild animals), has greatly changed the natural pattern of vegetation.

Vegetation today has extensive gravelfield and rockland communities. However, it also supports extensive areas of red tussock (*Chionochloa rubra*) grassland in the montane basins and alluvial terraces, snow tussock land and short tussock grasslands on mountain slopes, screes and bluffs, and alpine communities on the ridges and crests. Tawhairauriki/mountain beech remnants and shrublands occur in pockets.

South Marlborough is one of only a few centres of endemism in New Zealand and has 39 species of vascular (sappy) plants that occur naturally only within the region. Forty-one percent (16) of these occur on Molesworth and one is endemic to Molesworth—*Craspedia* 'tarn'. Using the latest national threat classification listing for plants² (de Lange et al. 2009), 78 'Threatened' and 'At Risk' plant species have been recorded on Molesworth. Of the 50 plant species found in South Marlborough that are classified as 'Threatened', 25 occur on Molesworth; four are shrubs (one hebe, one leonohebe, a pittosporum and a broom) and the rest are herbs, including four daisies and three cresses. Thirty-six percent of South Marlborough's 'At Risk' species occur on Molesworth. The scree communities of Molesworth are some of the most diverse in New Zealand and a number of threatened plants and animals are found on the many rocky bluffs.

Molesworth has a varied lizard fauna (geckos and skinks), including the nationally threatened scree skink (*Oligosoma waimatense*) (Declining) and long-toed skink (*Oligosoma longipes*) (Declining) (Hitchmough et al. 2010). Little is known about lizards on Molesworth.

'Threatened' and 'At Risk' bird species that occur on Molesworth include the tara/black-fronted tern (*Sterna albobriata*) (Nationally Endangered), the kāmana/southern crested grebe (*Podiceps cristatus australis*) (Nationally Vulnerable), kārearea/New Zealand falcon (*Falco novaeseelandiae*) (Nationally Vulnerable), pohowera/banded dotterel (*Charadrius bicinctus*

² The New Zealand Threat Classification System is described in Townsend et al. 2008. Species threat rankings are under revision. At the time of Plan approval, vascular plants (de Lange et al. 2009) and birds (Miskelly et al. 2008) had been revised.

bicinctus) (Nationally Vulnerable), kea (*Nestor notabilis*) (Naturally Uncommon), tōrea/South Island pied oystercatcher (*Hematopus ostralegus finschi*) (Declining) and tītītipounamu/South Island rifleman (*Acanthisitta chloris chloris*) (Declining). The eastern form of the kārearea/New Zealand falcon is not common anywhere and Molesworth offers an expanse of suitable habitat. Molesworth provides valuable habitat, especially during the summer, when most birds leave coastal areas to breed on braided riverbeds. A significant proportion of the national population of tara/black-fronted terns breed in the Wairau, Awatere and Clarence catchments, of which Molesworth forms a part.

Molesworth also provides bird habitat in the shrublands that support populations of miromiro/South Island tomtits (*Petroica macrocephala*), kakaruai/South Island robins (*Petroica australis australis*) and pī pipi/brown creepers (*Mohoua novaeseelandiae*).

Little survey work has been done for invertebrates on Molesworth. However, there are records of rare or unusual species including a speargrass weevil *Lyperobius huttoni*, the Kaikoura giant wētā (*Deinacrida parva*) and the bluff wētā (*Deinacrida elegans*). Given the range of habitats on Molesworth, there is little doubt that intensive survey would yield more invertebrates of note.

Game birds that are found on Molesworth include chukar (*Alectoris chukar*), California quail (*Callipepla californica brunnescens*), mallard (*Anas platyrhynchos platyrhynchos*), pārerera/grey duck (*Anas superciliosa superciliosa*), and pūtakitaki/paradise shelduck (*Tadorna variegata*).

2.1.3 Freshwater species, habitats and ecosystems

Molesworth spans the headwaters of three major catchments—the Clarence, Wairau and Awatere. The Clarence and Wairau rivers rise in the western part of Molesworth where westerly rains hit the St Arnaud and St James ranges, while the Awatere River rises in the drier Rachel and Inland Kaikoura ranges. These headwaters also contain lakes, tarns and wetlands. Wetlands and braided rivers are nationally significant ecosystems. Many of Molesworth's rivers are braided and host the braided river bird species presented earlier in this section.

Wetlands and tarns on Molesworth represent important habitat for freshwater species and wetland vegetation, as well as valuable landforms. Of particular importance are the Sedgemere tarns, which are some of the richest and most diverse freshwater communities in Marlborough, and Lake McRae, which is unusual in that it lacks introduced fish (similar to some of the smaller tarns near Sedgemere and the entire Yarra catchment). The majority of the lakes on Molesworth are free from invasive introduced aquatic weeds such as *Lagarosiphon major*. The riparian margins, tarns and wetlands are home to several species of threatened plants, one of which is found nowhere else in the world—*Craspedia* 'tarn'.

Molesworth supports a diverse range of native fish species. Some populations have evolved in the absence of introduced species, such as the endemic Tarndale bully (*Gobiomorphus alpinus*), which has been found only in the Sedgemere tarns. The Clarence River is the southern limit for the northern flathead galaxias (*Galaxias vulgaris*), a genetically distinct form of the Canterbury galaxias which is endemic to the top of the South Island.

Longfin eels/tuna (*Anguilla dieffenbachii*) inhabit many of the rivers and lakes, and dwarf galaxias (*Galaxias divergens*) are found in many of the rivers and streams. Both species have a national threat ranking of 'Declining' (Allibone et al. 2010). Shortfin eels/tuna (*Anguilla australis*) have been recorded in Island Lake.

Molesworth acts as a spawning area for introduced Chinook salmon in the upper Clarence and Acheron Rivers and some of their larger tributaries (particularly the Severn and Alma Rivers). There are also numerous introduced brown trout spawning streams throughout Molesworth.

A comprehensive description of the plant and animal species of Molesworth can be found in Courtney & Arand (1994). A list of indigenous and introduced species known to occur on Molesworth is provided in Appendix 3.

2.1.4 Ecosystems services

A wide range of natural conditions and processes help sustain and fulfill life. Collectively, these benefits are known as ecosystem services and include products like clean drinking water and processes such as the decomposition of wastes. Ecosystem services are distinct from other ecosystem products and functions because there is human demand for these natural services. They can be subdivided into five categories:

- *Provisioning*, such as the production of food and water
- *Regulating*, such as the control of climate and disease
- *Supporting*, such as nutrient cycles and crop pollination
- *Cultural*, such as spiritual and recreational benefits
- *Preserving*, which includes guarding against uncertainty through the maintenance of diversity.

By maintaining the ability of natural areas to provide ecosystem services, the costs and risks that would be involved in trying to deliver these services artificially are avoided.

A critical ecosystem service derived from Molesworth is soil and water conservation. Farming operations on Molesworth enabled the repatriation of eroded rabbit-prone land by managing and funding the Crown's large-scale soil conservation project (see section 2.2: *History*). Because Molesworth is the starting point for the three largest rivers in Marlborough, land use on Molesworth directly affects water quality in these major waterways. The recognition of the importance of Molesworth for soil and water conservation is a key reason why the Crown has retained ownership of Molesworth over the decades.

2.2 History

The country now known as Molesworth has been important historically for both Māori and European. For tangata whenua, the high country of Te Waipounamu/South Island is fundamental to their identity.

2.2.1 Early explorers

Numerous trails were developed throughout the high country to link Māori settlements to mahinga kai/food gathering resources and pounamu/greenstone. Trails followed mahinga kai resources such as vegetation, repo raupō/wetlands, awa/rivers and roto/lakes, which were all used by travellers to survive in the high country. The abundance of mahinga kai ensured that Māori regularly travelled to the high country to gather food and other cultural resources.

The Molesworth country was one link in the trails developed throughout the high country (Brailsford 1984), offering an easy summer route to the West Coast by way of the Upper Wairau or Awatere valleys, Tarndale and Lake Tennyson. The early Europeans learned of them from Nelson Māori and William Travers employed the Māori guide Napera in his exploration through the Upper Wairau in 1855.

From the 1850s, the main inland route between Nelson/Marlborough and North Canterbury ran through the heart of Molesworth. The old cob accommodation houses at Tophouse, Rainbow, Tarndale and Acheron are reminders of this. Stock routes through Molesworth delivered most of the livestock for the initial stocking of the Canterbury runs, from Nelson/Marlborough, and continued to be used for a period of about 50 years. Although most of the primary horse and stock routes through Molesworth were surveyed as legal roads, they remained horse or cart roads until those that passed through the Clarence and Acheron valleys were upgraded during the building of the electricity lines in the 1960s.

Originally known as Barefells Run, Molesworth Station was given its name in 1866 by John Henry Caton. The origin of the name 'Molesworth' is uncertain. The station may be named after Sir William Molesworth, a director of the New Zealand Company; but, more likely, it relates to Francis Alexander Molesworth, Sir William's younger brother and a friend of the early European explorer, Frederick Weld (McCaskill 1969). European settlement of Molesworth was originally contained in the former Molesworth, Tarndale, Dillon and St Helens pastoral runs which were taken up in the mid 1850s (Map 5).

2.2.2 Farming and land management

South Marlborough's tussock grasslands were the location of New Zealand's first large-scale pastoral farms (or 'runs'). Although initial stocking of Molesworth and Tarndale was in cattle, the animals had been largely supplanted by the mid- to late-1860s by merino sheep. By 1900, there were almost 95 000 sheep on the four properties combined.

The 1870s and '80s saw the arrival of rabbits and proliferation of the sheep parasite scab mite. Attempts to control and eradicate scab led to substantial fencing of boundaries, improved dipping and the building of boiling-down plants on the runs. Molesworth and Tarndale weren't clear of scab until the late 1880s. The runholders regularly burnt the tussock to provide stock with more palatable regrowth and to improve stock access up the valleys. The more open grasslands suited rabbits and their numbers increased dramatically. The combination of close grazing by sheep and rabbits, and persistent burning, led to a rapid deterioration and loss of surface cover. The exposed soils were subject to rapid erosion as a result of frost-heave, wind and rain.

Stock numbers fell, but the rabbits continued to thrive. The runholders frequently suffered very heavy stock losses in the winter snows. These losses, in combination with economic recessions, meant that funds were not always available for rabbit control, undertaken using the technology of the day. The cycle of deterioration continued and by the mid-1930s, the four runs were desolate properties—rabbit infested, denuded of vegetation and suffering from severe erosion.

In 1938, Molesworth and Tarndale were abandoned, the leases reverting to the Crown. St Helens and the Dillon suffered the same fate in 1949. The properties came under the control of the Department of Lands and Survey and were amalgamated to form Molesworth Station, which retains the same boundaries today and is New Zealand's largest farm.

The Department of Lands and Survey developed a soil and water rehabilitation plan for Molesworth involving rabbit control, revegetation, the removal of sheep and their replacement with cattle. Initially, rabbit control work was undertaken on the ground by rabbiters. Aerial poisoning commenced in 1948 and by 1952 had replaced ground poisoning as the principal means of control. Rabbit numbers were dramatically reduced.

In 1953, aerial over-sowing with cocksfoot and clovers began and between 1963 and 1966, some 37 000 hectares were seeded. By the early 1970s, the number of cattle wintered had reached the current level of 9000-10 000 head.

Central government restructuring during the 1980s resulted in the control and administration of Molesworth becoming the responsibility of Land Information New Zealand. The Crown, through the Commissioner of Crown Lands, leased Molesworth to Landcorp Farming Limited. In 2005, Molesworth was vested as a recreation reserve subject to the farming lease under the administration of the Department of Conservation.

The Molesworth story is also about the people who have lived and worked the land to repatriate it and ensure it retains the values it affords today. Since being taken over by the Crown in 1938, Molesworth has had only three managers—Bill Chisholm, Don Reid and Jim Ward. The persistence and competence of these men, together with their wives and families, has aided the farming development and rehabilitation success of Molesworth.

2.2.3 Current day management

As well as its national significance to the New Zealand farming community, Molesworth attracts people from all walks of life who want to visit the iconic high country landscape, often simply to 'have a look'. The Tophouse Road has been open to the public for many years, at least as far as Lake Tennyson from the south. The Acheron Road was first opened to the public in 1988, during January and February, with a toll exacted for road maintenance and visitor management. The drive through Molesworth attracted approximately 3300 people that year (Cox 1989). The road continued to open each summer, fire risk permitting, with the road toll removed in 2005/06.

As explained in section 1: *Introduction*, in 2003 the Government decided to add Molesworth to the network of high country parks and reserves under the administration of the Department of Conservation, retaining farming, under lease to Landcorp, with the intention of enhancing conservation and recreation values. Thus, Molesworth continues its long history as Crown land managed for farming purposes with enhanced emphasis placed upon other values important to New Zealanders.

A few histories and historical accounts of life on Molesworth have been written (see Stronach 1953; Tomlinson 1968; McCaskill 1969).

2.3 Historical and cultural heritage

The travellers and graziers have left behind both their stories and evidence of their inhabitation. While places of cultural significance to tangata whenua and others may exist without any markers in the landscape, some tangible evidence of their activities is likely to remain in Molesworth. An initial survey of Molesworth's historic and archaeological sites (Bagley & Jones in prep.) has identified historic structures, places and artefacts that provide evidence of the range of past human occupation and use. This list of recorded historic places is presented in Appendix 2 and on Map 5, and may be augmented over time as a result of further surveying.

2.3.1 Māori heritage

Reported information of Māori occupation of Molesworth includes the remains of a whare/house found in the Acheron valley by the European explorers Mitchell and Dashwood in the 1850s. Travers, who owned the Lake Guyon run (adjoining Tarndale on the south-west), described his men finding stone axes (adzes), paua shells, remains of eel/tuna baskets and other articles left along travel routes. There is also a record of moa bone and an obsidian flake having been found at the outlet of the Clarence River at Lake Tennyson in the 1980s. The trails, resting places, mahinga kai resources, burial sites and stories relating to Māori trails are recorded in iwi traditions and are of immense significance to iwi today. The protection of these significant values and places is important to ensure future generations can one day learn more about their tīpuna/ancestors and, therefore, about themselves.

Te Rūnanga o Ngāi Tahu intend to survey places of significant value to Ngāi Tahu in the Kaikoura area, including Molesworth. This project will provide increased knowledge about the Māori heritage of Molesworth, particularly knowledge relevant to Ngāi Tahu.

2.3.2 Early European buildings

The best-preserved and most obvious of the early European heritage are the remaining cob buildings—the Acheron Accommodation House (1863), the Molesworth Cob Cottage (which was the original Molesworth Homestead) (1866), Tarndale Homestead (1872) and the present Molesworth Homestead (1885). These buildings are some of the key elements in the wider historic and archaeological landscape of Molesworth.

Built near the confluence of the Clarence and Acheron rivers, the Acheron Accommodation House was established in 1863 for the travellers passing through Molesworth. It is the oldest in a chain of Provincial Government-authorized accommodation houses constructed along the Upper Wairau-Tarndale-Hanmer route, which included Tophouse, Rainbow, Tarndale and Jollies Pass. It was built by Ned James, who also built Tarndale and Molesworth homesteads, and served travellers under a succession of licencees until the death of Ernie Tozier in 1932. It remained in use as a musterers' base on St Helens Station until that station was amalgamated with Molesworth in 1949. Bill Chisholm, the manager of Molesworth Station at the time, undertook basic restoration work. He protected the exterior from stock damage and lined the interior with hardboard so that he could use it to accommodate a resident stockman. Isolation and winter weather proved too harsh, however, and the building then remained unattended until 1966 when the Canterbury Branch of the New Zealand Historic Places Trust saved it from demolition. It has been conserved by the Trust and the Department since that time. The historic values also extend to the various archaeological features of other buildings, a water race, remnant fencing, the old barn and the orchard and other exotic plantings in the general vicinity of the Accommodation House. This area is defined as the Acheron Accommodation House historic precinct. The house is open to the public when the Acheron Road is open.

The Molesworth Cob Cottage, built in 1866, is a good example of the early and modest cob buildings once common on the pastoral runs of Nelson and Marlborough. It was the original Molesworth homestead, built as a one-roomed hut by John (Cornelius) Murphy who managed the station for John Henry Caton, the third runholder. It was later extended by the fourth runholder, William Atkinson. Murphy claimed to be the first person to over-winter in it, which he later described 'as a sort of Esquimaux's life; we were shut up sometimes for four or five weeks'. This building remained the homestead until 1886 when the present, larger, cob homestead was built, not far away. The original cottage was then used to accommodate musterers and rabbiters. It has been conserved and managed by the Department since 1990. There is also an archaeological precinct around this building (on both sides of the road), which includes the remains of other associated buildings, artefacts and trees. This site is located on road reserve and is not technically part of Molesworth Recreation Reserve.

The current Molesworth Homestead, its associated buildings, and the station homestead at Tarndale, are not publicly accessible. They continue to fulfil an important farming purpose, providing accommodation to the present-day manager's family and staff as they work the station cattle herd. However, they are important historical foci within Molesworth Station and the same requirements to manage and conserve their historic integrity pertain as with the publicly accessible buildings. The Homestead, the Woolshed and the numerous ancillary buildings in the Homestead block are part of the Homestead historic precinct, which also includes a collection of old farm implements and archaeological features such as a water race. Tarndale Homestead and associated old cob shed, ancillary wooden buildings and archaeological features, including the site of the old woolshed, form another historic precinct.

All of these precincts contain an historically significant mix of buildings, structures and archaeological evidence that reflect their use and development throughout the various phases of management on Molesworth.

Other station buildings with identified historic values are various huts and sheds currently owned and used by the Lessee. These again reflect a range of periods and functional roles on Molesworth. They include: Half Moon Hut and Yarra Hut (with archaeological evidence of an earlier cob building), both built in the early 20th century; Red Gate Hut with associated directional fingerpost (sign post) and Augarde grave; Acheron Hut ('Kerrytown' rabbiters' camp historic precinct) and associated artefacts and archaeological evidence; Guide Stables; and Team Hut (a New Zealand Forest Service (NZFS) FS 81 Hut, built in 1959). In addition, there is the Old Lake McRae Hut and the Elliott Bivvy, both of which are owned by the Department.

2.3.3 Fences

Remnants of the early graziers' management of their runs also can be seen in the fences they built. An important and relatively intact remnant of the 130-km-long Waiau Rabbit-proof Fence survives as the boundary fence between Molesworth and the St James Conservation Area in the upper Clarence River valley. This fence was built by the Hurunui Rabbit Board in 1889 in an unsuccessful attempt by the Amuri runholders to stem the tide of rabbits spreading from the north. The section of fence between St James Homestead and the Upper Waiau via Maling Pass (St James Conservation Area) is a very significant historic structure and archaeological feature. There are many other remnants of historic sheep fences on the station which retain in-situ evidence of stock management within the various antecedent stations.

2.3.4 Early European archaeological sites

Although their respective structures have long gone, there are historically important archaeological sites and complexes surviving from other early farmsteads, out-stations and huts. These include the original Saxton Tarndale Homestead site (1857). This is the earliest known evidence of European occupation on Molesworth and included an earth house, a hut and stockyards. The first Tarndale Accommodation House was sited at the mouth of Horse Gully—the house was built in 1863 and operated until it was replaced by the present Tarndale Homestead in 1876. There is also an archaeological complex on the river terrace to the east of the Acheron–Clarence river junction where the Carters had a woolshed, house and dip, when they were the St Helens runholders. These probably date from the 1870s and the area is still known as Woolshed Flat.

2.3.5 Tracks, routes and roads

There is also archaeological evidence associated with the various horse tracks, droving routes and cart tracks. The main north–south valleys of the Acheron and Clarence rivers provided the primary routes through Molesworth. However, there were various entry routes to these valleys and also many subsidiary routes connecting the two. Access at the northern end was most commonly gained via the Upper Wairau River. There was a benched horse track used for droving, which was superseded by a cart road in the early 1880s. There were also alternative routes from the Wairau River—via the Waihopai River, over the Waihopai and Saxton saddles and into the Saxton River; or over the Canterbury Spur and Acheron Saddle into the upper Acheron River. The main route from the upper Awatere River was over Barefell Pass and down the Guide River to the Acheron River. The Upper Wairau–Clarence River route used Island Pass and exited to Hanmer Springs via Jacks Pass, while the Acheron River route was over Jollies Pass.

The internal routes included Travellers valley between the Wairau and Acheron rivers, and the direct and often favoured stock route via Tarndale, the Alma, Yarra and Five Mile rivers to the lower Acheron River. There were several significant junctions on these routes, notably at Sedgemere (a three-way option), the Acheron–Alma river junction and the Guide–Acheron river junction. Two of the fingerposts (sign posts) erected in 1886 remain, one at Sedgemere (at Fish Lake), and the other at Red Gate. The latter originally stood at the Alma–Acheron river junction but was moved by Bill Chisholm to safeguard it. The routes over Saxton Pass and down the Acheron River were formed cart roads. Little remains of the original formations, which were largely destroyed when upgraded by the New Zealand Electricity Department (NZED).

Other recorded archaeological features associated with these routes include remnants of old benched formations, cairns, campsites and fireplaces. There are also several remnants of stock bridges across the Acheron River (just above the Guide River) and the Clarence River (just below Bush Gully). Another stock bridge across the Acheron River at its junction with the Clarence River was restored in 2012/13. This was built for St Helens Station in 1945 by engineering students from Canterbury University. Internal Molesworth stock routes exist through most of the accessible valleys and saddles (e.g. the Robinson Saddle, Five Mile saddle). These have not been fully surveyed and may contain archaeological evidence in the form of track formations and campsites.

The other significant use of the natural routes through Molesworth has been for pylons carrying electricity from the lower South Island hydroelectric stations to the Cook Strait cable at Fighting Bay (Oraumoa) in Marlborough. This pylon line was built from 1962 and entailed a significant modification of existing roads and the bulldozing of new ones. It also saw the establishment of several works camps (demolished and bulldozed when finished with) and at least three large suspension bridges to provide access to pylons where the line crossed the Clarence and Acheron rivers. Only one of these NZED bridges now remains—at Pig Trough Gully on the Acheron River, upstream of the Clarence confluence. Historic NZED-built buildings remain at Molesworth Homestead, and include the Chalet at Sedgemere (the latter now owned by the Department).

2.3.6 Other historical and cultural heritage

It is also likely that historic remnants remain of the significant work done by the Department of Lands and Survey and the Department of Scientific and Industrial Research on soil conservation. To date, the only feature recorded is the old enclosure plot at Island Pass. The New Zealand Forest Service was instrumental in planting trees, including forestry plots, on Molesworth, the remnants of which remain today.

Molesworth has several graves and memorials to past associates (e.g. Ivanhoe Augarde at Red Gate), while another dimension of Molesworth's history is its place names. The names given to natural and built features by Māori and European, in both an official and unofficial manner, add meaning to the Molesworth landscape.

2.4 Farming

The long history of pastoral farming on Molesworth has provided a wealth of knowledge which has been used to develop farming practices suitable for Molesworth. Since the 1940s, when cattle were introduced, a rotational grazing regime has been followed, which continues today. Cattle are farmed on Molesworth because they do not graze the plant cover as closely as do sheep. The lack of safe winter country for sheep, and the unfavourable complementary grazing of sheep (stock) and rabbits (pests), were other compelling reasons for not farming sheep. The evidence of the past 65 years is that extensive cattle grazing, with numbers limited by the winter carrying capacity, has substantially aided vegetative recovery.

Most grazing occurs on the valleys floors and lower hill slopes. Stock wintered on Molesworth number up to 10 000 head (including up to 3500 breeding cows), with variations according to seasonal limitations. The cattle herd consists of the Angus and Hereford breeds and their crosses, with increasing numbers of pure Angus through the sole use of Angus bulls for breeding. These are early-maturing breeds with a good ability to forage and fend for themselves. Over the years, management has changed from selling store cattle (animals not yet ready for processing) to finishing the cattle on Molesworth or other nearby Landcorp farms.

As part of the rehabilitation programme on Molesworth, around 50 000 hectares, particularly the lower slopes and valley floors, have been aerially over-sown with grass and clover seed over the years. To maintain improved pastures, approximately one-third of this area is topdressed every year (shown on Map 6), with occasional re-seeding as required. The maintenance of Molesworth's stock carrying capacity at today's levels requires significant inputs in the form of over-sowing, fertiliser application, weed control, and pest and wild animal control.

The extensive rotational grazing regime used on Molesworth follows seasonal growth patterns and has been developed specifically for Molesworth conditions (Map 7). It minimises the need for fences and avoids undue grazing pressure on vegetation by resting blocks for several months, at the times most beneficial to the vegetation. It allows stock to put on maximum condition in the summer months to enable them to progress through winter without having negative impacts on pasture. Some of the natural values that remain on Molesworth today owe their survival (in part) to this management system.

The large scale of Molesworth allows the wetter western areas to be used for extensive summer grazing and the drier eastern side for winter grazing. This removes grazing from the important indigenous grasslands in the wetter western catchments in the winter when they are at their most vulnerable. The health of the predominantly indigenous grasslands of Molesworth is paramount to the success of the grazing system.

Molesworth breeding cows are divided into two herds, one based at Tarndale (1300 head) and the other at Bush Gully (1200 head). These herds graze the predominantly unimproved country in the Wairau and upper Clarence catchments, respectively, from October to May. Stock are very lightly spread to obtain maximum production with minimum impact and they are constantly managed by stockmen to ensure this occurs. The first-calving heifers (800) calve in the top-dressed Alma blocks.

Wintering of these herds sees the Tarndale herd grazed in the Awatere and Elliott country, with the Bush Gully herd in the Dillon catchment and the Lower Clarence areas. The topdressing of the Awatere blocks allows greater stock numbers to be carried there than in the Dillon country without compromising condition. Calves are wintered with the cows, which consolidates the calves' knowledge of the property. This is important for their later life within the herd. All unimproved country where cows are run is either spelled in summer or from autumn through to November to allow for the maximum recovery of pastures.

Young cattle (2 and 3 year olds) winter in the Acheron country, which is spelled from December to May to allow maximum vegetation recovery for this purpose. The young steers spend the summer in the upper reaches of the Severn and Alma valleys. They are stocked at very light rates and obtain excellent growth rates and condition. The heifers are run in the Awatere blocks (adjacent to the homestead) for mating from January to May, and winter separately from the cows.

After weaning in September, the yearlings from both herds spend time on topdressed blocks for the summer. After Christmas, the Awatere yearlings graze the Saxton and Robinson blocks. The Bush Gully yearling heifers move into the Guide valley and the steers to the topdressed Lower Clarence country. Stock live-weight gains for these cattle over the summer months are usually very good.

Between 1967 and 1979, the New Zealand Forest Service planted approximately 300 hectares of exotic trees (Scots pine, lodgepole pine, Corsican pine, ponderosa pine and larch) on Molesworth, mostly on the Tarndale Flats, to provide shelter, firewood, posts, poles, sawlogs and timber. At that time, plantation forestry was considered a sustainable land use option for severely degraded high country lands. However, the potential for afforestation on Molesworth, as a purely commercial enterprise, was limited by the slow growth rate of trees in the harsh climate and by the distance from markets. As a result, no trees were felled for commercial timber production and the plantations became a source of wilding trees that threatened natural values, especially landscape values. For this reason, most trees were removed in the early 2000s, with some remnant windbreaks remaining today that have a low risk of spread.

Two commercial apiarists (beekeepers) maintain 1300-1500 hives on Molesworth.

2.5 Biosecurity threats

The management of threats is discussed in section 4.7: *Biosecurity and management of threats*.

2.5.1 Weeds

Key weed species on Molesworth are broom, gorse, briar and wilding trees (conifers). Compared with other lower altitude, wetter and more fertile sites in New Zealand, the range of weed species present on Molesworth is small. However, because of the low stature of the natural vegetation and the relatively infertile soils, the risks to the environment resulting from the domination and eventual replacement of native plant communities by weeds is extremely high. There is the potential for weed species that are common in other parts of the South Island high country to become established on Molesworth. Therefore, the prevention of invasion by new weeds is a high priority.

The Woody Weed Control Operational Plan for Molesworth Station (Raal 2012) aims to control weeds for the benefit of the natural environment and the recreational, landscape and pastoral grazing values of Molesworth.

The Molesworth environment is particularly vulnerable to invasion by unwanted, exotic tree species—the risk of increased spread is high. Tree species most at risk of spreading are contorta pine, Scots pine and Corsican pine (Ledgard 2006), a legacy of the work of the New Zealand Forest Service to establish them in neighbouring catchments.

The majority of the lakes on Molesworth are free of invasive introduced weed species, as mentioned in section 2.1: *Natural resources*. The freshwater alga didymo (*Didymosphenia geminata*) has been found in the Clarence and Wairau rivers.

2.5.2 Pest and wild animals

Pest and wild animals present on Molesworth include browsing animals such as rabbits, hares, possums, goats, pigs, chamois, red deer and Canada geese, as well as predators such as cats, mustelids (stoats, ferrets and weasels) and rats.

Rabbits have been a problem on Molesworth for many decades and contributed to the runholders walking off the land in the 1930s and 1940s. The most significant improvement to the Molesworth environment in the last decade has resulted from the reduction in rabbit numbers following the spread of rabbit calicivirus disease (RCD). This demonstrates the importance of managing animal pests in order to achieve both nature conservation and farming outcomes.

Of greatest threat to the productive values of Molesworth is bovine tuberculosis (TB). Control programmes aimed at feral vectors (possums and ferrets) and carriers (pigs) of bovine TB have been a cooperative exercise between the Lessee and the Animal Health Board, with a strong research focus (undertaken by Landcare Research). The control programme aims to reduce vector/carrier numbers and eradicate TB from the herd. Because the Molesworth herd carries TB, this is a priority pest and wild animal control activity, and illustrates how Molesworth supports research that has national benefits.

Canada geese, if not controlled, are a threat to both pasture production and conservation values, although some research (Lee et al. 2010) suggests they may fulfil an ecological role formerly occupied by now extinct native waterfowl. Their numbers on Molesworth are linked to coastal populations; however, Molesworth also has a resident population that often lives and nests in isolated valleys, sometimes at high altitudes. As a gamebird, Canada geese were managed by the Fish and Game Council in accordance with the South Island Canada Goose Management Plan. Since 2011, when Canada geese were removed from the game schedule of the Wildlife Act 1953, their management has been the responsibility of the Department. Control of Canada geese has relied largely upon organised goose shoots, using recreational hunters, conducted three times a year.

2.5.3 Fire

Fire is a major concern on Molesworth because it has the potential to decimate native habitat and species, destroy critical winter feed supplies and expose soil to erosion, thereby undermining long-term gains made in vegetation rehabilitation over the years.

Repeated burning was one of the early management practices that led to the degradation of Molesworth, but burning has not been used as a land management tool since the Government took over the station in 1941. The public are prohibited from lighting fires anywhere on Molesworth with the exception of the Clarence River campsite known as Big Eddy (used by rafters and kayakers).

Public access on Molesworth has always been subject to restriction at times of high fire risk. Usually, restricted access is limited to the drier eastern side, as the wetter conditions in the west reduce the fire risk. For this reason, the Tophouse Road (Clarence valley) is seldom closed to the public because of the fire risk; however, closure of the Acheron Road is possible for several weeks during the summer.

Fire risk is assessed using weather data (rainfall, temperature, relative humidity, and wind speed and direction) from remotely monitored weather stations sited at the Molesworth Homestead, the Awatere valley and Hanmer Springs. These data contribute to the calculation of a fire risk index that provides a quantitative trigger for road closure. Molesworth often records the highest fire risk index of any location monitored within New Zealand.

2.6 Recreation and public access

There are two styles of recreation pursued on Molesworth—activity focused along the roads, which broadly can be termed ‘scenic driving’ and includes vehicle-based camping; and adventure activities that take place in the remote areas of Molesworth (fishing, hunting, tramping, cycling, horse trekking, botanising, rafting, kayaking, 4WD driving). Road-based ‘scenic drivers’ are the vast majority of Molesworth visitors.

2.6.1 Recreational use

2.6.1.1 *Scenic driving*

Scenic driving on the Acheron Road has increased gradually over the past 20 years, since the road opened to the public in 1988. In that year, 1200 vehicles used the road during the 6-week road open period, while 3800 vehicles were recorded during the 14-week road open period in 2010/11 (figures have not been adjusted to account for farm traffic, etc.). An estimated 850 vehicles and 750 bicycles and motorbikes drove through Rainbow Station along the Tophouse Road in 2008/09.

A 2010 survey of Acheron Road users (Galvin et al. 2010) identified that just over half of the survey respondents were travelling by 4WD vehicle. The average group size was 2.7 people, many visitors were older adults (60+ years), and 86% were New Zealanders, most of whom were from the South Island. Most groups (63%) comprised first-time visitors to Molesworth, and the majority of respondents spent 2–3.5 hours in Molesworth (71%) and did not camp during their visit (75%), while 43% said they had visited an historic site.

During the 2010/11 summer, 759 people camped at the Molesworth Cob Cottage camping area and 870 at the Acheron camping area (1629 total camper-nights). The number of people using the camping area at Lake Tennyson is not known.

2.6.1.2 Tramping

Tramping on Molesworth involves route planning, as there are no multi-day formed tramping tracks. The unmarked East-West Route, with huts available en route, is available for trampers. With the addition of public land adjoining Molesworth, new tramping routes have become available, particularly in terms of multi-day, 'cross-boundary' opportunities. Short tracks accessed from the Acheron Road provide for part-day walks and encompass scenic viewpoints.

2.6.1.3 Cycling

Cycling on the two formed roads crossing Molesworth is classified as 'intermediate grade' (Kennett Bros 2008). Cycling has evolved from a few touring camping cyclists to large one-day bike events (see later in this section) and a small number of adventurous cyclists seeking out routes off the formed roads. The Molesworth Muster Cycle Trail passes through Molesworth along the Acheron Road.

2.6.1.4 Fishing

Molesworth offers backcountry fishing opportunities for large brown trout. While salmon are primarily fished downstream from the Molesworth boundary, Molesworth acts as a spawning area for both species. The National Angler Survey (Unwin 2009) records 3830 (\pm 720) angler days in the 2007/08 fishing season for the Clarence River catchment (including the Clarence River and some of its tributaries such as the Leader Dale, the Acheron River and its tributaries the Saxton, Severn and Alma, and the complex of tarns at Sedgemere, Island Lake, and Bowscale Tarn). Fishing also occurs in the upper Wairau River and at Fish Lake.

2.6.1.5 Hunting

Three types of hunting occur on Molesworth—game bird, small game and big game. Chukar are present on Molesworth but have declined in numbers from unknown causes. Fish and Game New Zealand will not open a hunting season for chukar until such time as the population increases and better information is available to manage them. Californian quail are common in suitable habitat in the lower and drier parts of Molesworth, but their inaccessibility means hunting is rare. Mallard, pārerā/grey duck and pūtakitaki/paradise shelduck occur on Molesworth and can be hunted in season.

Small game species that are hunted include possum, rabbit, hare and Canada goose. Organised Canada goose shoots (previously managed by the Nelson Marlborough Fish and Game Council) have taken place on Molesworth since the early 1980s. Around 800–1000 daily hunter visits occur annually over three organised hunts, which have been largely successful in keeping numbers to manageable levels.

These organised recreational hunts remain the preferred method of control for Canada geese on Molesworth. Wild animals on Molesworth (red deer, chamois, pigs and goats) are sought by hunters.

2.6.1.6 Rafting and kayaking

Rafting the Clarence River is a multi-day, remote experience—New Zealand's longest remote whitewater trip. Offered by several adventure tourism companies or undertaken independently by recreationists (usually with hire equipment), most rafts are launched at the Acheron-Clarence river confluence with the journey ending near the sea. A similar trip is pursued by small numbers of kayakers. Most rafters and kayakers camp on Molesworth at the Big Eddy campsite (upstream from Rough Creek) and sometimes at the Acheron-Clarence confluence put-in site. Limited river use occurs above the Acheron-Clarence confluence with the exception of some 'play boating' (kayaking) in river holes.

2.6.1.7 *Driving motorised recreational vehicles*

Motorised recreational vehicles are driven on Molesworth, but their use off formed roads is subject to consent. In the past, group events (e.g. those organised by Hanmer Lions Club) have proven popular.

2.6.1.8 *Snow-based activities*

Few snow-based activities (cross-country skiing, snow shoeing, snow mobiling) occur on Molesworth.

2.6.1.9 *Recreation events*

Recreation events based on Molesworth (in 2013) were the Molesworth Muster (biking), the Rainbow Rage (biking) and the Molesworth Run. In recent years, participants have numbered around 300–700 for each of the bike events and approximately 250 for the Molesworth Run.

2.6.1.10 *Other recreation concession activities*

Activities undertaken under a concession on Molesworth include guided fishing, horse trekking, cycling and 4WD driving, as well as interpretive tours and events.

2.6.2 *Public access*

Molesworth may be accessed by road via Hanmer Springs, the Awatere valley and through Rainbow Station (subject to the consent of the lessee of Rainbow Station). In recent years, the section of road through Rainbow Station has been open to the public between late December and early April, with a toll payable to the Rainbow Station lessee. These roads were originally built for construction of the electricity pylon network through Molesworth (see section 2.2: *History*). All roads are unsealed.

Until 1 July 2005 (when Molesworth became a recreation reserve), public access rights on Molesworth were as follows:

- Open access year round along the Tophouse Road (beside the Clarence River) and to lands in the upper Clarence valley
- Open access (since 1988) to the Acheron Road during January and February, with a toll charged
- Open access on the lands adjoining water bodies (20-metre riparian margins alongside rivers that are more than 3 metres wide and some lakes) shown on Map 2
- Access by consent of the Lessee to all other areas (similar access regime to the rest of the South Island high country leasehold land)
- Camping areas at the Molesworth Cob Cottage and the Acheron Accommodation House (since 1988) and beside Lake Tennyson.

In 2005, public access rights were enhanced (and some other access enhancements proposed), in response to the Government's desire to do so. The 2005 farming lease outlined increased public access to Molesworth, which is represented by policy statements in this Plan (section 4.8.3: *Public access*). Specifically, recreational enhancements were:

- Seasonal open access to two new areas (East and North zones; see Map 3); implemented 2005/06 summer
- Extended opening period for the Acheron Road (from 6 weeks to 12 weeks); implemented 2005/06 summer
- New East–West Route: a year-round access route through Molesworth that facilitates links with adjoining lands. The route extends from Sedgemere to the Clarence Reserve, via the Severn, Saxton, Molesworth and Robinson River valleys and Lake McRae. Development of the route began in 2005 and was completed in 2012.
- New day-use tracks branching off the Acheron Road; opened for public use 2008/09 summer

In summary, the public has open access along the Tophouse Road (upper Clarence valley) all year and along the Acheron Road over the summer months. The rest of Molesworth is either open all year, for periods of the year, or access requires consent (through an activity permit system).

Use of Molesworth may increase now that it is recreation reserve and its recreational opportunities are to be enhanced. Management of this use is set out in sections 4.8: *Recreation* and 4.9.1: *Recreation and tourism concessions*.

2.7 Integration of values and the wider context

2.7.1 Integration of values

While the values of Molesworth have been described in isolation in this section, on the ground they overlap. Molesworth management is based on four pillars—natural values, historical and cultural values, farming, and recreation. These values are described in the section 3: *Concept, values and issues*.

2.7.2 The wider context

Molesworth forms part of a continuous east-west band of public conservation land that stretches across the northern South Island. Public conservation land that borders Molesworth includes: Leatham, Rainbow, St James and Hossack conservation areas; Hanmer and Ka Whata Tu o Rakihouia conservation parks; Snowden, Jollies Pass and Lake Tennyson scenic reserves.

Tenure review (under the Crown Pastoral Land Act 1998) and Crown land purchases have been completed on four properties bordering Molesworth—St James, the Leatham, Clarence Reserve and the Muzzle. The result is more public conservation land adjacent to Molesworth, creating opportunities for linkages across public lands. Any future tenure review in the area may offer additional opportunities.

With the addition of the St James Station to the high country park network, there are opportunities for synergy between Molesworth and the St James, given their long common boundary (see Map 1). Recreation opportunities have increased from access points along the Tophouse Road in the Clarence valley; in particular, associated with cycling and horse trekking.

3. Concept, values and issues

3.1 Vision for Molesworth

Molesworth is a working high country station that integrates the conservation of natural, historical and cultural heritage with farming and recreation, in a manner that is consistent with its management as a recreation reserve subject to a farming lease.

3.2 Values

Molesworth is unique. What sets it apart from other areas of public land is the significance of each of its values (natural resources, historical and cultural heritage, recreation, farming) and the synergy achieved by their integrated management. It is the inter-twining of values that is the very essence of Molesworth.

Collectively, the values of Molesworth provide a sense of place that makes Molesworth a 'living' taonga/treasure. It is a place where the past connects with the present; the past is kept alive through farming, recreation and the protection and interpretation of the historical and natural values. Molesworth's values are described below.

3.2.1 Natural values

Molesworth's natural values centre upon:

- A vast uncluttered landscape that integrates natural and cultural features, and includes the headwaters of three major river systems (Wairau, Clarence, Awatere).
- The diversity of its ecosystems, including some that are threatened or rare.
- Its contribution to South Marlborough as a national centre of endemism for plant and animal species. The area is home to a significant number of nationally threatened and at risk species.

Rare and diverse natural values (both terrestrial and freshwater) are protected on Molesworth and connect with values on adjoining public conservation lands. It is likely that future survey work will reveal further species and habitats as yet unknown.

3.2.2 Historical and cultural values

Molesworth's historical and cultural values relate to past uses and the importance of high country pastoral farming in New Zealand, which dominated the national economy for over 100 years and has played a significant role in developing New Zealanders' cultural identity.

Significant historical and cultural values are:

- Travellers' routes, used by both Māori and Pākehā, many of which are held as oral histories but also have physical manifestation in the landscape. This includes stock droving routes between Nelson/Marlborough and Canterbury.
- Farming heritage, including historic buildings, structures, fences, and archaeological evidence (e.g. old hut sites, camps, stock tracks, vegetation), as well as stories from people associated with the Station.
- Land management lessons learned from rehabilitating the degraded natural landscape that resulted from unsustainable farming methods, weeds, and introduced pest and wild animals. This includes the introduction of a 'natural' style of beef farming, made possible by the size of Molesworth and its climatic range.

3.2.3 Farming values

Molesworth has been a high country station for many decades. Today, this heritage is manifested as:

- An economically viable farming operation.
- A national showcase, providing leadership in high country farming practices.
- A land use regime that respects the inherent character of the land.

As a high country station, Molesworth continues to instigate pioneering farm practices. Renowned for its successful land rehabilitation following the ravages of rabbits and sheep, today it provides a showcase for combining pastoral farming with conservation and recreation.

3.2.4 Recreation values

Molesworth's vast, remote landscape offers two types of recreational opportunity:

- Access to a South Island high country station in a unique landscape: the opportunity to drive through Molesworth, learn about, appreciate and experience its values, and enjoy associated activities (short walks, picnics, camping, etc.).
- Exploration and adventure: opportunities to seek adventure and explore via activities that match the remote and self-sufficient nature of the terrain (tramping, fishing, hunting, cycling, kayaking, etc.), as well as opportunities to explore the diverse natural values of the area in a manner that is consistent with their protection.

Molesworth provides the opportunity for people to connect with nature and farming, and is valued for its 'wide open spaces'. The vast tracts of remote land and the rivers encourage exploration and adventure. But for most people, the road corridors are where they realise their 'Molesworth experience'.

3.3 Management issues

Past management experience and public comment received during preparation of this Plan indicate several key issues that need to be addressed to give clear management direction. This Plan concentrates on the issues that need particular attention, which are described below.

3.3.1 Public access for recreation

Some people have interpreted the designation of Molesworth as a recreation reserve to mean that recreation is the primary value for which Molesworth will be managed. The recreation reserve status reflects the need to manage and protect Molesworth for a range of values, including farming. A wide range of uses can occur on recreation reserves, which provides for the Government's wish that a viable farming operation continue on Molesworth alongside the enhancement of natural, historical and recreation values.

In order to fulfil this aim of multiple use, public access has been improved since 2005 (see section 2.6: *Recreation and public access*). Achievement of farming objectives is managed via a lease and grazing licence, with the lease placing some restrictions on public access. Therefore, implementation of the 2005 changes through the provisions of this Plan may not match the access expectations of some members of the public.

3.3.2 Control of weeds and pest and wild animals

For many decades, pest and wild animals, especially rabbits, have severely degraded the Molesworth environment and its productive value. More recently, weeds have threatened the conservation and farming values of Molesworth. Today, wilding trees have the potential to dramatically alter the environment, while broom, gorse and briar are prevalent in some areas. Hieracium species are widespread and continue to adversely affect farming production and

natural values. Ongoing control of weeds and pest and wild animals is critical for protecting indigenous species and ecosystems, as well as maintaining farming production. Joint management between the Department and the Lessee of weeds and pest and wild animals is an example of the benefits of integrated land management.

3.3.3 Protection of indigenous biodiversity

Molesworth is home to many nationally threatened species and endemic species. National priorities for the protection of those species do not, in all cases, translate to specific programmes on Molesworth. The reality is that while there are many ongoing threats to indigenous habitats and species, there are also limited resources. Priority setting is essential.

Areas with particularly significant biodiversity values are protected within Areas of High Natural Value—areas on Molesworth that are recognised for their natural values (see Map 8 and section 4.4.1: *Indigenous species, habitats and ecosystems*). However, the valuable ecosystems and habitats for a wide range of indigenous species occur across all of Molesworth. Setting aside some areas is not enough to meet biodiversity goals. Other protection mechanisms, such as control of weeds and pest and wild animals (see section 4.7: *Biosecurity and management of threats*), are essential to the survival of many indigenous species and ecosystems.

3.3.4 Protection of historical heritage

Many of the historic structures and places on Molesworth are either still in daily use or in areas of concentrated farming or recreational activity. A sensitive approach to land use management is required in order to protect historical heritage and values.

3.3.5 Farming

Maintaining a viable, high country farming operation on Molesworth is a challenging task. The short growing season, harsh climate and ongoing weed and animal pest infestations present difficulties. With the additional imperative of integrating farming with conservation and recreation goals, farming operations become more complex. The Government has expressed its interest in retaining Molesworth as a high country station. It is not the intention to ‘sacrifice’ farming values for other values. Farming is one of the four key values for which Molesworth is managed.

However, the style of farming on Molesworth has been specifically developed to work alongside (and, indeed, protect) other values with particular emphasis over the years upon soil and water conservation. Section 2.4: *Farming* describes the ‘extensive’ grazing regime that has been developed to maintain natural values.

3.3.6 Integrated land management

Perhaps the greatest challenge facing the management of Molesworth is how to integrate the various land uses to best advantage. Integration requires a strong commitment to a cooperative style of management between the Department and the Lessee, and between both parties and the public. The farming lease highlights this point, contractually binding both parties to act constructively and respectfully (see section 4.3: *Cooperative management*).

4. Outcomes, objectives and policies

4.1 Treaty of Waitangi responsibilities

This section will be written following completion of the Treaty of Waitangi settlement process for Te Tau Ihu (Top of the South iwi). New text in this Plan about iwi values and interests that is written subsequent to that settlement will be provided to the public for comment.

See also Section 1.6.5 *Treaty partners*
 Section 2.3 *Historical and cultural heritage*
 Section 3.2.2 *Historical and cultural values*
 Section 4.5 *Historical and cultural heritage*
 Section 4.8.5 *Interpretation*
 Appendix 4 *Responsibilities under the Ngāi Tahu Claims Settlement Act 1998*

4.2 Public participation

Outcomes

1. The public is consulted about, and encouraged to provide constructive input into, the management of Molesworth.
2. The public has easy access to information about Molesworth's values and management.
3. The public understands and supports the multiple objectives for Molesworth identified in this Plan.

During the preparation of this management plan, it was apparent that many people were not aware of the management arrangements and the public access provisions for Molesworth. This suggests that more can be done to inform the public about Molesworth and its management.

It was also apparent that some people expected to see unrestricted public access in response to the 2005 change in land status, as noted in section 3.3.1: *Public access for recreation*.

Owing to its many uses, the management of Molesworth involves many different people and organisations. For the public and interested organisations, the Department is the first port of call for information about Molesworth and to have a say in its management. For neighbouring landholders and concessionaires, management decisions about Molesworth may affect their businesses and livelihoods.

Some people wish to assist with conservation and recreation programmes and facilities. Where feasible, opportunities shall be provided for the public to work with the Department to enhance the values of Molesworth.

Objectives

1. To increase public understanding of Molesworth's values and management.
2. To enhance public participation in the planning for Molesworth.

Policies

1. Provide relevant information about Molesworth and its management to the public.
2. Seek to understand the interests and priorities of people and organisations for the future management of Molesworth.
3. Provide opportunities for the public to be involved in the enhancement of the natural, historical and cultural, and recreation values on Molesworth.
4. Be a good neighbour, openly share information about plans and proposals, and work cooperatively to resolve issues that cross shared boundaries.

5. In collaboration with the Lessee and the Molesworth Steering Committee, build and maintain constructive relationships with local landholders, local government, concessionaires and key interest groups.

See also Section 2.6 *Recreation and public access*
Section 3.3.1 *Public access for recreation*
Section 4.3 *Cooperative management*
Section 4.8.5 *Interpretation*

4.3 Cooperative management

Outcome

Organisations and agencies with management responsibilities for Molesworth work together to maximise the benefits of the integrated land use management regime.

An integrated use regime requires coordinated management of the various land uses, activities and values. Decisions about a land use or activity can positively or negatively affect other values. Day-to-day decision-making will take account of other values and, wherever possible, seek to optimise benefits across values.

To this end, close cooperation is needed between the people and organisations responsible for the values being managed. The Department (as Lessor) and the Lessee have particular need for a close working relationship. The lease establishes that the two agencies will interact in a manner that is trustful, open, consistent, fair and non-adversarial. Across many facets of Molesworth management, the lease establishes a relationship between the Lessor and the Lessee, thus confirming the close nature of the working relationship.

The Molesworth Steering Committee operates as an advisory body for those with a special interest or management responsibility for Molesworth. It serves a useful purpose in facilitating decision-making across the collective of interests.

Cross-boundary cooperation is also important because issues such as wilding pines and rabbits span administrative and property boundaries. In particular, biosecurity, biodiversity and water management can be best achieved in an integrated manner between all relevant parties, including the Department and local government.

Objectives

1. To manage each land use or activity in a way that maximises the benefits, and minimises the costs, to other land uses, activities and values.
2. To encourage cooperation and mutual respect between the organisations and agencies responsible for Molesworth's management.

Policies

1. When making management decisions, give consideration to all values that may be affected, not just the value for which a decision is required.
2. The Molesworth Steering Committee should continue to represent the agencies and interests associated with Molesworth, and advise the Minister of Conservation and the Lessee on Molesworth management and planning.

See also Section 1.6 *Agencies with responsibilities for Molesworth*
Section 3.1 *Vision for Molesworth*
Section 3.3.6 *Integrated land management*

4.4 Conservation of natural resources

Outcomes

1. A natural pattern of inter-connected indigenous habitats is restored, which contains a diverse range of native biota and is driven by naturally functioning processes.
2. The open uncluttered landscape and high country character of Molesworth is retained.
3. Molesworth's geological features and landforms remain undisturbed.

4.4.1 Indigenous species, habitats and ecosystems

Biodiversity

In order to protect Molesworth's significant natural values (described in section 2.1: *Natural resources*), the Department has prepared a Biodiversity Strategic Plan (Lloyd & Rate 2010) and intends to develop a Biodiversity Operational Plan, both focused specifically on Molesworth. These aim to achieve the biodiversity outcome stated above and have the following goals:

- a. Build a comprehensive knowledge of the past, present and potential indigenous biodiversity values of Molesworth
- b. Obtain and transfer reliable knowledge to best guide biodiversity management on Molesworth
- c. Allow natural processes to function
- d. Minimise adverse effects of human-induced disturbances and pressures on natural habitats and native species
- e. Maintain, enhance and re-connect existing natural habitats and populations of native species
- f. Restore former natural habitats and biota
- g. Integrate conservation management on Molesworth with surrounding natural areas.

The Biodiversity Strategic Plan sets out the key biodiversity objectives based around these goals while the Operational Plan will detail the actions required to implement the strategy.

The Government has indicated that it wishes to see conservation enhanced on Molesworth. The primary management mechanisms to protect natural values on Molesworth traditionally have been weed control, pest and wild animal control, and fencing areas off from grazing. These continue to be important, as is the close working relationship with the Lessee, demonstrated through fine-tuning of the grazing regime which has been beneficial to nature conservation outcomes.

Molesworth has a long history of biodiversity research, survey and monitoring. The initial focus upon land recovery for production purposes (1940s-1970s) has now shifted to an emphasis upon native biodiversity (1980s onwards).

4.4.1.1 *Terrestrial species, habitats and ecosystems*

Information about terrestrial species, habitats and ecosystems (presented in section 2.1: *Natural resources*) is largely sourced from a 1987/88 survey of geomorphology, vegetation and fauna on Molesworth, undertaken as part of the Protected Natural Areas Programme (Courtney & Arand 1994). The key outcome of this survey was the identification of Recommended Areas for Protection (RAPs), which encompassed a representative sample of Molesworth's natural diversity. This list has been translated into Areas of High Natural Value (AHNV) (see Map 8).

Some of these areas are physically protected from grazing by fencing, either fully or partially. Some AHNVs do not require fencing as they occur at high altitude sites beyond the range of cattle, while others have been left unfenced because of farming considerations and/or practical considerations with fence building and maintenance. Another reason is the concern that total removal of grazing may allow exotic plant species to flourish to the detriment of threatened and

at risk plant species. Management of the AHNVs that occur on basin and valley floors presents the greatest challenge, as these areas are important to both farming (they are key cattle grazing sites) and biodiversity (they contain high natural values).

While an important mechanism for biodiversity protection, AHNVs are not the sole repository of natural values on Molesworth. There are extensive areas that possess high natural values that fall outside the AHNVs. For this reason, new AHNVs may be identified and protected, or boundaries of existing AHNVs changed, as new information becomes available.

Threats to natural values include weeds, pest and wild animals, and human disturbance from grazing and recreational use. Particular issues arise from vehicular use on sensitive areas, such as screes and frost pavements, and the risk of spreading weeds via boots, bikes, horses and motorised vehicles. To avoid damage from vehicles, public access to the Sedgemere tarns is restricted to foot access (see section 4.8.3: *Public access*).

4.4.1.2 Freshwater species, habitats and ecosystems

As described in section 2.1: *Natural resources*, Molesworth has significant freshwater ecosystems. The importance of Molesworth's wetlands and lakes is reflected in their presence within many AHNVs.

Recent (since 2004) freshwater science on Molesworth has focused on fish distribution within the rivers and freshwater quality of the water bodies. It is important that the water quality of the lakes, tarns, rivers and streams is maintained. It is intended to continue monitoring freshwater quality and to take management action if and when issues arise. Currently, there are several lakes and tarns that are trout free—a status that should be maintained in order to protect biodiversity values. Similarly, some water bodies, such as Lake McRae, are free from highly invasive weeds (e.g. *Lagrosiphon major*) and the intention is to keep them this way.

The presence of the freshwater alga didymo was confirmed in the Clarence catchment in 2007 and the Wairau catchment in 2008. Management to minimise its spread is discussed in section 4.7.1: *Weed control*.

As for terrestrial biodiversity, Molesworth freshwater management will be directed by the Molesworth Biodiversity Strategic Plan.

4.4.1.3 Research, survey and monitoring

Surveys and monitoring to identify threatened species distribution, population size and health occur periodically and target high-priority species based on their threat ranking.

A primary purpose is to fulfil a desired outcome for 2020 expressed in the New Zealand Biodiversity Strategy (New Zealand Government 2000: 33): 'A net gain has been made in the extent and condition of natural habitats and ecosystems important for indigenous biodiversity'. To measure achievement of this outcome on Molesworth, there needs to be a comprehensive understanding of the trends within the natural habitats and ecosystems on Molesworth.

The Department has taken over the responsibility of continuing the photopoint monitoring established by Lucy Moore from Botany Division of the Department of Scientific and Industrial Research (DSIR) in 1944. In addition, the Department has established a network of vegetation plots over Molesworth to monitor changes in vegetation over time and in relation to grazing. To date, these have shown that the most important influence on vegetation is altitude, and there has been little change in indigenous plant species composition and biomass between 1989 and 2008 even where stock have been removed. A clear trend has been the increase in hieracium, irrespective of grazing. The dataset is still young and responses in the high country are often slow.

Freshwater monitoring has occurred on two occasions, investigating water quality both by nutrient analyses and Macroinvertebrate Community Index. This has shown that water quality is generally very good at most sites.

Because of its size, Molesworth can make a contribution to or support national biodiversity research programmes. Recent work by Landcare Research on dryland ecosystems as part of a larger Biodiversity Inventory and Monitoring framework is an example of such work.

Objectives

1. To build a comprehensive knowledge base on the indigenous biodiversity values of Molesworth, and use this information to guide biodiversity management.
2. To protect threatened and at risk indigenous species, habitats and ecosystems on Molesworth.
3. To preserve the high level of endemism on Molesworth.
4. To contribute to national biodiversity research programmes.

Policies

1. Implement the Molesworth Biodiversity Strategic Plan and prepare a Biodiversity Operational Plan for Molesworth.
2. Survey Molesworth indigenous species' distributions, population sizes and health.
3. Protect the best representative samples of indigenous species and ecosystems found on Molesworth, including those within Areas of High Natural Value.
4. Expand the number and size of Areas of High Natural Value, as appropriate.
5. Protect and, where appropriate, enhance areas of indigenous biodiversity value outside the system of Areas of High Natural Value within the provisions of the lease.
6. Implement management measures where important indigenous species, habitats and ecosystems are under threat or at risk. These measures will be guided by the Molesworth Biodiversity Operational Plan and may include fencing to exclude stock and exclusion of the public.
7. Manage water bodies that are free of trout and other introduced fish species in order to retain this status.
8. Establish and maintain monitoring programmes (both terrestrial and aquatic) on Molesworth.

See also Section 2.1 *Natural resources*
 Section 3.3.3 *Protection of indigenous biodiversity*
 Section 4.7.1 *Weed control*
 Section 4.7.2 *Pest and wild animal control*
 Section 4.8.3 *Public access*
 Section 4.10.1 *Natural resources*

4.4.2 Geological features, landforms and landscapes

The high country character of the Molesworth landscape and its geological features deserve protection.

Fault traces and tectonic features are not at risk on Molesworth, but their importance should be acknowledged. Future roadworks should endeavour not to disturb the tephra deposit site near the Acheron Accommodation House.

The open uncluttered landscape of Molesworth offers a unique scenic experience. It is important that the intrusion on the landscape of weeds (especially woody weeds) and works (fencing, tracks and buildings) is minimised. This demands a sensitive approach to the construction of

buildings, roads and tracks, power transmission lines, fences and other works that could create adverse visual or physical impacts. Any proposals to restore indigenous woody ecosystems, to approximate the original cover, should not be seen as detrimental to these visual landscape values.

Particular care should be taken to avoid disturbance to important sites identified in the Geopreservation Inventory (Hayward et al. 1999) and significant landscape features identified in regional and district plans (see the Marlborough District Council's Wairau/Awatere Resource Management Plan and the Hurunui District Plan).

Objectives

1. To protect the geological features and landforms of Molesworth.
2. To protect the landscape, open space qualities and high country character of Molesworth.

Policies

1. Plan and construct structures and works, and undertake activities, with the aim of minimising physical disturbances and intrusion on the landscape.
2. Keep fences to a minimum and site them to protect biodiversity and landscape values.

See also Section 2.1 *Natural resources*
 Section 3.2.1 *Natural values*
 Section 4.7.1 *Weed control*
 Section 4.8.4 *Accommodation and facilities for recreational purposes*
 Section 4.9.3 *Electricity transmission lines and associated facilities*
 Section 4.9.4 *Other utilities and energy generation*
 Section 4.9.5 *Mining and gravel extraction*

4.5 Historical and cultural heritage

Outcomes

1. **The historic places, traditions and people of Molesworth are identified and this information is readily available.**
2. **The historical and cultural heritage of Molesworth is protected and shared with the public.**

Molesworth makes a significant contribution to New Zealand's distinctive culture associated with the South Island high country. It contains a rich historical and cultural heritage for all New Zealanders—places of exploration, farming, recreation, natural resource protection, communication, and ongoing spiritual and cultural associations. Such places provide a link between the present and the past, and with the culture of those who came before.

While Molesworth has historical importance to tangata whenua, there is only one Māori archaeological site on Molesworth recorded in the New Zealand Archaeological Association database, a campsite at Lake Tennyson (see Appendix 2). It is highly likely that other archaeological sites relating to Māori use of Molesworth will be discovered in the future. Te Rūnanga o Ngāi Tahu intend to survey Molesworth during the lifetime of this Plan and this may provide new knowledge about Molesworth's values to Ngāi Tahu. In contrast, archaeological sites, artefacts, buildings and other structures remain today from the history of pastoral farming, and the old stock and travelling routes between Nelson/Marlborough and Canterbury. Appendix 2 lists all known historic places on Molesworth and Map 5 locates them geographically.

Molesworth has been recognised as an 'historic icon' by the Department, the Ministry for Culture and Heritage, and the New Zealand Historic Places Trust—one of 20 sites nationwide that

portray and protect the Kiwi identity. The Department's role is to manage the historic resources on the land it administers for conservation purposes. On Molesworth, this role is undertaken in cooperation with the Lessee, which owns most historic buildings, structures and plant as part of its ownership of 'improvements'. These buildings and structures are an integral and very important part of the Station's history and should be managed in concert with the other historic values and historic places on Molesworth. Therefore, a collaborative management approach is required for the management of historical and cultural resources on Molesworth.

It is intended that conservation plans be prepared for historic buildings, including Tarndale Homestead, the present-day Molesworth Homestead, Molesworth Woolshed, and the Waiau Rabbit-proof Fence. These plans will identify the historical and cultural values, and recommend management methods to protect them. As of June 2013, conservation plans have been completed for the Molesworth Cob Cottage (Bowman 1993) and the Acheron Accommodation House (Lucking 1993). Both plans state that the buildings will be maintained to protect their setting and historic fabric, and to minimise deterioration. The preparation of a conservation plan signals the intention to actively manage a site.

Four historic buildings on Molesworth are registered with the Historic Places Trust under the Historic Places Act 1993:

- Acheron Accommodation House (category II)
- Molesworth Cob Cottage (category II): original homestead
- Molesworth Cob Homestead (category II): present homestead
- Molesworth Woolshed (category II).

The Molesworth Cob Cottage currently (2013) sits on road reserve but is managed by the Department as though it were on recreation reserve. It is intended to transfer this small area of road reserve to recreation reserve (see section 4.11: *Land acquisition, exchange and disposal*).

It is intended to propose the Tarndale Homestead (in association with the Lessee) and the Waiau Rabbit-proof Fence for Historic Places Act registration. Other buildings, places and structures may be proposed for registration, where appropriate. It is planned to record all archaeological sites and structures on the New Zealand Archaeological Association database.

The Lessee is required to maintain historic buildings, structures and sites to a standard determined by the relevant conservation plan and to comply with the management recommendations derived from the Molesworth Historic Survey report (Bagley & Jones in prep.). Any proposal to modify or remove a building or structure that is more than 30 years old requires the Lessee to advise the Department with sufficient advance notice to allow the Department to assess its historical significance and, where appropriate, explore options for its protection.

Those buildings that continue to be used as part of the farming operation of Molesworth Station are off-limits to the public (unless otherwise agreed by the Lessee and the Department). The provisions of this Plan should ensure that this heritage is protected for future generations. Other heritage may be visited by the public and some is actively managed by the Department, including (as at June 2013): the Molesworth Cob Cottage, the Acheron Accommodation House, the Lower Acheron Stock Bridge, the NZED Bridge at Pig Trough Gully and Sedgemere Fingerpost. Other places are likely to be added to this list once the initial review of historic resources on Molesworth is completed, as part of the Molesworth Historic Survey report (Bagley & Jones in prep.).

Further protection for the highly significant Waiau Rabbit-proof Fence is intended to be achieved through the preparation of a conservation plan. Parts of the fence are situated on the St James Conservation Area; therefore, a coordinated Molesworth-St James plan is proposed. Other fences, including the old sheep fences, should be retained in situ. Those that predate 1900 are archaeological sites within the definition of the Historic Places Act 1993 and, consequently, protected. Similarly, archaeological remnants of the earlier homesteads, buildings, sheep dips,

campsites, accommodation houses and any other archaeological evidence, are protected by the Reserves Act 1977 and the Historic Places Act 1993 and cannot be disturbed without prior authority of the Department and the New Zealand Historic Places Trust.

Artefacts, including bottles, tins, camping utensils, old farm implements, rabbit ploughs, etc. are also protected from disturbance or removal under the Reserves Act 1977 and must be left in situ. Historic trees, particularly old plantings around old dwelling sites and campsites, should not be removed or poisoned until an evaluation of their historical significance has been made. Examples of historic vegetation on Molesworth are willows, cork elms, poplars, and fruit trees and shrubs (such as gooseberries and currants). Such vegetation acts as cultural markers of old camps and sites of habitation.

With respect to the identification and protection of Māori historic and cultural values, relevant iwi will be consulted. The Department's protocols with Ngāi Tahu acknowledge the importance of their wāhi tapu, wāhi taonga and other places of historic significance. Ngāi Tahu may choose not to disclose, or disclose to a 'silent file' system, the location of wāhi tapu sites, to help protect them and preserve their sacredness.

Molesworth is acknowledged as a significant cultural landscape, comprising physical evidence as well as landforms and places of cultural significance. Official and unofficial place names bestowed by Māori and European explorers, travellers, farmers and scientists are also recognised as an important part of Molesworth's cultural fabric and should be recorded and protected.

Threats to Molesworth's historical and cultural heritage include weeds, visitor impacts, natural processes, and Departmental and Lessee activities—particularly land uses that disturb the ground (e.g. fencing, track building, roading). Many of the key historic values are at the places of greatest present-day activity; however, awareness and a cooperative approach can avoid any conflict between use and historic heritage protection.

Records relating to the farming and land administration of Molesworth are recognised as having potential to further develop the Station's history and shall be cared for, in consultation with the Lessee, potentially via their deposit in the National Archives or the National Library. Similarly, scientific monitoring reports provide a valuable ecological record of New Zealand's South Island high country.

The people of Molesworth are recognised as an important part of the Station's history. Some oral histories have been recorded and this work should continue in order to preserve personal stories and information for posterity.

As much as possible, information about the historical and cultural heritage of Molesworth will be shared with the public in an accessible manner.

Requests to erect monuments, pou whenua, plaques or other memorials shall be considered by the Department where they are associated with people, traditions or events of exceptional importance to, and are consistent with the values of, Molesworth.

An historic/archaeological survey, undertaken in 2007/2008 (Bagley & Jones in prep.), identified the key places of historical and cultural heritage on Molesworth and recommended measures for their future protection and management. While not a complete record, it identified the most obvious values, and will inform future management of these sites and structures.

Further survey work may be undertaken over the life of this Plan to improve understanding of historic values on Molesworth. Monitoring should be established to measure visitor and farming effects on historic places.

Objectives

1. To increase knowledge about Molesworth's historical and cultural heritage, including historic places and historical information, and the threats to this heritage.
2. To protect and manage the historical and cultural heritage of Molesworth.

3. To increase the awareness and connection of New Zealanders to their historical and cultural heritage found on Molesworth.

Policies

1. Carry out an inventory of the historic places and values of Molesworth.
2. Seek to register Tarndale Homestead (in association with the Lessee) and the Waiau Rabbit-proof Fence as 'historic places' under the Historic Places Act 1993, and any other structures or sites that warrant this protection.
3. Actively manage:
 - i. Molesworth Cob Cottage
 - ii. Acheron Accommodation House
 - iii. Sedgemere Fingerpost
 - iv. Any new historic place that may be identified in negotiation with the Lessee.
4. Work with the Lessee to prepare and implement a conservation plan for:
 - i. Tarndale Homestead
 - ii. Present-day Molesworth Homestead
 - iii. Molesworth Woolshed
 - iv. Waiau Rabbit-proof Fence
 - v. Any other historic places assessed as warranting a conservation plan.
5. Work with the Lessee to prepare maintenance plans for all historic huts and structures for which a conservation plan will not be prepared, including:
 - i. Yarra, Half Moon, Red Gate, Team, Old Lake McRae, Acheron and Elliott huts
 - ii. Guide stables
 - iii. The Tarndale cob/iron hut
 - iv. Ancillary buildings identified in the development of the Molesworth Homestead and Tarndale Homestead conservation plans
 - v. Any other sites assessed as warranting a maintenance plan.
6. Recognise the cumulative historic value of historic precincts, such as the Molesworth Homestead precinct, the Molesworth Cob Cottage precinct, the Tarndale precinct, and the Acheron Accommodation House precinct. Any significant removal or modification of the built or archaeological fabric within an historic precinct should be considered in terms of its potential impact on the whole precinct.
7. Identify archaeological sites and other historic places to prevent any damage or disturbance to them. (Note that archaeological sites must not be disturbed unless the necessary statutory requirements have been followed and authority granted.)
8. Prior to modification or removal by the Lessee, assess the historic significance of any structures 30 or more years old to ensure there is an opportunity, if appropriate, to negotiate and plan their recording or retention.
9. Prior to construction of any structures (e.g. fences, buildings, roads) or to work involving significant ground disturbance, assess the impact on historic places and values and seek to avoid or minimise adverse effects.
10. Ensure artefacts relating to past human activity are respected as part of the integral historic fabric of the Station and left wherever possible in situ, and that their location is recorded.
11. Research and record Molesworth place names.
12. Recognise the potential historic value of records relating to the past and present farming operation and scientific monitoring undertaken on Molesworth.
13. Continue the programme of recording oral histories and personal stories about Molesworth.

14. Work with iwi to explore ways to enhance the understanding and appreciation of the cultural landscape and long association of tangata whenua with Molesworth.
15. Consult with iwi on the protection and interpretation of any known wāhi tapu or associated wāhi taonga and effect appropriate protection measures.
16. Provide on-site interpretation to the public about the key, publicly-accessible historic places on Molesworth and information about historic resources generally, including the provision of information in pamphlets and on the Department's website.
17. Provide infrastructure to minimise adverse effects from visitors, as required.
18. Requests to erect monuments, pou whenua, plaques or other memorials may be considered where they are associated with people, traditions or events of exceptional importance on Molesworth and are consistent with its values.
19. Develop and expand monitoring programmes to measure long-term cumulative change in the condition of specific historical and cultural values of Molesworth.

See also Section 2.3 *Historical and cultural heritage*
 Section 3.2.2 *Historical and cultural values*
 Section 3.3.4 *Protection of historical heritage*
 Section 4.1 *Treaty of Waitangi responsibilities*
 Section 4.10.2 *Historical and cultural heritage*
 Appendix 2 *Recorded historic places on Molesworth*

4.6 Farming

Outcomes

1. Farming contributes to the unique values of Molesworth.
2. Sustainable farming practices enhance water and soil conservation.
3. Farming provides the opportunity for an economic return to the Lessee.

Landcorp Farming Limited undertakes farming operations on Molesworth subject to provisions of the lease, the grazing licence and this management plan. The lease requires Landcorp to use and farm Molesworth in a good and husband-like manner and restricts it to cattle grazing. The Lessee is the owner of the livestock and improvements, including most buildings (see section 1.3.3: *Farming lease and grazing licence* for exceptions), the airstrips and any pasture improvements that have arisen from over-sowing and topdressing.

The importance of soil and water conservation on Molesworth reflects the history of Molesworth (land degradation and the subsequent need for rehabilitation) and the Government's commitment to protecting ecosystems services—those benefits derived from natural ecosystems such as water storage and purification. The lease states that the Lessee shall use and manage Molesworth 'so as to promote soil conservation and minimise erosion of the soil' and 'shall not impoverish or waste the soil'. This soil and water conservation goal is pursued primarily through the rotational grazing regime (to minimise grazing pressure on vegetation) and the control of pest and wild animals and weeds. In some places, fertiliser has been used to enhance soil fertility and promote vegetation growth. Emphasis will be placed on soil improvement and pasture maintenance on Molesworth rather than on the development of new areas for grazing.

Significant changes in farm management are neither desirable nor necessary. The current grazing regime has been designed for soil and water conservation, as well as primary production, after a long and intensive programme of land rehabilitation and is achieving that goal. A description of the Molesworth farming operation is given in section 2.4: *Farming*.

4.6.1 Beef production

The lease states that the Lessee may farm up to 60 000 stock units (which corresponds, very approximately, to 12000 head of cattle) or such higher number of stock units as may from time to time be mutually agreed by the Lessor and the Lessee. Within the stocking cap, the number of head of cattle on Molesworth is decided by the Lessee, depending upon the seasonal conditions and farm economics.

The maintenance of improved pasture through the aerial application of fertiliser (topdressing) and seed (over-sowing) may occur on areas specified in the lease (see Map 6) and any other land where agreed by the Department. Topdressing and over-sowing provide two benefits. First, they ensure good stock feed for the critical winter and early spring periods. Second, they increase ground cover, which is beneficial for soil and water conservation.

The lease requires that the Lessee follows the rotational grazing regime that has been developed for Molesworth. This was described in section 2.4: *Farming* and is depicted in Map 7. For more than 65 years this system has proven its ability to ensure the continued presence of native plants and animals alongside cattle grazing over much of Molesworth.

Grazing is excluded from most Areas of High Natural Value, as depicted on Map 8 and discussed in section 4.4.1: *Indigenous species, habitats and ecosystems*. No pasture improvement shall be undertaken in the Areas of High Natural Value.

4.6.2 Apiculture

Apiculture (beekeeping) is an important part of farming as it enhances legume pollination in areas of improved pasture. Bees and people do not generally mix well. This has not been a problem on Molesworth because the beehives have been located in areas away from areas of high public use. It is intended to continue this practice of spatial separation.

Objectives

1. To farm Molesworth for optimum economic return, subject to compatibility with soil and water conservation.
2. To farm Molesworth so as to enhance natural, recreational, historical and cultural values.

Policies

1. Manage Molesworth to enhance soil and water conservation.
2. The rotational cattle grazing regime will continue on Molesworth, as outlined in the lease, with a maximum of 60000 stock units or a higher number if agreed between the Department and the Lessee.
3. The grazing regime may be altered by mutual agreement between the Department and the Lessee, in consultation with the Molesworth Steering Committee.
4. Grazing will only occur in those parts of the Areas of High Natural Value that are so identified on Map 8.
5. Pasture improvement on the areas specified in Map 6 may be undertaken through over-sowing, topdressing and direct drilling, where soil, water and ecological values are not compromised.
6. Consider requests to improve pasture in areas other than those identified on Map 6 on a case-by-case basis. Requests should be declined for Areas of High Natural Value.
7. Allow apiculture on Molesworth, provided the hives are located away from areas of high public use.
8. Maintain a close cooperation with the Lessee, to ensure compatibility with other values.

See also

- Section 1.3.3 *Farming lease and grazing licence*
- Section 1.6.2 *Landcorp Farming Limited*
- Section 2.1 *Natural resources*
- Section 2.4 *Farming*
- Section 2.5 *Biosecurity threats*
- Section 3.1 *Vision for Molesworth*
- Section 3.2.3 *Farming values*
- Section 3.3.5 *Farming*
- Section 4.3 *Cooperative management*
- Section 4.4 *Conservation of natural resources*
- Section 4.5 *Historical and cultural heritage*
- Section 4.7 *Biosecurity and management of threats*
- Section 4.8 *Recreation*
- Section 4.9 *Other uses*

4.7 Biosecurity and management of threats

Outcome

The values of Molesworth are protected from weeds, pest and wild animals, and other threats.

Considerable management effort is directed at managing pest and wild animals, weeds and other threats, such as fire. This is the primary management mechanism for the protection of indigenous species on Molesworth and is critical for a successful farming operation. The control of weeds and pest and wild animals includes managing existing weeds and animals, as well as preventing the introduction of unwanted plants and animals.

The Marlborough and Canterbury Regional Pest Management Strategies cover Molesworth. As a good neighbour, the Department endeavours to meet their requirements, where practicable.

4.7.1 Weed control

A Weed Control Plan (Raal 2012) has been developed for Molesworth, a requirement of the lease. The Plan identifies the following weed control priorities, each of which has an associated set of actions and measures for monitoring, surveillance and performance:

- Phase 1: Control of scattered outliers of wilding conifers and other woody weeds to protect tussock grasslands and other native vegetation types identified as being of high biodiversity, landscape feature, recreational and/or pastoral grazing importance. The objective is the systematic destruction of the outlier woody weed infestations (wilding conifers, rowan, crack willow, gorse, and Scotch broom) in the Leatham Buffer, Dillon McRae, Upper Wairau Crimea Range and Alma Tarndale Areas.
- Phase 2: Implementation of new weed control programmes in scattered to semi-dense infestations of rowans, wilding conifers and other woody weeds. The objective is the destruction of the scattered to semi-dense infestations of wilding conifers, rowan and other woody weeds occurring outside the Maukuratawhai Area.
- Phase 3: Implementation of surveillance search and destroy operations. Once Phases 1 and 2 have been completed, surveillance search and destroy operations should be maintained in the cleared Dillon McRae, Upper Wairau Crimea Range, Alma Tarndale, Saxton Severn and Leatham Buffer Areas in order to keep these areas at zero density for all woody weeds.
- Phase 4: Long-term woody weed control operations. The control of dense infestations of woody weeds in the Maukuratawhai Area should be implemented to the extent possible in the sequence as specified in the Woody Weed Control Operational Plan (Raal 2012).

The lease gives responsibility for weed control to the Department in areas of high indigenous biodiversity, riverbeds and upland areas. The Lessee is responsible for weed control as part of normal farming operations and must make a reasonable contribution towards controlling wildling pines near the fringes of pine plantations. Implementation of the Weed Control Plan is the responsibility of both agencies.

Two other plans guide weed control on Molesworth; one is specifically for wildling conifers (Ledgard 2006) and the other is for the small ephemeral tarn near Sedgemere (Clayton-Greene 2004) (see below). These plans operate in conjunction with the Weed Control Plan, which is reviewed biennially.

The prevention of new weed invasion is a high priority. Seeds can be transported by vehicles and machinery onto Molesworth. For this reason, vehicles and machinery used by the Lessee, contractors and the Department are to be cleaned before arrival on Molesworth. It is not practical to check every recreational vehicle entering Molesworth. The Department and the Lessee should continue surveillance for new weed species and new incursions, so that eradication or control can be implemented.

The lease also states that the Molesworth code of behaviour ('Molesworth Care Code'—see section 4.8.5: *Interpretation*) should include information for the public to help reduce the risk of introduction and spread of weeds.

Work shall be focused upon keeping weeds out of lakes that are currently weed-free (see section 4.4.1: *Indigenous species, habitats and ecosystems*).

Any gravel extracted on Molesworth (see section 4.9.5: *Mining and gravel extraction*) is limited to local use. In particular, gravel extracted in a broom-infested area is not to be used in broom-free areas.

Horse trekkers who bring in their own feed currently have no controls upon their feed supply. This poses a risk of weed seed spreading. See section 4.8.3.2: *Activities—Horse trekking*.

4.7.1.1 Wilding trees (conifers)

The Molesworth wildling tree strategy (Ledgard 2006) recommends immediate removal of wildling trees as a priority action in large areas of Molesworth where scattered outlier wildlings are seeding. Specific areas and methods of control are indicated. Areas identified are: Hossack Corner, Tarndale, Acheron catchment, Severn and Saxton, Leader, Maukuratawhai, and Jacks to Jollies Pass. Small targeted areas, mainly close to buildings, are also given high-priority status.

4.7.1.2 Other woody weeds (including broom, gorse and briar)

These are covered by the Weed Control Plan for Molesworth.

4.7.1.3 Ephemeral tarn near Sedgemere

There is one site-specific project within Molesworth that includes active weed control. A small ephemeral tarn beside the Tophouse Road near Sedgemere contains a number of threatened plant species, one of which is found only in this tarn. Fencing of the tarn resulted in the short-term expansion of the rare plants and was then followed by rapid growth of exotic species such as the grass brown top (*Agrostis capillaris*) and the exotic sedge *Carex ovalis*. Extensive management is being undertaken to control *Carex ovalis* and other invasive species at this site.

4.7.1.4 Didymo

Measures were put in place prior to the discovery of didymo (*Didymosphenia geminata*) in the Clarence and Wairau rivers to minimise the chances of an incursion. These included provision of didymo advocates, Check Clean Dry signage at angler access points and signs asking road users to use the bridges rather than the fords on the Tophouse Road in the Clarence valley.

Since its discovery, facilities have been put in place for cleaning vehicles used on Molesworth, although this does not extend to vehicles driven by visitors. There are also guidelines that are enforced about cleaning contractors' vehicles, including steam cleaning if required.

Objectives

1. To undertake ongoing weed control in order to reduce the adverse impacts of weeds on the farming, nature conservation, recreation and landscape values of Molesworth.
2. To minimise the risk of new weeds arriving and establishing.
3. To undertake weed surveillance and, where possible, eradicate newly established weeds.
4. To increase public awareness of the threats from weeds.
5. Policies
6. Work cooperatively with the Lessee to implement the Weed Control Plan for Molesworth, and review it on a biennial basis.
7. Prohibit any new plantings of exotic trees on Molesworth, with the exception of amenity trees around the homesteads. Any such planting should be confined to species with a low risk of spreading naturally.
8. Take all reasonable biosecurity precautions to prevent the introduction of unwanted plant species. This may necessitate placing conditions on public access.
9. Endeavour to eradicate any new weed species that pose a threat to Molesworth's values as soon as possible, and work closely with the Lessee and relevant agencies to minimise their spread.
10. Seek to comply with the requirements of the Regional Pest Management Strategies regarding weed management.
11. Liaise with neighbouring landowners and regional councils regarding weed management and, where relevant, in the preparation and review of the Weed Control Plan for Molesworth.
12. Consider the use of biological controls on a case-by-case basis, where weed species cannot be effectively and efficiently controlled in other ways.
13. Provide information to the public about ways they can minimise the introduction and spread of weeds.
14. Provide opportunities for the public to be involved in weed control where doing so is an effective control measure and a positive public participation opportunity.

See also Section 2.5 *Biosecurity threats*
 Section 3.3.2 *Control of weeds and pest and wild animals*
 Section 4.2 *Public participation*
 Section 4.4 *Conservation of natural resources*
 Section 4.6 *Farming*

4.7.2 Pest and wild animal control

The lease places responsibility for the control of pest and wild animals that threaten Molesworth's natural heritage (such as goats, deer and pigs) with the Department, while the Lessee is responsible for controlling agricultural pest and wild animals (such as rabbits and tuberculosis vectors—possums and ferrets). The effect of some species on both farming and biodiversity values reinforces the need for, and the benefit from, cooperative pest and wild animal control by the Department and the Lessee.

An Animal Pest Control Plan for Molesworth shall be prepared jointly by the Department and the Lessee. Priority will be given to: controlling animals that are vectors and carriers for bovine tuberculosis (TB); rabbits; and animal pest monitoring.

4.7.2.1 Tuberculosis vector and carrier control

Control programmes aimed at feral vectors (possums and ferrets) and carriers (pigs) of bovine TB, run cooperatively between the Lessee and the Animal Health Board, aim to reduce vector/carrier numbers and eradicate TB from the cattle herd. It is a priority pest and wild animal control activity for Molesworth with a strong research focus.

4.7.2.2 Rabbits

The introduction of rabbit calicivirus disease (RCD) in the 1990s, combined with ongoing shooting, has kept rabbit numbers to an acceptable level over the past decade. To maintain this level, professional and recreational rabbit shooting, and poisoning programmes, are used. It is intended to continue these activities.

4.7.2.3 Canada geese

The Department, as landowner, is responsible for the control of Canada geese on Molesworth, as these are no longer classified as a game bird. Prior to 2011, Canada geese control was the responsibility of Fish and Game New Zealand and subject to the South Island Canada Goose Management Plan. Goose numbers were managed through organised goose shoots held three times a year which provided a controlled recreational experience. Initially established by Fish and Game New Zealand, the Department intends to continue these organised hunts because of the benefits they provide for agricultural pest control and recreation.

4.7.2.4 Other pest and wild animals

Goats are culled by specific aerial goat hunts or when encountered on farming operations by the Lessee. The Department controls goat populations on adjacent public conservation lands to reduce the risk of re-invasion back onto Molesworth. Parts of Molesworth are goat-free and priority should be given to ensuring this continues.

Pigs are controlled by the Lessee.

Other pest and wild animals are present but not under active management and their impact on Molesworth's values remains unknown. They include hares, cats, chamois, red deer, rats, mice and hedgehogs.

Recreational and commercial hunting can play a part in controlling pest and wild animals and should be encouraged where it fits with farming objectives and the needs of other recreationists (see section 4.8.3.2: *Recreational hunting* and section 4.9.1: *Recreation and tourism concessions*).

Commercial wild animal control operations should not be authorised (via a permit) on Molesworth unless the Department identifies a need for them as part of a pest and wild animal control operation.

Objectives

1. To undertake ongoing control of pest and wild animals in order to reduce their adverse impacts on the farming, conservation, recreation and landscape values of Molesworth.
2. To minimise the risk of new pest and wild animals arriving and establishing.
3. To undertake pest and wild animal surveillance and, where possible, eradicate newly established pest and wild animals.
4. To increase public awareness of the threats from pest and wild animals.

Policies

1. An Animal Pest Control Plan will be prepared, in conjunction with the Lessee.
2. All reasonable measures will be taken to control pest and wild animals that are a threat to biodiversity and pastoral values and to implement the Animal Pest Control Plan.

3. Work cooperatively with the Lessee to implement the Molesworth Animal Pest Control Plan (once prepared), and liaise with relevant councils and neighbouring properties to control pest and wild animals.
4. Seek to prevent the introduction of pest and wild animals into areas where they are not already present, with the exception of authorised liberations of pest and wild animals (such as Judas goats and pigs) or for scientific purposes.
5. Endeavour to eradicate any illegal or accidental introductions of new pest or wild animals that pose a threat to Molesworth's values as soon as possible, and work closely with the Lessee and relevant agencies to minimise their spread.
6. Seek to comply with the requirements of the Regional Pest Management Strategies regarding animal pest management.
7. Encourage pest and wild animal control research programmes on Molesworth where these are likely to have national benefits.
8. Provide for recreational hunting where the activity does not adversely affect the farming operation, other recreational users or biodiversity objectives.
9. Do not issue any permits for commercial wild animal control operations on Molesworth unless the Department identifies a need for them as part of a pest or wild animal control operation.

See also

- Section 2.5 *Biosecurity threats*
- Section 3.3.2 *Control of weeds and pest and wild animals*
- Section 4.4 *Conservation of natural resources*
- Section 4.6 *Farming*
- Section 4.8.3 *Activities—Recreational hunting*

4.7.3 Fire management

It is not intended to use fire as a land management tool. The lease states that the Lessee is not to burn, or permit to be burnt, any native tree, bush, tussock, scrub, fern or grass without the prior consent of the Department, and then only in accordance with this management plan.

Members of the public are not allowed to light open fires anywhere on Molesworth; however, portable cookers can be used. One exception exists: the Clarence River campsite known as Big Eddy, used by rafters and kayakers. A fire permit is required to light an open fire at this campsite. Information about the open fire restriction is provided via the Molesworth Care Code (see section 4.8.5: *Interpretation*) and signage. The Department proposes a bylaw that would prohibit open fires, except at the Big Eddy campsite, where a permit shall be required.

Restrictions on public access may occur at times of high fire risk because the presence of people increases the risk of fire, and presents an issue of public safety should a fire break out. Molesworth is much hotter and drier than other parts of the South Island high country, and its remoteness increases the response time for fire fighting assistance. To date, public access restrictions have been limited to the Acheron Road (as explained in section 2.5: *Biosecurity threats*). The public will be advised of road closure through notices on the Department's website, in newspapers, visitor centres, radio stations and road signs in Hanmer Springs (at the south end of roads to Jacks and Jollies passes) and on SH1 near Seddon to alert the travelling public. Activity permits may be granted during periods of high fire risk where recreationists meet the criteria set out in section 4.8.3.1: *Public Access zones—Acheron Road*.

The Marlborough Kaikoura Rural Fire Authority is responsible for fire control on that part of Molesworth that falls within Marlborough and Kaikoura Districts. The Department is a party to this Authority, and is responsible for fire control for the remainder of Molesworth.

Objectives

1. To minimise the risk of fire.
2. To actively manage fires on Molesworth where the public or the values of Molesworth need protecting.

Policies

1. Prohibit the use of fire as a land management tool.
2. Seek a bylaw that would prohibit open fires by the public anywhere on Molesworth, with the exception of the Big Eddy campsite on the Clarence River, where a permit will be required to light an open fire.
3. In cooperation with the Lessee, public access to any or all parts of Molesworth may be closed at times of high fire risk. Widespread advertisement of any closures should take place.
4. Seek a bylaw that would restrict public access to Molesworth during times of high fire risk.

See also Section 2.5 *Biosecurity threats*
Section 4.8.3 *Public access*

4.8 Recreation

Outcomes

1. **Visitors experience Molesworth as a high country station and as a remote area of wide open spaces that invites backcountry adventure.**
2. **Recreation opportunities on Molesworth continue to be enhanced.**

4.8.1 Introduction

In 2003–05, the Government stated its intention to enhance recreation on Molesworth in a gradual manner. This section outlines provisions to do so, including a commitment to ongoing improvement to public access and recreation on Molesworth during the lifetime of this management plan. See section 2.6: *Recreation and public access* for a description of the recreational use of Molesworth and the public access enhancements that have occurred on Molesworth since it became a recreation reserve in 2005.

Given the Government's intentions for Molesworth to continue as a viable farming operation, this section also identifies restrictions on public access so that farming requirements may be met. Public access provisions are based on the rationale that some farming operations and recreational use do not always mix well, especially in such a harsh climatic environment. Most of the public access restrictions described in section 4.8: *Recreation* are derived from either fire or public safety concerns or the lease.

Recreational activity may also require management to protect conservation goals for natural, historical and cultural resources, and the recreational experiences of other users.

Given the public's interest in greater public access and more recreation opportunities on Molesworth than are currently provided for by this Plan, the public will be consulted about future plans for Molesworth by 2017 (prior to expiry of the farming lease). This is discussed in section 5.1: *Management plan implementation, amendment and review*.

4.8.2 Recreation opportunity settings

Molesworth provides the opportunity for two types of recreation experience: 'access to a high country station in a unique landscape' and 'exploration and adventure'. These opportunities can be described in terms of the activities undertaken, the types of environment (settings) required

and the experiences sought (see Table 1). Through activity regulation and setting provision, including the type and number of facilities, management influences whether recreationists attain their desired recreational experience.

For many people, Molesworth is seen from their car window; their visit punctuated with short stops and/or camping. For others, their Molesworth experience runs deeper—days spent roaming the wide open landscape or rafting and/or kayaking the Clarence River (a multi-day journey which begins in Molesworth). Yet others are drawn to Molesworth to experience nature or for an event (such as a mountain bike ride) that allows them to combine social interests with a chance to experience ‘Molesworth country’.

Table 1. Recreation opportunities on Molesworth

RECREATION OPPORTUNITY	OPPORTUNITY DESCRIPTION	ACTIVITIES	SETTING	EXPERIENCE	RECREATION OPPORTUNITY CLASS ¹
Access to a high country station in a unique landscape	The opportunity to drive through Molesworth, learn about its values and enjoy associated activities	Scenic driving and cycling on formed roads, short walks, picnics, camping	Unsealed 2WD and 4WD road corridors, short walking tracks, camp sites and basic related facilities, interpretation, uncluttered landscape, historical sites	Scenery appreciation, feeling of being in remote country, learning about the high country, experiencing nature, connection with the past, sharing with family/friends	Backcountry
Exploration and adventure	The opportunity to seek adventure and explore by way of activities that match the remote and challenging nature of the terrain	Tramping, fishing, hunting, cycling, horse trekking, kayaking, rafting, 4WD driving, backcountry flying	Unformed routes, few facilities, uncluttered landscape	Sense of remoteness and adventure, solitude, connection with nature, association with the past, camaraderie within own group, self-reliance	Remote

¹ Terminology from the Recreation Opportunity Spectrum, which is used by the Department to classify areas by the type of recreation experience they facilitate (see DOC 1996: Visitor Strategy).

4.8.2.1 *Access to a South Island high country station in a unique landscape*

Anyone comfortable with travelling on a remote unsealed road has the opportunity to visit a high country station and experience the wide open spaces of Molesworth. Visitors enjoy Molesworth through the view from their car window and satisfy their interest to experience a working high country station. The ‘environment’ that they seek is a remote landscape of tussock grasslands, wild rivers and mountains, as well as grazing cattle, farm structures (including gates that must be opened and closed) and learning about station life and the history of farming on Molesworth. This experience is compatible with other vehicles and users, although the presence of too many people may detract from the sense of remoteness and ‘being away from it all’.

The wide open spaces of Molesworth are uncluttered and inspire a sense of vast grandeur. Facilities are low-key and provided only where necessary to protect the environment or to enhance visitors’ experiences.

The Acheron Road is central to visitors’ enjoyment—the challenge of driving an unsealed high country road is part of their experience. Cyclists and horse riders also appreciate the ease of access offered by the Acheron and Tophouse roads. Some people enjoy this experience in

organised groups or as event participants. The Acheron Road is maintained to a 2WD standard for the road open season and remains an unsealed high country road.

The stories of Molesworth are told in an engaging manner, enriching New Zealanders' sense of place and their understanding of the values of the South Island high country, and of Molesworth in particular. Since many road-based visitors do not frequent backcountry environments, the Molesworth Care Code provides an educative tool.

Many visitors camp (vehicle-supported camping) at designated sites and enjoy the experience of camping in a 'remote' location.

4.8.2.2 Exploration and adventure

Molesworth's 'backcountry' (areas more than 1.5 km from road access) and the recreation activities that depend upon this type of landscape provide the opportunity for visitors to experience a sense of exploration and adventure. The Molesworth backcountry remains the preserve of adventurous trampers, hunters, anglers, horse trekkers and cyclists.

Users of the Molesworth backcountry are self-reliant and have good backcountry skills. They camp or use the huts provided. Group sizes vary, with the Clarence River corridor attracting large rafting parties. Away from the Clarence River corridor, few other parties are encountered.

Motorised vehicles remain on the formed roads, with some exceptions, notably organised events. Recreational pilots land on designated Molesworth airstrips as part of their backcountry flying experience.

Signs of human activity (other than farming) are few and a sense of history pervades the experience, visible through historic buildings, tracks and routes, fences, and other structures and artefacts. Visitors explore and learn about the historical landscape that is 'Molesworth country'.

Visitors experience and appreciate the geological and biological diversity of Molesworth. The high level of endemism is especially valued.

Accessibility is part of Molesworth's appeal. The two formed but unsealed roads provide easy access into remote country. But once off the road, recreationists experience Molesworth on nature's terms and exercise responsibility for their own welfare.

Managers respond to adverse effects from increasing backcountry use by managing visitor numbers or patterns of use, in the first instance. The expansion of facilities or 'hardening' of sites (such as paving parking areas) is the second choice in dealing with visitor pressures, as it is recognised that this alters the nature of the recreational experience. 'Incremental creep' in the standard of facilities (whereby the facility grade increases slowly over time) is resisted and low-key facilities, notably huts and bridges, facilitate backcountry recreation.

The opportunity for 'exploration and adventure' is enhanced by the location of Molesworth within the unbroken continuum of public conservation land from the West Coast to the East Coast. This corridor attracts experienced recreationists who travel by foot, horse and mountain bike. Opportunities for trips inter-connecting Molesworth, St James Conservation Area and Ka Whata Tu o Rakihouia Conservation Park have increased.

Objective

1. To provide visitors with the opportunity to experience a high country station, and a remote area of wide open spaces which invite backcountry adventure.

Policies

See policies in sections 4.8.3-4.8.7

See also Section 2.6 *Recreation and public access*

Section 3.2.4 *Recreation values*

Section 3.3.1 *Public access for recreation*

4.8.3 Public access

Public access to Molesworth is managed so that it can co-exist with farming operations, to manage fire risk and to ensure public safety.

Ways to further increase public access, and therefore enhance recreation, were under discussion at the time this management plan was approved. This included new routes that offer more practical accessways than some of the unformed legal roads that cross Molesworth; for example, routes for motorised and non-motorised users between the Tophouse Road (at Sedgemere) and the Acheron Road (near the Severn River). Any change to public access provisions that relate to the lease require agreement from the Department and the Lessee. In this consultative manner, the access provisions set out in this section will be extended during the lifetime of this management plan.

Access is available to the public ‘as of right’ within certain zones during specified periods of the year. This is called ‘open access’ in this Plan and is explained in section 4.8.3.1: *Public access zones*.

Outside these specified zones and time periods, a written permit (‘activity permit’) is required from the Department, in accordance with the lease (clauses 31.7 and 31.8). These permits also require the consent of the Lessee, which is not to be unreasonably withheld and, if withheld, it must be for reasons relating to farming operations. Farming activities that may justify access consent being withheld are:

- Mustering (including droving and redistribution of stock)
- Calving
- Pest and wild animal control (including poison operations and the organised goose shoots; see section 4.8.3.3: *Other access provisions—Goose shoots*).

The presence of grazing cattle is not a reason for which consent may be withheld.

Because of the rotational grazing regime on Molesworth, cattle are moved frequently (mustered). The sheer size of Molesworth and its relative lack of fences increase the chance of herds becoming widely dispersed if they are disturbed during mustering.

The activity permit application process has three steps:

1. A member of the public applies to the Department for a permit, outlining their proposed date, route or location, and activity.
2. The Department considers whether the proposed activity conflicts with the protection of Molesworth’s natural and historical/cultural values, or with other recreational users, and consults the Lessee to obtain their consent, based on whether the proposed recreational activity conflicts with any farming operations (mustering, calving, or pest and wild animal control operations).
3. If no conflict is identified, the Department issues the activity permit. The permit confirms the date, route or location, and activity, as well as any conditions (e.g. arrangements for gate key pick up, time constraints if mustering the same day in that area). If there is a conflict, then the Department advises the member of the public of the reasons for declining their request and suggests alternative dates wherever possible, having agreed these alternatives with the Lessee.

Ways to improve administration of this process will be kept under review during the lifetime of this Plan.

Public access to any part of Molesworth (at any time) is subject to closure for reasons associated with the protection and well being of Molesworth and the protection and control of the public. This includes reasons associated with public safety, emergency, extreme weather conditions, conservation management and fire risk (see section 4.7.3: *Fire management*).

Given Molesworth has recreation reserve status, charging for access is not appropriate. Use of the road will continue to be free of charge. Charges may be made for the use of facilities and services (see section 4.8.4: *Accommodation and facilities for recreational purposes*).

Statutory agencies/organisations and state-owned enterprises (e.g. local government agencies, Fish and Game councils, Transpower New Zealand) can access Molesworth to undertake their management functions as required. Liaison between the Department and the agency/organisation will minimise, or avoid, potential impacts on the values of Molesworth or other management activities.

4.8.3.1 Public access zones

Public access zones and routes are described in the lease. They are presented in Table 2 (see next page), which should be read in conjunction with Map 3, and described in more detail in the following subsections of 4.8.3: *Public access zones*, *Activities* and *Other access provisions*. These zones and routes encompass all forms of access except by aircraft (see section 4.9.2: *Aircraft*) and, unless specified, motorised vehicle (see also section 4.8.3.2: *Activities—Use of motorised vehicles (including motorcycles)*). Aircraft landings require a concession and motorised vehicle use requires special conditions; therefore, these activities are discussed separately.

The seasonal public access zones (North and East zones) provide greater access to areas than that enjoyed by the public prior to 2005. The open periods for these zones are determined by the lease and reflect farming operational requirements.

Areas and time periods for open access may be extended, upon agreement between the Department and the Lessee in accordance with clause 31.10 of the lease. Temporary suspension of public access is also provided for by the lease, upon agreement between the Department and the Lessee.

As at June 2013, three changes in the public access provisions of the lease had been agreed:

1. That the Acheron Road open period be altered from 28 December – 30 April (as stated in the lease) to Labour Weekend Saturday – Easter Monday or the second Sunday in April (whichever is the later date), in order to give the public access in the spring, including for early season fishing, and to allow for autumn mustering. This change is effective immediately.
2. That the Acheron Road be closed during the remainder of the year, primarily for reasons of public safety associated with winter road conditions. Activity permits may be granted during the autumn and spring months of this period, specifically to non-motorised users and to motorised users in organised groups and events. This change is effective immediately (see *Acheron Road* below).
3. That the western boundary of the East zone be extended to include the Dillon catchment and a new access route be marked from the Acheron Road into this zone for foot, cycle and horse access via the lower Guide and Half Moon saddle. Because delineation of the new boundary was still under discussion at the time this management plan was approved, this change will become effective after this Plan comes into effect. For this reason, this management plan shows the East zone boundary as depicted in the lease rather than the extended zone.

Future public access changes may include the identification of routes for walking, cycling, horse trekking and 4WD driving.

Some specific places on Molesworth have particular access requirements. These are explained in the following text.

Table 2. Public access.

AREA	PUBLIC ACCESS	KEY ACTIVITIES
PUBLIC ACCESS ZONES		
WEST ZONE	Open access year round Walking access only to Sedgemere Tarns	Scenic driving Walking/tramping Cycling Horse trekking ¹ Hunting ^{2, 6} Fishing ³ Rafting Kayaking
NORTH ZONE	Open access 1 May to 31 December Access by permit at other times of year	Tramping Cycling Horse trekking ¹ Hunting ²
EAST ZONE	Open access 1 November to 30 April (NB: to access this zone, a permit to cross the Central Zone is required unless access is gained from the Clarence River or along the East–West Route) Access by permit at other times of year	Tramping Cycling Horse trekking ¹ Hunting ² Fishing ³ Rafting Kayaking
CENTRAL ZONE	Access by permit at any time of year	Walking/tramping Cycling Horse trekking ¹ Hunting ² Fishing ³ Rafting Kayaking
THE ACHERON ROAD AND TRACKS ACCESSED FROM IT		
ACHERON ROAD (From the Molesworth Cob Cottage to the Clarence River)	Open access Labour weekend to Easter Monday or the second Sunday in April, whichever is the later date ⁴ , during daylight hours ⁵ Closed the remainder of the year (access by permit)	Scenic driving Walking Cycling Horse trekking ¹
WALKING TRACKS ACCESSED FROM THE ACHERON ROAD (Primarily provided for foot access but also may be used by cyclists and horse-riders)	Same as the Acheron Road	Walking Cycling Horse trekking ¹
MULTI-DAY ROUTES		
EAST–WEST ROUTE (Primarily provided for foot access but also may be used by cyclists and horse-riders)	Open access year round	Tramping Cycling Horse trekking ¹
LANDS ADJOINING WATER BODIES		
LANDS ADJOINING WATER BODIES (20 m strip either side of rivers and around lakes as marked on Map 2)	Open access year round	Walking/tramping Cycling Horse trekking ¹ Hunting ² Fishing ³

¹ Taking horses onto Molesworth requires an activity permit at any time of year.

² Carrying a firearm on Molesworth requires a hunting permit from the Department.

³ Fishing requires a fishing licence from Fish and Game New Zealand. Fishing season is October–April except on the Clarence River downstream from the Acheron confluence, which is open year round.

⁴ The lease states 28 December to 30 April: changed by agreement between the Department and the Lessee.

⁵ The lease states 'except during the hours of darkness': interpreted to mean entry between 7 am and 7 pm.

⁶ The lease allows for hunting in this zone except during the calving season. However, the Lessee will endeavour to accommodate hunting elsewhere during the calving season if requested.

STATION OPERATIONAL AREAS

Access is not permitted to station operational areas (marked as yellow squares on Map 3). These five areas are required for critical farming operational activities, and include accommodation buildings, yards and holding paddocks at Molesworth Homestead, Red Gate, Tarndale, Bush Gully and the Guide. Public exclusion is justified for public safety, operational security and staff privacy reasons.

LANDS ADJOINING WATER BODIES

Since the lease does not cover those lands adjoining water bodies shown on Map 2, these areas have open access year round. They are subject to all of the policies presented elsewhere in this management plan, including the Department's ability to restrict public access to them for reasons associated with public safety, emergency, extreme weather conditions, conservation management, or fire risk (see section 4.7.3: *Fire management*). The public will be advised of access restrictions through the Department's website and other means, as appropriate.

ACHERON ROAD

The Department manages public access to the Acheron Road (in liaison with the local authorities and New Zealand Police) to ensure the farming operation may co-exist with recreational use and for fire risk and public safety reasons. The Department controls access to the Acheron Road by managing public access on those sections of the Recreation Reserve that act as the southern and northern entrances to the legal road (see section 1.3.2: *Legal designation*).

The lease states that the Acheron Road shall be open to the public from 28 December in any given year to 30 April in the following year, except during the hours of darkness or when temporarily closed by agreement between the Department and the Lessee. As noted earlier in this section, two changes to these provisions have been agreed: a longer road open period (from the Saturday of Labour Weekend to Easter Monday or the second Sunday in April, whichever is the later date); and a road closure period (remainder of the year).

The two-month spring extension of the road open period has been accommodated through changes made by the Lessee to the pattern of stock movements. From time to time, it may be necessary to temporarily halt vehicles while stock are moved during the period between Labour Weekend and 28 December. The earlier road closure (mid April rather than 30 April) allows for autumn mustering.

The Acheron Road (between the Molesworth Cob Cottage and the Acheron Accommodation House) has two types of use period:

- Road open (no permit required): late October – mid April
- Road closed: mid April–late October.

The road closure period applies for reasons of public safety and to prevent road damage from motorised vehicles. In winter, the road may be used in exceptional circumstances only (activity permit required). During the autumn and spring months of this period, activity permit applications will be granted wherever possible to non-motorised users so they may enjoy the road journey in the absence of motorised traffic; for motorised users, preference will be given to organised groups and events.

During the 'road open' period, use is restricted to daylight hours. This has been interpreted to mean the public may enter onto Molesworth between 7 am and 7 pm but need to be off the road by 9 pm.

Because of the unimproved nature of the Acheron Road, especially its tight bends and steep sections, it is intended that use by vehicles over 7 m in length (including campervans, buses and vehicles with trailers) will require special authorisation from the Department. Similarly, it is proposed that permission must be sought from the Department to tow a trailer on the road.

Before Molesworth became a recreation reserve, a toll was administered on the Acheron Road. Given the change in legal status to recreation reserve, a toll is no longer appropriate. Use of the road will continue to be free of charge (no toll).

Road access may be closed for reasons of high fire risk or natural hazards. See section 4.7.3: *Fire management* and 4.8.6: *Hazards to people*. When the Acheron Road is closed to the public during periods of high fire risk, any member of the public, or a concessionaire, may apply to use the road, provided they intend to carry the following insurance and fire-fighting equipment: Forest and Rural Fires Act 1977 insurance for an amount no less than \$250,000, a 2.5-kg dry powder or CO₂ (carbon dioxide) fire extinguisher, a shovel and a satellite phone (for communication). Application for access during periods of high fire risk will be by way of an activity permit (for a member of the public) or a concession (for a concessionaire).

SEDGEMERE TARNs

Public access to the Sedgemere tarns is restricted to walking access to protect natural values (described in section 2.1: *Natural values*). The Department proposes a bylaw for this purpose, and signage will be erected.

4.8.3.2 Activities

Activities that may be pursued ‘as of right’ (open access) or by way of an activity permit are described in Table 2. Requirements specific to particular activities are outlined next.

TRAMPING AND WALKING

Table 2 presents trampers’ access opportunities.

Much of Molesworth is suitable tramping country and the activity is compatible, most of the time, with farming and other goals.

CYCLING

Table 2 presents cyclists’ access opportunities.

The farm tracks on Molesworth within the open public access zones are available for cyclists’ use and offer opportunities for more adventurous and experienced cyclists.

While cyclists require a permit to travel the Acheron Road outside the open period, it is recognised that minimising encounters with motorised vehicles (and the dust that they cause) enhances cycling, and permit applications will be granted wherever possible (the criteria outlined in section 4.8.3: *Public access* will still apply).

Cyclists are encouraged to follow the Mountain Bikers’ Code of behaviour.

HORSE TREKKING

Table 2 presents access opportunities for horse-riders. Molesworth is good horse trekking country; however, there is a risk that the holding paddocks required for the Station’s working horses may be ‘grazed out’ and that weed seeds previously ingested by horses may be spread. In addition, riders could benefit from the station manager’s advice about routes away from roads, as well as suitable places for feeding and watering their horses.

For these reasons, an activity permit is required to take horses onto Molesworth at any time, including the lands adjoining water bodies. This requirement is not intended to restrict horse trekking, but to manage its effects and enhance the trekkers’ experience.

FISHING

Table 2 presents anglers’ access opportunities.

The extension of the Acheron Road open period is partly in response to interest from anglers for spring fishing in the Acheron, Severn and Alma rivers. Anglers consider that these rivers have

better fishing earlier in the season. From 2013 onwards, the Acheron Road will open at Labour Weekend (end of October) (see section 4.8.3.1: *Public access zones*).

Foot access is available to anglers at all times on the lands adjoining water bodies shown on Map 2. There is no aircraft access on Molesworth for the purposes of dropping off anglers in remote locations (see section 4.9.2: *Aircraft*).

All fishing on Molesworth requires a licence from Fish and Game New Zealand and must take place within the fishing season, which is 1 October – 30 April, except for the Clarence River downstream from the Acheron confluence, which is open year round.

RECREATIONAL HUNTING

Table 2 presents hunters' access opportunities. A hunting permit is required to carry a firearm on Molesworth, issued by the Department in consultation with the Lessee.

Dogs may be permitted for hunting purposes. A dog permit, issued by the Department, is required to take dogs onto Molesworth (see section 4.8.7: *Domestic animals (including pets)*). No spotlighting is allowed, with an exception for controlled Canada goose hunts, as this has the potential to disturb stock and could present a safety issue for visitors. There is no aircraft access for the purposes of dropping off hunters in remote locations (see section 4.9.2: *Aircraft*).

Hunters assist in protecting conservation and farming values by removing pest and wild animals. Access may be declined to protect the outcomes of pest and wild animal control and animal health programmes and because of farm activities (mustering, calving). The primary consideration for hunting will remain control of the harmful effects of pest and wild animals, not management of introduced species for their recreational values.

See also section 4.8.3.3: *Other access provisions—Goose shoots*.

USE OF MOTORISED VEHICLES (INCLUDING MOTORCYCLES)

Most 'scenic drivers' will be accommodated by the access provisions in Table 2. Motorised vehicles may be driven on the formed but unsealed Tophouse Road in the Clarence valley throughout the year. The Acheron Road is open from Labour Weekend until Easter (or mid April if Easter falls earlier); it is closed at other times of year, although activity permits may be granted with preference given to organised groups and events (see Table 2 for dates). The legal basis for the Department's management of the Acheron Road is explained in section 1.3.2: *Legal designation*.

With growing numbers of 4WD vehicles, there is increasing demand to use them for recreational purposes on farm tracks and cross-country. However, adverse effects upon the environment and other users suggest some limits would be appropriate, and controlled vehicle access (organised events) can minimise adverse effects. Therefore, use of motorised vehicles on farm tracks may be allowed on Molesworth (authorised via the activity permit system) with preference given to organised events such as club trips or events (e.g. Hanmer Lions' fund-raising trips). An activity permit will be required (and a concession where relevant) and visitors will be requested to follow the 'Tread Lightly' code of behaviour. Consideration will be given to access opportunities for 4WD vehicles within the lifetime of this Plan. Recreational vehicles shall not be allowed off farm tracks and formed roads (i.e. cross-country).

An issue associated with vehicle use on Molesworth is the possibility that vehicles may need rescue. Visitors to Molesworth are responsible for their own safety (see section 4.8.6: *Hazards to people*) and it is not the responsibility of the Lessee to rescue people.

USE OF AIRCRAFT FOR RECREATIONAL PURPOSES

Fixed-wing aircraft may land on Molesworth where doing so is an integral part of the activity of backcountry flying. Aircraft cannot be used to drop recreationists into remote locations. A concession is required to land on Molesworth. See section 4.9.2: *Aircraft*.

FUTURE NEW ACTIVITIES

Sometimes a new recreational activity may appear to be consistent with the objectives and policies of this Plan, but its potential adverse effects may not be known until some time after it has commenced. In these situations, a precautionary approach to the management of that activity may be required. To assist in identifying the impacts of new activities, a monitoring programme may be required. If the adverse effects are found to be unacceptable and cannot be avoided, remedied or mitigated, then the Department can implement the provisions of the Reserves Act 1977 to control or prohibit the activity.

4.8.3.3 Other access provisions

Specific access provisions relate to concessionaires, educational visits, pest and wild animal control operations and access information. These are discussed next.

CONCESSIONAIRE ACCESS

Rights of access for recreation and/or tourism concessionaires and their clients are specified in individual concessions. These rights are the same as those available to the public.

The mechanism for access permission outside open periods is via the concession (rather than an activity permit), but both forms of permit operate in a similar manner. A concession does not guarantee access to Molesworth, as the concessionaires must check that their proposed visit does not conflict with farming operations (in the same manner the activity permit system works for the public). The same criteria for access permission will be applied for the public and concessionaires; that is, that a proposed activity does not conflict with the protection of Molesworth's natural and historical/cultural values, other recreational users, or farming operations (mustering, calving, or pest and wild animal control operations), and that access to the area has not been restricted.

See also: Section 4.9.1: *Recreation and tourism concessions*.

EDUCATIONAL VISITS

Visits from educational and special interest groups (e.g. schools, farming groups) occur from time to time and will be encouraged. However, they will be subject to the same access restrictions as apply to other users.

GOOSE SHOOTS

Three times a year, an organised cull of Canada geese on Molesworth has been undertaken by recreational game bird hunters (see section 4.7.2: *Pest and wild animal control*). While the management of Canada geese was previously the responsibility of Fish and Game New Zealand, this has now transferred to the Department, which intends to continue the tradition of organised culls, in liaison with the Lessee. Because of the nature of the activity and the associated risks to public safety, other recreationists have not been granted an activity permit during the weekends of the organised hunts, which have included public holiday weekends. The demand for access by other recreationists on these weekends is recognised by the Department. Wherever possible, access for other recreational activities shall be given.

ACCESS INFORMATION

The access provisions outlined in this Plan need to be widely disseminated, to ensure people are aware of their access rights, including reasons why access may be restricted. The Molesworth Care Code will be advocated to visitors (see section 4.8.5: *Interpretation*). It provides information about ways to care for the Molesworth environment and how to behave on a working high country station.

4.8.3.4 *Research, survey and monitoring*

Use statistics should be collated annually. Users may be monitored using road counters, track counters, camping area registrations, hut book records, activity permits (applications recorded by activity, zone and date; record of approvals and refusals with reasons) and concessionaire returns.

Generally, little is known about recreational users and their experiences on Molesworth. Three surveys of road users have been undertaken by the Department (Cox 1989; Parr 2006; Galvin et al. 2010). To provide data about visitors and their motivations, expectations, preferences and satisfactions, a visitor survey should be undertaken regularly. All types of visitor should be included (road users, backcountry users, concessionaire clients, event participants, etc.).

The effects of recreationists upon Molesworth values, including on other recreationists, have not been studied. Monitoring should be established to measure recreational effects on relevant aspects of Molesworth's values.

Objective

1. To enhance public access and use of Molesworth.

Policies

1. Provide open public access within the zones and for the periods specified in Table 2 and Maps 2 and 3.
2. Provide the opportunity for public access outside the open periods, by way of an activity permit system.
3. When processing an activity permit, the Department will seek the Lessee's consent, which may not be unreasonably withheld and any refusals must relate to farming operations (defined as mustering, calving, or pest and wild animal control). Where permits are not approved, reasons should be given and alternative dates suggested wherever possible.
4. Restrict public access to any part of Molesworth (at any time) when required in order to protect Molesworth's natural, historical and cultural, recreational and farming values, or for reasons of public safety. Note that public access can only be restricted on the lands adjoining water bodies for reasons of public safety, emergency, extreme weather conditions, fire risk or conservation management.
5. Continue to enhance public access to Molesworth during the lifetime of this Plan in consultation with the Lessee, the Molesworth Steering Committee and, when appropriate, the public. This includes the provision of accessways as practical alternatives to some inaccessible unformed legal roads.
6. Widely disseminate information about the public's access rights and responsibilities on Molesworth.
7. Restrict public access to the Sedgemere tarns to foot access in order to protect the tarns' natural values.
8. Promote non-motorised recreational activities on Molesworth, subject to the public access provisions identified in Table 2 and Map 3.
9. Manage motorised recreational activities off the two formed roads through the activity permit system (for non-commercial trips), with preference given to organised group trips and events.
10. Manage horse trekking through the activity permit system.
11. Prohibit the use of spotlights for hunting, except for organised events authorised by the Department.
12. Prohibit any vehicle towing a trailer from using the Acheron Road, except where written permission has been given by the Department.
13. Prohibit any vehicle over 7 m in length from using the Acheron Road, except where written permission has been given by the Department.

14. Develop and expand visitor monitoring programmes to measure user numbers, characteristics and experiences, and effects, including long-term cumulative change, on the values of Molesworth.
15. Seek bylaws to support the implementation of policies 1, 4, 7, 9, 10, 11, 12 and 13 above.

See also

- Section 1.3.2 *Legal designation*
- Section 2.6 *Recreation and public access*
- Section 3.2.4 *Recreation values*
- Section 3.3.1 *Public access for recreation*
- Section 4.4 *Conservation of natural resources*
- Section 4.5 *Historical and cultural heritage*
- Section 4.7.3 *Fire management*
- Section 4.8 *Recreation*
- Section 4.9.1 *Recreation and tourism concessions*
- Section 4.9.2 *Aircraft*
- Section 4.10.3 *Recreation*

4.8.4 **Accommodation and facilities for recreational purposes**

The Department manages facilities for visitors on Molesworth. Facilities provided include roads, tracks and routes, camping areas, huts, toilets, signs and bridges. The Department's Recreation Assets Plan (Boffa Miskell Limited 2009) provides detailed descriptions of all Departmental assets and their proposed management. See Map 3 and Appendix 5 for a listing of all recreation facilities on Molesworth (as at June 2013).

The commercial use of recreational facilities is permitted where authorised by a concession (see section 4.9.1: *Recreation and tourism concessions*).

An underlying principle for visitor facilities on Molesworth is the intention to keep facilities to a minimum and of a basic standard. However, different facilities are required for the road corridors compared with the rest of Molesworth. Existing and future facilities should be guided by the recreation settings described in section 4.8.2: *Recreation opportunity settings*.

4.8.4.1 **Camping**

Under section 44 of the Reserves Act 1977, authorisation is required in order to camp on a recreation reserve. However, camping is seen as part of the Molesworth experience and will be facilitated. This includes:

- Designated camping areas: near the Molesworth Cob Cottage and the Acheron Accommodation House during the Acheron Road opening period (late October – mid April); Lake Tennyson all year round; and outside Departmental huts (during times of public access to the area in which the hut is located). Additional designated camping areas may be identified during the lifetime of this Plan.
- For people using the East-West Route, camping at the Molesworth Cob Cottage camping area at any time of the year (no permit required).
- For people boating down the Clarence River, camping at the Acheron confluence and Big Eddy at any time of year (no permit required for camping, although a fire permit is required for an open fire).
- Freedom camping (i.e. camping outside the designated camping areas) within the public access zones' open periods (i.e. when an activity permit is not required), with the exception of the Acheron Road corridor (see below).
- For times and places outside open periods, camping may be part of the recreational trip covered by an activity permit (e.g. activity permit sought for a tramping trip which includes camping).

These provisions equally apply to the lands adjoining water bodies. Designation of marginal strips as recreation reserve has not altered the public's access rights. An authorisation is required to camp on recreation reserve under section 44, similarly; an authorisation is required to erect structures on land administered under the Conservation Act 1987 (s39(1)(f)).

Camping includes staying overnight in a vehicle, such as a campervan or car, as well as non-vehicle-based camping.

At any time of year, camping adjacent to the Acheron Road (outside the two designated camping areas) shall not be allowed because of fire risk. Given public interest in more camping opportunities adjacent to the Acheron Road, additional camping areas will be investigated during the lifetime of this Plan, with the goal of enhancing camping opportunities on Molesworth.

Campers may stay up to five nights in the designated camping areas. It is intended that the Molesworth Cob Cottage camping area will be vested as recreation reserve—currently it occupies legal road reserve (see section 4.11: *Land acquisition, exchange and disposal*). On the assumption that its land status is altered, the maximum stay period may be reduced for the Molesworth Cob Cottage camping area, should demand increase. This campsite is small and isolated, and it is not desirable that short-term campers be turned away because long-term campers are occupying the site. The Department proposes a bylaw that would limit the number of nights that may be spent in the designated camping areas.

No open fires may be lit by visitors except at the Clarence River campsite known as Big Eddy (see section 4.7.3: *Fire management*).

Campers will be encouraged to follow the Molesworth Care Code (see section 4.8.5: *Interpretation*).

Since 1988, the Department has operated a summer ranger base at both the Acheron and Cob Cottage camping areas. These rangers open and close the gate to restrict traffic to daylight hours, manage the camping areas, and provide information to visitors. This service shall continue unless a ranger presence is no longer needed.

4.8.4.2 Huts available to the public

There are five huts and one bivvy available for public use (as at June 2013): Island Gully Hut, Sedgemere Sleepout Hut³, Severn Hut, Saxton Hut, Lake McRae Hut and Elliott Bivvy. These are maintained by the Department to either 'standard' or 'basic' hut standards.

4.8.4.3 Private accommodation

Other accommodation buildings on Molesworth are used for farming (owned by Landcorp) or electricity transmission services (owned by Transpower). These are not available for public use because they are part of the working station or used for other business purposes.

There is no private accommodation for recreational purposes on Molesworth, and it is not intended to allow any in the future because it is not considered to be consistent with the recreation settings described in section 4.8.2: *Recreation opportunity settings*. Private accommodation is defined as any place to live or lodge which is not available to the general public on an open basis (such as a privately-owned lodge providing paying clients with a higher standard of accommodation than DOC huts and camping areas).

4.8.4.4 Roads, tracks and routes

Road access is an important element of the Molesworth experience for visitors. It is considered that the existing provision of 2WD roads (i.e. Acheron and Tophouse roads) is adequate and, for this reason, no new formed 2WD roads for public use will be constructed on Molesworth. Any pressure to improve the standard of the Acheron and Tophouse roads (beyond 2013 levels) shall be resisted—unsealed roads form part of a visitor's experience of Molesworth.

³ The 'Sedgemere Sleepout Hut' is so-called because it looks like a sleepout of the adjacent Departmental staff quarters.

In order to enhance public access on Molesworth, accessways that offer practical alternatives to some inaccessible unformed legal roads will be investigated. Where an accessway is found to be suitable, it will be marked or formed along its alignment.

Five amenity areas (car park, toilet, shelter with interpretation and orientation information) are provided for the public: two sites along the Acheron Road (near the Severn River and by the old NZED Pig Trough suspension bridge); near the Acheron-Clarence confluence (for Clarence River users); adjacent to Lake Tennyson; and by the Sedgemere Sleepout Hut.

Tracks and routes provide a means of practical access (and certainty of access) for the public. The aim is to provide a spectrum of tracks and routes to facilitate public walking, tramping, cycling and horse trekking on Molesworth. The intention is to meet the needs of visitors pursuing the recreation opportunities identified in section 4.8.2: *Recreation opportunity settings*.

As at June 2013, tracks and routes available for public recreation include:

- Acheron Lookout track (1 km long, from the Acheron camping area)
- Molesworth Homestead Lookout track (450 m, from the Molesworth Cob Cottage camping area)
- Pudding Hill walking track (4 km, from Acheron Road at Chimney Stream to the top of Pudding Hill)
- Mt Chisholm track (3.5 km, from Acheron Road near Wards Pass to the top of Mt Chisholm (NE); also to trig 4151)
- Mt Augarde track (1.5 km, from Acheron Road at Isolated Flat to Mt Augarde)
- Multi-day East-West Route (81 km, unmarked): Sedgemere Hut – Severn Hut – Saxton Hut – Molesworth Cob Cottage camping area – Lake McRae Hut – Forbes Hut (Clarence Reserve). This route was agreed when the lease was negotiated to provide the public with an accessway across Molesworth
- Leatham Molesworth Route (unmarked): connects with the East-West Route at Saxton and Severn Huts, up the Saxton valley (14 km) and the Severn valley (9 km) to connect with, respectively, the Gordon valley via Saxton Saddle, and the Leatham valley via Severn Saddle and so connect with the Leatham Conservation Area and form a loop route.

4.8.4.5 *Future recreation facilities*

Proposals for new facilities, including huts and tracks, should consider the following criteria:

- Its intended purpose, especially its contribution towards one of Molesworth's recreation opportunities
- Its effect upon the remote character of Molesworth and the maintenance of a low level of facility provision within an uncluttered landscape (the desired outcome for Molesworth)
- The potential effects of the facility on the surrounding natural resources, the historical and cultural heritage, farming, and existing recreational experiences including potential conflict between visitors
- Its location—whether this best meets its intended purpose and minimises adverse effects.

Objectives

1. To provide and maintain a range of public recreational facilities, including standard and basic huts and camping areas, to assist visitors to experience Molesworth.
2. To ensure that the provision and maintenance of facilities, including accommodation, does not detract from the remote character of Molesworth and is consistent with the recreation opportunity settings described in section 4.8.2: *Recreation opportunity settings*.
3. To ensure no private accommodation or facilities for recreation or tourism purposes are established.

Policies

1. Provide and maintain a range of public recreational facilities, such as camping areas and tracks, in accordance with the Molesworth Recreation Assets Plan.
2. Encourage camping within the designated camping areas and the open access zones specified in Table 2 and Map 3.
3. Camping should not be allowed adjacent to the Acheron Road other than in designated camping areas.
4. Provide a limit on the number of nights visitors may stay in designated camping areas if demand outstrips the supply of camping space.
5. New camping opportunities may be provided during the lifetime of this Plan.
6. Maintain roads as unsealed and ensure no new roads for public use are constructed. This policy does not prohibit the marking or formation of new accessways that offer an alternative to inaccessible unformed legal roads.
7. Charges may be made for the use of huts and camping areas.
8. Decline any applications for private accommodation or facilities that are for recreation or tourism purposes.
9. Carry out an assessment of effects on the environment and the recreational experience for all proposed new or upgraded recreational facilities. They should be designed, managed and maintained to ensure they are appropriate for the recreation setting, and the recreational opportunities they facilitate.
10. Seek bylaws to support the implementation of policies 2, 3, 4 and 7 above.

See also	Section 1.3.2 <i>Legal designation</i>
	Section 2.6 <i>Recreation and public access</i>
	Section 3.2.4 <i>Recreation values</i>
	Section 3.3.1 <i>Public access for recreation</i>
	Section 4.7.3 <i>Fire management</i>
	Section 4.8.2 <i>Recreation opportunity settings</i>
	Section 4.8.3 <i>Public access</i>
	Section 4.8.6 <i>Hazards to people</i>
	Section 4.9.1 <i>Recreation and tourism concessions</i>
	Section 4.11 <i>Land acquisition, exchange and disposal</i>
	Appendix 5 <i>Recreation facilities</i>

4.8.5 Interpretation

Interpretation and visitor information are tools that serve multiple purposes. These include introducing and orientating visitors to Molesworth, enhancing visitor understanding of the area, enriching visitor experiences, promoting public support for management of the area and for conservation and farming in general, and promoting appropriate visitor behaviour and sensitive use of Molesworth.

It is important that interpretation and visitor information is provided in such a way that it is consistent with the remote character of the area. A critical component of information provision about Molesworth is to ensure people and organisations are aware of their access rights and the reasons they may be restricted.

Interpretation and visitor information about Molesworth is provided in a variety of ways including interpretation signs, orientation signs, publications (booklets, fact sheets, etc.), the Department's website, summer rangers, and interpretation provision by concessionaires.

A Molesworth Interpretation Plan (Department of Conservation et al. 2008) has been prepared and guides the development of interpretation on Molesworth.

The Molesworth Care Code provides guidance to visitors about appropriate behaviour on Molesworth, including regarding fires, gates, livestock, vehicles, dogs, native plants and animals, weed spread, rubbish, toilet waste, rivers and lakes, cultural heritage, and public enjoyment. The Care Code is disseminated as part of the publicly available information about Molesworth (e.g. Department's website, on-site signage).

Objectives

1. To enhance public enjoyment through the provision of interpretation and visitor information that enriches understanding and knowledge of Molesworth and its natural and human history.
2. To increase understanding of, and support for, the integrated management of Molesworth.

Policies

1. Provide interpretation facilities and programmes in accordance with the Molesworth Interpretation Plan.
2. Maintain interpretation facilities to an appropriate standard.
3. Widely disseminate information about the public's rights of access on Molesworth.
4. Keep under review and disseminate the Molesworth Care Code to visitors.
5. Work with tangata whenua to ensure information regarding cultural values is appropriate and accurate.
6. Support may be given to concessionaires providing interpretation about Molesworth in the form of training, advice or resource materials.
7. Interpretation provided by concessionaires may be monitored to ensure it is accurate and appropriate.

See also Section 2.6 *Recreation and public access*
 Section 4.1 *Treaty of Waitangi responsibilities*
 Section 4.2 *Public participation*
 Section 4.8.3 *Public access*
 Section 4.9.1 *Recreation and tourism concessions*

4.8.6 Hazards to people

The Department has a legal responsibility to ensure that the structures and facilities it provides on Molesworth are safe, legal and fit for use. This includes working to minimise the effects and impacts that known natural hazards might have on these facilities. The Department also has a responsibility to ensure that visitors to Molesworth are adequately informed about the risks associated with their visit and that they are suitably prepared and equipped.

Because of the the hazards associated with a working farm, the Department needs to ensure that visitors understand how to behave near stock and on grazing lands. The Molesworth Care Code and on-site signage will be the primary means by which this information will be conveyed (see section 4.8.5: *Interpretation*).

Weather conditions on Molesworth can be extreme at any time of year. Public access to Molesworth may be closed for reasons associated with natural hazards (e.g. snow) and fire risk. Closure policies are presented in section 4.8.3: *Public access*.

These factors aside, outdoor recreation is an activity that is undertaken at an individual's own risk. The ethos of outdoor recreation in New Zealand is about personal responsibility, self-reliance, challenge and decision-making. This forms part of the enjoyment recreationists gain from their experience, especially for the recreation opportunity 'exploration and adventure'.

Visitors are responsible for their own decisions about the risks they are prepared to take on Molesworth and for ensuring that their group members have the level of skill, competence, and equipment required to cope with those risks.

Objectives

1. To ensure that the adverse effects of known natural hazards on facilities managed by the Department on Molesworth are avoided, remedied or mitigated.
2. To ensure that visitors to Molesworth are informed about hazards and risks, where known, and that they need to take personal responsibility for their safety when entering Molesworth.

Policies

1. Ensure that the adverse effects of natural hazards are avoided or mitigated for all facilities and structures and that natural hazards are taken into account when constructing new facilities.
2. Close a facility to public use in the event that it is unsafe, damaged by a natural hazard or in anyway made unfit for purpose. Notify the public about any facility closure as soon as practical.
3. In the event of a facility closure, undertake an assessment to determine the feasibility of replacement or repair. If replacement is not feasible, alternatives should be investigated to ensure the outcomes for Molesworth are met. This policy does not apply to road closures.
4. Provide information to the public about hazards to be found on Molesworth and the requirement for them to be personally responsible for their own safety.

See also Section 4.7.3 *Fire management*
Section 4.8.3 *Public access*
Section 4.8.4 *Accommodation and facilities for recreational purposes*

4.8.7 Domestic animals (including pets)

Domestic animals and pets can have adverse effects on the farming, natural, historical and cultural values of Molesworth and can detract from visitor enjoyment. Effects include the potential introduction of TB and weeds, indigenous vegetation browsing, increased erosion and conflict with other user groups.

A permit is required to take a dog or a horse onto Molesworth. Permits require the agreement of the Lessee. Animals must be properly controlled and their presence needs to fit in with farming operations. See section 4.8.3.2: *Activities*. The Lessee must be notified of any dogs left behind (lost or dead) on Molesworth. People bringing dogs should follow the Molesworth Care Code with respect to requirements to control the spread of animal diseases.

No other animals, including birds or pets, may be brought onto Molesworth.

Management of feral populations of introduced animals is discussed in section 4.7.2: *Pest and wild animal control*.

Objective

- To ensure that domestic animals and pets do not have adverse effects on the farming, natural, historical and cultural values of Molesworth.

Policies

1. Permits may be issued for dogs (for hunting purposes) or for horses (for hunting or personal trekking use), subject to the conditions set out above.
2. Seek a bylaw that would restrict the public bringing animals into Molesworth with the exception of dogs and horses by permit.
3. Permits are not required for any animals that form part of the Lessee's farming operation.

See also Section 4.7.2 *Pest and wild animal control*
Section 4.8.3 *Public access*

4.9 Other uses

4.9.1 Recreation and tourism concessions

Various recreation and tourism concessions operate on Molesworth. As at June 2013, these included 15 concessionaires offering guiding (for fishing, horse trekking, cycle touring, 4WD driving), recreation events (two cycling events and one running race), interpretive tours by bus, and outdoor education courses. Rafting companies that use Molesworth also require concessions.

Concessions can enable a wide range of people to safely enjoy the area and foster awareness of Molesworth, its values and threats to these. Commercial recreation and tourism operations that fit with the values of Molesworth (described in section 3.2: *Values*) and the recreation opportunities expressed in section 4.8.2: *Recreation opportunity settings* would be suitable for Molesworth.

Some activities may have the potential to cause adverse effects on the other values of Molesworth, including the experiences of other visitors, and conditions may need to be set to avoid or minimise such effects. This may include limits on group size, the amount of use (number of trips and/or clients) and occupation restrictions for facilities; in particular, that concessionaire groups cannot occupy more than 50 percent of any hut open to the public. Monitoring shall be used to identify situations where limits or conditions should be set. Concessionaires may be required to contribute to the cost of all or part of this monitoring.

It is not possible to anticipate with certainty the commercial proposals for which approval may be sought in the future. Guidance about which types of proposals are appropriate for Molesworth is provided in the outcomes statements for Molesworth in section 4. The location of a proposed concession is also relevant—what is appropriate within the road corridors may not be acceptable in the backcountry. During the lifetime of this management plan, ongoing assessment will identify appropriate (and not appropriate) concession activities for Molesworth.

Concessions cannot be granted for helicopter landings and should not be granted for any other commercial aircraft operator seeking to land on Molesworth (see section 4.9.2: *Aircraft*).

The lease states that the Department must consult with, and obtain agreement from, the Lessee with respect to any new arrangements for commercial activities on Molesworth, including those for recreation, tourism or other purposes. This consent is not to be unreasonably withheld and must be for reasons relating to farming operations. Farming activities that may require access consent to be withheld are mustering, calving, and pest and wild animal control (see section 4.8.3.3: *Other access provisions*). The presence of grazing cattle is not a reason for which consent may be withheld. The Department must take practicable steps to ensure that concessionaires follow the Molesworth Care Code.

Objectives

1. To allow recreation and tourism concessions on Molesworth where these do not adversely impact upon the values for which Molesworth is managed, including other users.
2. To encourage concessions that provide visitors with the opportunity to experience a high country station and a remote area of wide open spaces, in a manner that fits within the vision and values of Molesworth.

Policies

1. Recreation and tourism concessions should only be granted if they are consistent with the outcomes, objectives and policies identified in this management plan.
2. Recreation and tourism concessions (including variations to existing concessions) may be granted where they facilitate the attainment of the recreation opportunities described in section 4.8.2 of this management plan.

3. Manage recreation and tourism concessions so that they provide opportunities for the public's benefit and enjoyment but do not impact on or detract from other visitors' use and enjoyment of Molesworth, and other Molesworth values. This may require limiting the number of participants (clients), party sizes, frequency of trips or similar conditions.
4. Where the impacts of increasing visitor numbers to a place are unknown or uncertain, new applications for recreation and tourism concessions should be declined, unless the applicant can demonstrate that increasing numbers or new activities will not have an adverse effect on Molesworth values or on existing recreational opportunities, and that they are consistent with the outcomes for Molesworth and the public access provisions of this Plan. When assessing applications, the cumulative impact of concession activity in an area should be considered.
5. In general, concessionaires and their clients may share public facilities on a first-come first-served basis, but should not occupy more than 50 percent of available bed space in huts.
6. Monitor concessions to:
 - i Assess compliance with concession conditions
 - ii whether there are any adverse effects, including cumulative effects, on Molesworth values, including public use and enjoyment
 - iii Assess whether the total commercial use is within any limits set for the area.
7. In areas where monitoring determines that concession opportunities need to be limited, a fair and equitable method of allocating the opportunity should be used.

See also Section 3.2 *Values*
 Section 4.8.2 *Recreation opportunity settings*
 Section 4.8.3 *Public access*
 Section 4.9.2 *Aircraft*

4.9.2 **Aircraft**

All aircraft require a concession to land on Molesworth. Exceptions are emergency situations, for management purposes, and aircraft operated by the New Zealand Defence Force or the Civil Aviation Authority.

The recreational activity of backcountry flying (motorised fixed-wing aircraft) can be accommodated on Molesworth where landings do not conflict with Molesworth's values. A concession is required to land a motorised fixed-wing aircraft for recreational purposes. Concession conditions will be used to avoid or minimise conflict with other visitors, farming operations and management activities. Landings can take place on four registered airstrips, all of which are owned by the Lessee (Isolated Flat, Red Gate, Bush Gully (also known as the Acheron airstrip), and the Leader airstrip (also known as the Clarence)). The airstrip known as 'Molesworth' is situated on Muller Station and other airstrips are either within Station operational areas (see section 4.8.3.1: *Public access zones*) or are not registered. The public access provisions outlined in section 4.8.3: *Public access* apply to recreational pilots landing on Molesworth; the concession replaces the requirement for an activity permit.

Landings by fixed-wing aircraft shall not be allowed where the purpose is to re-position recreationists; for example, to provide access to remote areas.

The recreational use of Molesworth airspace by sailplanes (gliders) is supported through the recognition that sailplanes might have to make emergency landings on Molesworth from time to time.

The lease prohibits helicopters being used for recreational purposes (including access) on Molesworth and the Department proposes a bylaw that would prohibit such activity.

Requests to land other types of aircraft (e.g. hot air balloons) may be considered.

Aircraft landings may be sought by people or organisations for purposes other than recreation (e.g. farming operations by the Lessee, fish and game management). These landings may require a concession and will be considered on a case-by-case basis. Care must be taken to minimise the effects upon Molesworth's values, including farming operations, visitors and management activities.

The timing and location of any air access and landings shall be arranged in consultation with the Lessee. The Lessee owns all airstrips on Molesworth.

Objective

1. To provide for aircraft use for farming, management and utility maintenance activities.
2. To provide for the pursuit of recreational backcountry flying (fixed-wing aircraft).

Policies

1. Concessions to land aircraft for purposes other than recreation may be granted, where there are no significant adverse effects on Molesworth's values.
2. Concessions will not be granted to land helicopters for recreational purposes.
3. Seek a bylaw that would prohibit public access by helicopter for recreational purposes.
4. Concessions may be granted to land any motorised fixed-wing aircraft for recreational purposes where:
 5. there are no significant adverse effects on Molesworth's values;
 6. the landing is part of a backcountry flying experience; and
 7. it is not for the purpose of repositioning recreationists.
8. Concessions to land other types of aircraft for recreational purposes may be granted.

See also Section 4.8.3.2 *Activities*
 Section 4.9.1 *Recreation and tourism concessions*
 Section 4.9.7 *Military training exercises and search and rescue training exercises*

4.9.3 Electricity transmission lines and associated facilities

Three major electricity transmission lines pass through Molesworth. They are a dominant landscape feature and their presence reflects Molesworth's large size and strategic location. All lines are owned and operated by Transpower New Zealand Limited. They are:

1. Islington-Kikiwa Line A (220kV AC)
2. Islington-Kikiwa Line B (220kV AC)
3. Benmore-Haywards Line A (350kV HVDC).

In the south, Islington-Kikiwa Line A enters Molesworth over Jacks Pass while the other two lines come over Jollies Pass. The Islington-Kikiwa lines extend up the Clarence valley, over Island Saddle, and down the Upper Wairau valley. The Benmore-Haywards line runs up the Acheron valley, over Wards Pass and down the Awatere valley.

Some facilities and buildings on Molesworth are owned by Transpower. As noted in section 2.2: *History*, the two roads through Molesworth were built to allow construction and maintenance of the transmission lines; these are now legal road or recreation reserve (see section 1.3.2: *Legal designation*). Transpower maintains access roads to the pylons and these roads are not open for public vehicular use. Transpower assets on Molesworth are:

- Molesworth Fibre Communications Repeater Station (located near the Yarra River)
- Molesworth Homestead depot and accommodation.

Under the Electricity Act 1992, Transpower has the right of physical access on Molesworth in order to inspect, operate and maintain existing transmission lines and other assets. Molesworth is a 'natural area' for the purposes of the National Environmental Standards for Electricity

Transmission Activities (NESETA) under the Resource Management Act 1991. The NESETA includes restrictions on vegetation clearance and the amount of earthworks that can be undertaken within a natural area.

A national agreement between the Department and Transpower (signed in 2004) guides the inter-agency relationship. It states that any new works, or any significant upgrade of existing infrastructure, requires a concession, but that Transpower does not require a concession to undertake 'business as usual' activities (a detailed list of activities is documented in the national agreement, ranging from access track maintenance to strengthening pylon foundations) where it has existing use rights⁴. Any helicopter use requires a concession (see section 4.9.2: *Aircraft*).

The national agreement sets out a code of practice for entry onto land for Transpower to follow, which emphasises consultation and liaison, and places responsibilities upon Transpower to minimise adverse environmental effects.

Objectives

1. To provide for the ongoing operation and maintenance (including access) of electricity transmission lines and associated facilities on Molesworth.
2. To minimise the effects on the values of Molesworth of any work on transmission lines and associated facilities.

Policies

1. In liaison with the Lessee, facilitate access by Transpower on Molesworth, for the inspection, operation and maintenance of existing transmission lines and other assets.
2. An environmental impact assessment should be required for any significant construction work on new or existing transmission lines or associated facilities.

See also Section 4.4 *Conservation of natural resources*
Section 4.9.2 *Aircraft*

4.9.4 Other utilities and energy generation

Molesworth hosts other utilities, including radio masts and a fibre optic cable. The radio masts are located on the Rachel Range. The underground fibre optic cable was laid in 2008/09. It runs over Jollies Pass, up the Acheron valley, over Wards Pass and down the Awatere valley. Because of Molesworth's size and location, future proposals for utilities and energy generation schemes are very likely.

It is desirable that utilities and energy generation infrastructure are located outside Molesworth as much as possible, in order to minimise adverse effects upon the nature conservation, historical and cultural heritage, farming and recreation values of Molesworth. Utilities and energy generation infrastructure, and associated construction work, requires approval from the Department (a concession). The Department wishes to minimise adverse effects upon conservation, landscape, farming and recreation values. Where utilities are to be housed on Molesworth, they should be co-located with existing structures, to minimise their impact on the environment.

For reasons of public safety or the competent operation of the utility or energy generation scheme, public access may be denied to areas where utilities and generation plants are located, but public exclusion should be avoided wherever possible.

⁴ See Part 3B of the Conservation Act 1987 and transitional provisions contained in section 7(2) of the Conservation Amendment Act 1996.

Objectives

1. To provide for utility infrastructure on Molesworth where it cannot be located elsewhere and where the effects on the values of Molesworth can be minimised.
2. To consider energy generation infrastructure only where it has minimal adverse effects on the values of Molesworth.

Policies

1. In liaison with the Lessee, facilitate access for utility providers (who hold a concession) to install, maintain and upgrade assets.
2. An environmental impact assessment may be required for any construction work on new or existing utilities.
3. Public access to utilities may be denied for reasons of public safety or competent operation of the utility; however, this should be avoided wherever possible.
4. Applications for energy generation schemes may be considered where there are no more than minimal adverse effects on Molesworth's values.
5. Advocate to protect Molesworth's values from adverse effects relating to utility and energy generation proposals on neighbouring lands.
6. Wherever feasible, ensure concessions require the removal of redundant infrastructure.

4.9.5 Mining and gravel extraction

Mining is generally incompatible with the values of protected natural areas. There is no mining activity on Molesworth, except for extraction of gravel for road, track and farm maintenance purposes. There are no known deposits of pounamu (greenstone) on Molesworth.

Mining activity for Crown-owned minerals on Molesworth requires an access arrangement, jointly authorised by the Minister of Conservation and Minister responsible for the Crown Minerals Act 1991, under section 61(2) of the Crown Minerals Act 1991. This section states that the Ministers, when considering whether to agree to an access arrangement, shall have regard to:

- i The objectives of the Reserves Act 1977
- ii The purpose of the reserve
- iii Conservation General Policy 2005 and this management plan
- iv The safeguards against any potential adverse effects
- v The direct net economic and other benefits of the proposed mining
- vi The recommendation of the Director-General of Conservation (where appropriate)
- vii Any other relevant matters.

It is considered that any mining activity other than gravel extraction (discussed below) would have unacceptable adverse environmental effects and be inconsistent with the purposes for which the reserve is held. Therefore, mining should be actively discouraged and applications for access arrangements should be declined.

Gravel is extracted from gravel pits located alongside formed roads on Molesworth for road maintenance and routine farming activities. For practical reasons, the pits are close to the roads but located out of sight to minimise adverse effects upon visitors' experiences. Gravel is used close to the point of extraction to minimise the spread of weeds.

Such use is provided for under the Crown Minerals Act 1991 (section 8(2)), which allows the landowner or occupier to extract minerals for any reasonable agricultural, pastoral, domestic, roadmaking, or building purpose without a permit under that Act. However, a resource consent is required from the Marlborough District Council for gravel extraction in that part of Molesworth that falls within Marlborough District and resource consents may also be required from the Hurunui District Council and Canterbury Regional Council for that part that falls within Hurunui District.

Under the lease, the Lessee must seek approval from the Department for the extraction and use of any mineral, including gravel. The Department cannot unreasonably withhold consent for reasonable use of gravel for day-to-day track maintenance and other farm maintenance or construction. The Department may extract gravel for its own use in maintaining tracks and roads.

In order to protect the natural values of rivers and lakes on and adjacent to Molesworth, gravel is extracted from them only where necessary for maintenance work and where no other source of gravel exists in the immediate vicinity. It is intended to continue this practice.

Objectives

1. To actively discourage mining within Molesworth.
2. To allow the extraction and use of gravel for on-property and adjoining road maintenance purposes.

Policies

1. Applications for access arrangements for mining activity should be declined.
2. Allow for the removal of sand, shingle or other natural material from the bed or foreshore of any lake or river within Molesworth where it is necessary for maintenance work and there is no other gravel source nearby.
3. Gravel may be extracted from existing gravel pits for the purposes of road maintenance and routine farm activities.
4. Minimise the effects of any extraction activity on natural (including landscape), historic, farming and recreation values.

4.9.6 Commercial filming and photography

Molesworth has received little attention from commercial film-makers and photographers to date, but interest may increase in the future. Commercial filming and photography ranges in scale from small groups using hand-held equipment to large international film crews making feature films. It can involve considerable use of equipment—vehicles, temporary buildings and aircraft—with the potential to adversely affect natural, farming, historical and cultural values, and public enjoyment. Commercial filming and photography can play a role in enhancing public appreciation of the values of Molesworth, and conservation values and issues more generally.

Any commercial filming or photography on Molesworth requires a concession. When a concession application is being considered, other policies in this plan must be taken into account, especially where associated activities, such as aircraft and other mechanised vehicle use, erection of temporary structures or animal use, are sought.

In general, the effects of filming should not adversely affect natural, farming, historical and cultural values, or the enjoyment of the public. Monitoring should be required for large commercial film activities. Particular care must be taken to protect natural values from any effects of commercial filming or photography within Areas of High Natural Value and to maintain freedom of entry and access for the public as provided for in this Plan. The type of film is also a consideration: productions conveying a conservation message are more likely to be considered appropriate.

Objective

1. To allow commercial filming and photography where the activity does not detrimentally affect the values of Molesworth.

Policies

1. Allow commercial filming and photography where the activity is consistent with the outcomes, objectives and policies of this management plan.
2. Monitor the effects of commercial filming and photography upon the values of Molesworth and manage any adverse effects as they occur.

4.9.7 Military training exercises and search and rescue training exercises

The New Zealand Armed Forces make regular use of Molesworth for training exercises designed to give troops experience of operating in mountainous country. The New Zealand Police, and search and rescue authorities, use Molesworth for similar purposes.

Military training exercises are subject to the Defence Training Agreement 1990, of which the Department and the New Zealand Defence Force are parties. This agreement allows the Department, in liaison with the Lessee, to set conditions for the use of Molesworth by the Defence Force.

Each of these exercises requires authorisation and conditions should be included to minimise any adverse effects on Molesworth's values. The Lessee must be consulted by the Department when issuing these permits.

A permit for the use of aircraft may be granted for military training exercises and search and rescue training exercises.

Objective

1. To allow training exercises by the armed forces, police, and search and rescue authorities on Molesworth.

Policies

1. Allow the armed forces to use Molesworth for training exercises where they comply with the Defence Training Agreement 1990 or any successor to it.
2. Allow other training exercises (such as those of the Police and Search and Rescue).
3. Work cooperatively with the training authorities or groups to minimise any adverse effects upon the values of Molesworth.

4.9.8 Indigenous freshwater fishing

There are no commercial eel/tuna fishing concessions for Molesworth (as at June 2013). Longfin eels/tuna are identified in the Department's threatened fish ranking as 'Declining' (Allibone et al. 2010). Any commercial eel/tuna fishing applications will be considered on a case by case basis, adopting a precautionary approach, and recognising the significance of longfin eels/tuna in freshwater ecosystems.

Objective

1. To protect indigenous freshwater fish.

Policy

1. Concessions should not be granted for commercial eel/tuna fishing.

4.10 Research

This section refers to research undertaken by external research providers. Research and monitoring undertaken by the Department is discussed elsewhere (see sections 4.4.1, 4.5, 4.8.3.4 and 5.2).

4.10.1 Natural resources

For more than 70 years, Molesworth has played an important role in research programmes associated with natural values and threats to indigenous species and habitats. Much of this research has provided national benefit (e.g. Landcare Research programme on TB vector control), as well as information directly relevant to the management of Molesworth. Molesworth is an ideal location for some research because of its physical characteristics (large size, climatic diversity, endemic species) and its integrated management regime (e.g. ability to exclude stock and measure grazing effects).

Since 1944, a series of photographs has been taken from fixed points at several-year intervals. Early work was undertaken by the Botany Division, DSIR, and subsequently by the Tussock Grasslands and Mountain Lands Institute, the Department of Lands and Survey and, more recently, by Landcorp. The photographs constitute a unique record of vegetative change in a high country area subject to ongoing grazing and the spread of weeds. It is worthy of continuation.

The Department receives applications from science agencies (universities, Landcare Research, Te Papa, etc.) to collect materials such as plant, soil and invertebrate samples. These applications are assessed and permits issued on a case-by-case basis, as appropriate.

See section 4.4.1: *Indigenous species, habitats and ecosystems*.

4.10.2 Historical and cultural heritage

Applications for investigation of historic and archaeological sites on Molesworth will be assessed on a case-by-case basis.

As part of its survey of places of significance, Te Rūnanga o Ngāi Tahu intend to survey Molesworth during the lifetime of this Plan. This will provide new knowledge about Molesworth's cultural values.

See section 4.5: *Historical and cultural heritage*.

4.10.3 Recreation

No known research has been conducted on the recreational use of Molesworth, beyond Departmental visitor surveys and monitoring. Applications for investigation of recreational use of Molesworth will be encouraged and evaluated on a case-by-case basis.

See section 4.8.3.4: *Research, survey and monitoring*.

Objective

- To encourage and support scientific studies on Molesworth.

Policies

- Encourage research that contributes to greater understanding of Molesworth's values, provided the research activity is compatible with the protection and/or maintenance of Molesworth's values.
- Request that researchers working on Molesworth report their findings and any management implications to the Department, the Molesworth Steering Committee and the public.
- Non-Departmental research may require a concession or permit.

See also Section 4.4.1 *Indigenous species, habitats and ecosystems*.
Section 4.5 *Historical and cultural heritage*.
Section 4.8.3.4 *Research, survey and monitoring*.
Section 5.1 *Management plan implementation, amendment and review*
Section 5.2 *Monitoring management plan implementation*

4.11 Land acquisition, exchange and disposal

Some Departmental facilities occur on legal road, which means they are not formally part of Molesworth Recreation Reserve. It is intended to seek the transfer of small discrete areas of land from legal road to recreation reserve to ensure the Department has management control over them. These areas are:

- Molesworth Cob Cottage historic precinct, including the ranger accommodation and camping area
- Lake Tennyson camping area.

These sections of legal road (see Map 9) are administered by the Marlborough and Hurunui District Councils. The Department intends to work with the Councils to pursue this land rationalisation which would involve separate public processes under the Local Government Act 1974.

The intention is to continue to manage these areas as vehicle-accessed camping areas, in a manner consistent with this management plan.

Other small-scale land transfers may be sought where desirable for sound management of Molesworth and neighbouring properties; for example, rationalisation of the St James-Molesworth boundary to provide a more practical division for the purposes of grazing and recreational access.

No significant land acquisitions or removals are proposed (as at June 2013).

Objective

1. To undertake the necessary statutory land management processes to designate as recreation reserve the land on which all facilities managed as part of Molesworth Recreation Reserve are located.

Policies

1. Work with the relevant district council to stop small areas of legal road on which the Lake Tennyson camping area, and the Molesworth Cob Cottage and camping area are located (as shown on Map 9), and then gazette these areas as recreation reserve.
2. Investigate the possible rationalisation of the boundary between Molesworth and the St James Conservation Area, in liaison with the Lessee.

5. Monitoring

5.1 Management plan implementation, amendment and review

This management plan will be implemented through the Department's business planning process, which will detail the relative allocation of effort and funds to work towards achievement of the desired outcomes and objectives of the Plan. Plan implementation will be undertaken in liaison with the Molesworth Steering Committee and the Lessee, given the cooperative approach to the management of Molesworth (see section 4.3: *Cooperative management*), the Steering Committee's role and the Lessee's financial contribution to some Plan objectives (e.g. weed control).

Section 6M(c) of the Conservation Act 1987 establishes that one of the functions of conservation boards is to advise the New Zealand Conservation Authority and the Director-General on the implementation of conservation management plans. The Minister of Conservation has given three functions to the Molesworth Steering Committee (see section 1.6.3: *Molesworth Steering Committee*), which include advising the Minister of Conservation and the Lessee on any issues arising from the implementation of the terms of the Land Act lease and the management plan.

This section provides a framework by which the Molesworth Steering Committee and the Nelson Marlborough Conservation Board may review progress in achieving the desired outcomes and objectives of this Plan.

The Conservation Act 1987 (section 17H(4)) requires that this management plan be reviewed no later than 10 years after its approval, although there is a provision for the Minister of Conservation to extend this period.

Within the lifetime of a management plan, parts of it may become outdated or provide inadequate information. Amendments may, accordingly, be initiated at any time by the Director-General after consultation with the conservation board(s) affected. Amendments and reviews follow processes detailed in Sections 17H and 17I of the Conservation Act. An exception is provided for where an amendment will not materially affect the objectives of this management plan or the public interest in the particular area. In these instances, a simpler process without public consultation may be followed.

The farming lease over Molesworth will expire in 2020. Because it is not known whether the lease will be renewed, or the nature of any future lease, this Plan cannot make provision for circumstances different from the current lease regime. If farming on Molesworth ceased (no new lease) or the conditions of a new lease were substantially different from the current lease, then a review of this management plan would be undertaken.

The Department will consult with the public about their views on the future of Molesworth in 2017, prior to the current lease expiry. These views would help direct any future management plan and assist with the decisions about lease renewal.

Objectives

1. To implement the outcomes, objectives and policies of the Molesworth Management Plan.

Policies

1. Use the desired outcomes and objectives of this management plan to guide annual business planning for Molesworth.
2. Provide annual monitoring reports to the Nelson Marlborough Conservation Board and the Molesworth Steering Committee. This will assist the Board and the Steering Committee to assess the implementation of the Plan.
3. This management plan should be reviewed or amended when:
 - a. It is due for review, for completion no later than 10 years after the date of its approval

- b. Determined by the Director-General or Minister of Conservation
 - c. Changes to legislation, general policy or government directions represent a significant departure from the provisions of the management plan
 - d. Circumstances change to indicate that the provisions of the management plan are inadequate or impractical or have been superseded by new information or evidence, including the cessation of the farming lease or substantial material changes to lease conditions, or
 - e. Monitoring indicates issues substantive enough to warrant it.
4. Undertake public consultation about the future of Molesworth before the end of 2017.

5.2 Monitoring management plan implementation

Implementation of this Plan will be assessed via monitoring. The aim is to show whether the outcomes and objectives of this Plan are being accomplished and to improve overall management performance.

Specific monitoring methods and actions will be outlined within Departmental plans (e.g. Molesworth Biodiversity Strategic Plan).

Objectives

1. To monitor progress toward achievement of the outcomes and objectives outlined in this management plan.
2. To continually improve management in response to the findings of research, monitoring and evaluation.

Policies

1. Prepare regular management plan implementation monitoring reports for the Nelson Marlborough Conservation Board and the Molesworth Steering Committee. These reports may include:
 - a. An evaluation of the extent to which a selection of the desired outcomes, objectives and policies of this Plan have been implemented or achieved
 - b. An analysis of the reasons for delays or failures in implementation
 - c. The nature and level of compliance/non-compliance with the provisions of this Plan and reasons for variation
 - d. Recommendations for improving Molesworth management.
2. As far as practicable, integrate monitoring of natural, historical and cultural, recreation and farming values, so that any impacts of one value upon another can be identified and managed.
3. Revise management according to the results of monitoring, evaluation, scientific research or new information.

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Land Information New Zealand 2003: Molesworth management plan 2003.

Land Information New Zealand, Wellington, New Zealand.

Office of Crown Lands 1993: Resource management strategy for Molesworth Station: 1992-1997 management plan. Office of Crown Lands, Wellington, New Zealand. [Plan timeframe extended until 2002.]

Land Corporation Limited 1987: Molesworth management plan.

Land Corporation Limited, Wellington, New Zealand.

Glossary

Activity permit: A written permit that is required under the Reserves Act 1977 and the lease (clauses 31.7 and 31.8) for: (a) access to an area when it is not open to the public as of right; and (b) for certain activities at any time (see section 4.8.3: *Public access*). Activity permits are issued by the Department and require the consent of the Lessee.

Aircraft: Any machine that can derive support in the atmosphere from the reactions of the air otherwise than by the reactions of the air against the surface of the earth (section 2, Civil Aviation Act 1990). (Conservation General Policy 2005)

Animal: Any mammal, bird, reptile, amphibian, fish (including shellfish) or related organism, insect, crustacean, or organism of every kind; but does not include a human being (section 2, Reserves Act 1977). Any member of the animal kingdom other than a human being (section 2, Conservation Act 1987). (Conservation General Policy 2005)

Archaeological site: Any place in New Zealand that (a) either was associated with human activity that occurred before 1900 or is the site of the wreck of any vessel where that wreck occurred before 1900; and (b) is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand (section 2, Historic Places Act 1993).

Areas of High Natural Value: Areas on Molesworth that are recognised for their natural values, many of which were originally identified as Recommended Areas for Protection in the Protected Natural Areas Programme (PNAP) Survey (Courtney & Arand 1994). The focus of the PNAP has been the protection of the best representative examples of indigenous ecosystems and habitats within the context of an ecological district.

At Risk (species): Taxa that do not meet the criteria for any of the 'Threatened' species categories, but are declining (though buffered by a large total population size and/or a slow decline rate), biologically scarce, recovering from a previously threatened status, or survive only in relictual populations. There are four 'At Risk' categories under the New Zealand Threat Classification System 2008: Declining; Recovering; Relict; and Naturally Uncommon. Species are currently under review to update their threat categories. (Townsend et al. 2008)

Authorisation: Collective term for all types of approvals by the Minister and the Director-General of Conservation provided for in a statutory process. (Conservation General Policy 2005)

Biodiversity: The variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and ecological complexes of which they are part. This includes diversity within species, between species and of ecosystems. (Conservation General Policy 2005)

Biosecurity: The exclusion, eradication or effective management of risks posed by pests and diseases to the economy, environment and human health. (Conservation General Policy 2005)

Building: Has the same meaning as given to it by sections 8 and 9 of the Building Act 2004. (Conservation General Policy 2005)

Bylaw: A bylaw approved by the Minister of Conservation in accordance with sections 106–108 of the Reserves Act 1977.

Care Code: See Molesworth Care Code.

Concession: A lease, licence, permit or an easement, granted under section 59A of the Reserves Act 1977 (and Part IIIB of the Conservation Act 1987), to enable the carrying out of a trade, occupation or business on areas managed by the Department of Conservation.

Conservation: The preservation and protection of natural and historic resources for the purpose of maintaining their intrinsic values, providing for their appreciation and recreational enjoyment

by the public, and safeguarding the options of future generations (section 2, Conservation Act 1987) (Conservation General Policy 2005).

Conservation board: Conservation boards are established under section 6L of the Conservation Act 1987. The primary functions and powers of conservation boards are set out in the Conservation Act 1987 and the National Parks Act 1980 (sections 6M and 6N, Conservation Act 1987 and section 30, National Parks Act 1980). (Conservation General Policy 2005)

Conservation General Policy 2005: A policy prepared under section 17C of the Conservation Act 1987 to provide unified policy for the implementation of the following Acts listed in the First Schedule of the Conservation Act 1987: the Conservation Act 1987; the Wildlife Act 1953; the Marine Reserves Act 1971; the Reserves Act 1977; the Wild Animal Control Act 1977; and the Marine Mammals Protection Act 1978. It provides guidance for the administration and management of all lands and waters and all natural and historic resources managed for the purposes of those Acts. It also provides guidance for consistent management planning for the wide range of places and resources administered or managed by the Department, including the preparation of conservation management strategies, conservation management plans and sports fish management plans. Available from the Department website: www.doc.govt.nz/publications/about-doc/role/policies-and-plans/conservation-general-policy/

Conservation management plan: A plan for the management of natural and historic resources and for recreation, tourism and other conservation purposes which implements a conservation management strategy and establishes detailed objectives for integrated management within a place or places specified in a conservation management strategy (section 17E, Conservation Act 1987). (Conservation General Policy 2005)

Conservation management strategy: A strategy which implements general policies and establishes objectives for the integrated management of natural and historic resources and for recreation, tourism and other conservation purposes. A conservation management strategy is reviewed every ten years (section 17D, Conservation Act 1987). (Conservation General Policy 2005)

Conservation plan: A plan which identifies the historical and cultural values and fabric of a particular site or structure, and recommends management methods to protect it and, if appropriate, to bring it to a standard of repair at which it will be maintained into the future.

Consultation: An invitation to give advice, and the consideration of that advice. To achieve consultation, sufficient information must be supplied and sufficient time allowed by the consulting party to those consulted to enable them to tender helpful advice. It involves an ongoing dialogue. It does not necessarily mean acceptance of the other party's view, but enables informed decision-making by having regard to those views. (Conservation General Policy 2005)

Cultural: Societal values with an emphasis on New Zealand/European history and Māori tikanga that are handed down through the generations. (General Policy for National Parks 2005)

Cultural materials: For the purpose of this management plan, cultural materials are defined as any plant or animal materials, and clay, mineral or stone, to the extent to which the Department holds and is responsible for them, and which are important to iwi in maintaining their culture.

Cumulative effect: An effect which arises over time or in combination with other effects (section 3, Resource Management Act 1991). (Conservation General Policy 2005)

Ecosystem: A biological system comprising a community of living organisms and its associated non-living environment, interacting as an ecological unit. (Conservation General Policy 2005)

Ecosystem services: A wide range of conditions and processes through which natural ecosystems, and the species that are part of them, help sustain and fulfill life. (Conservation General Policy 2005)

Effect: Any positive or adverse effect; and any temporary or permanent effect; and any past, present or future effect; and any cumulative effect which arises over time or in combination with other effects regardless of the scale, intensity, duration, or frequency of the effect and also includes any potential effect of high probability; and any potential effect of low probability which has high potential impact (section 3, Resource Management Act 1991) (Conservation General Policy 2005)

Endemic species: An indigenous species that breeds only within a specified region or locality and is unique to that area. New Zealand's endemic species include birds that breed only in New Zealand, but which may disperse to other countries in the non-breeding season or as sub-adults.

Environment: Includes (a) ecosystems and their constituent parts, including people and communities; and (b) all natural and physical resources; and (c) amenity values; and (d) the social, economic, aesthetic and cultural conditions that affect those matters (section 2, Resource Management Act 1991). (Conservation General Policy 2005)

Eradicate: To remove completely. (Conservation General Policy 2005)

Exotic species: Introduced species, including indigenous species that are not native to Molesworth.

Facilities: Facilities that enable people to enjoy a range of recreational opportunities including (but not limited to): visitor and information centres, camping areas, tracks and walkways, bridges, backcountry huts, roads, car-parking areas, toilets, picnic areas, signs and interpretation panels, viewing platforms, wharves and boat ramps. (Conservation General Policy 2005)

Fish and game council: Statutory body with functions pertaining to the management, maintenance and enhancement of the sports fish and game resource in the recreational interests of anglers and hunters (section 26P, Conservation Act 1987). (Conservation General Policy 2005)

Fish and Game New Zealand: Collective name for New Zealand Fish and Game Council and the regional fish and game councils.

Formed road: See *Road*.

Freshwater fish: Includes finfish of the Classes Agnatha and Osteichthytes, and shellfish of the Classes Mollusca and Crustacea, that must at any time in the life history of the species, inhabit freshwater; and includes finfish and shellfish that seasonally migrate into and out of freshwater (section 2, Conservation Act 1987). (Conservation General Policy 2005)

Game birds: The wildlife declared to be game specified in the First Schedule to the Wildlife Act 1953. As at June 2013 they were all birds, viz: black swan, chukar, Australasian shoveler, grey duck, mallard duck, paradise shelduck, grey partridge, red-legged partridge, pheasant, pūkeko, bobwhite quail, brown quail, California quail. (Adapted from Conservation General Policy 2005)

Habitat: The environment within which a particular species or group of species lives. It includes the physical and biotic characteristics that are relevant to the species concerned. (Conservation General Policy 2005)

Historic place:

- (a) Means
 - i. any land (including an archaeological site); or
 - ii. any building or structure (including part of a building or structure); or
 - iii. any combination of land and a building or structure, –

that forms part of the historical and cultural heritage of New Zealand and lies within the territorial limits of New Zealand; and

(b) includes anything that is in or fixed to such land (section 2, Historic Places Act 1993).
(Conservation General Policy 2005)

Historic resource: Means a historic place within the meaning of the Historic Places Act 1993; and includes any interest in a historic resource (section 2, Conservation Act 1987) (Conservation General Policy 2005)

Historical and cultural heritage: Any building or other structure, archaeological site, natural feature, wāhi tapu, or object, associated with people, traditions, events or ideas, which contribute to an understanding of New Zealand's history and cultures. (Conservation General Policy 2005)

Indigenous species: Refers to plants and animals that have established in New Zealand without the assistance of human beings and without the assistance of vehicles or aircraft. This includes species that are unique to New Zealand as well as those that may be found elsewhere in the world. (Conservation General Policy 2005)

Information: Includes interpretation. (Conservation General Policy 2005)

Interpretation: Conveying information about the origin, meaning or values of national or cultural heritage via live, interactive or static media. It occurs in the vicinity of the subject and is designed to stimulate visitor interest, increase understanding and promote support for conservation.

Intrinsic value: A concept which regards the subject under consideration as having value or worth in its own right independent of any value placed on it by humans. (Conservation General Policy 2005)

Iwi: A Māori tribe of people. A group of several hapū with common ancestral links.

Lands adjoining water bodies: Areas of land which were formerly marginal strips, as marked on Map 2.

Lease: A grant of an interest in land that gives exclusive possession of the land and makes provision for any activity on the land that the lessee is permitted to carry out. The lease for farming on Molesworth excludes the lands adjoining water bodies shown on Map 2.

Mining: Means to take, win or extract by whatever means, a mineral existing in its natural state in land, or a chemical substance from that mineral, for the purpose of obtaining the mineral or chemical substance; but does not include prospecting or exploration; and 'to mine' has a corresponding meaning (section 2, Crown Minerals Act 1991). (Conservation General Policy 2005)

Molesworth: Molesworth Recreation Reserve, gazetted 1 July 2005.

Molesworth Care Code: A voluntary code of behaviour for visitors to Molesworth. Available from the Department website: www.doc.govt.nz/parks-and-recreation/places-to-visit/marlborough/south-marlborough/molesworth-station/plan-and-prepare/molesworth-care-code/

Molesworth Steering Committee: An Advisory Committee under section 9 of the Reserves Act 1977. The role of the Molesworth Steering Committee is to advise the Minister of Conservation on the biodiversity, recreation and pastoral farming management of Molesworth, assist in the preparation of the draft management plan, and provide advice to the Minister and Landcorp on any issues arising from the implementation of the management plan and the lease.

Molesworth values: Those values set out in section 3.2 of this management plan.

Natural: Existing in or produced by nature. (Conservation General Policy 2005)

Natural resources: Plants and animals of all kinds, and the air, water, and soil in or on which any plant or animal lives or may live, and landscape and landform, and geological features, and systems of interacting living organisms, and their environment, and includes any interest in a natural resource (section 2, Conservation Act 1987). (Conservation General Policy 2005)

Natural state: Unmodified by human activity or introduced plants or animals. (Conservation General Policy 2005)

Nature conservation: Means the preservation and protection of the natural resources of New Zealand, having regard to their intrinsic values and having special regard to indigenous flora and fauna, natural ecosystems, and landscape (section 2, Conservation Act 1987)

Outcome: A goal or end result of a conservation action or series of actions. (Conservation General Policy 2005)

Papatipu Rūnanga: The modern day administrative councils and representations of Ngāi Tahu hapū and whānau. Te Rūnanga o Kaikōura is the papatipu rūnanga of Ngāi Tahu for the area that Molesworth is located within.

Participation: The contribution of effort, information and ideas towards the work of the Department. (Conservation General Policy 2005)

People and organisations: An inclusive phrase used to refer to all individuals, clubs, companies, councils and other organisations and groups, both public and private, with an interest in the policies of and actions undertaken by the Department of Conservation in relation to public conservation land and waters and species management. (Conservation General Policy 2005)

Personal mobility device: A device designed to transport one person, that is propelled by hand or a propulsion system with a maximum speed of 15 km per hour, and is ridden by a disabled person. (Conservation General Policy 2005)

Pest: Any organism, including an animal, plant, pathogen or disease, capable or potentially capable of causing unwanted harm or posing significant risks to indigenous species, habitats and ecosystems or freshwater fisheries. (Conservation General Policy 2005)

Pounamu: New Zealand greenstone, as defined in the Ngāi Tahu (Pounamu Vesting) Act 1997. (Conservation General Policy 2005)

Preservation: In relation to a resource, means the maintenance, so far as is practicable, of its intrinsic values (section 2, Conservation Act 1987). (Conservation General Policy 2005)

Private accommodation: Place to live or lodge which is not available to the general public on an open basis. (Conservation General Policy 2005)

Protected Natural Areas Programme (PNAP): A programme established to identify (via survey) and recommend for protection areas that best represent the range of indigenous biological and landscape features in New Zealand, and thus maintain the distinctive character of New Zealand.

Protection: In relation to a resource, means its maintenance, so far as is practicable, in its current state; but includes:

- (a) its restoration to some former state; and
 - (b) its augmentation, enhancement, or expansion (section 2, Conservation Act 1987).
- (Conservation General Policy 2005)

Public conservation lands and waters: Lands and water areas administered by the Department of Conservation for whatever purpose, including the natural and historic resources of those areas covered by this General Policy. Reserves administered by other agencies are not included in this definition. (Conservation General Policy 2005)

Recreation reserve: Has the meaning given to that term in section 17 of the Reserves Act 1977 (see Appendix 1).

Restoration: The active intervention and management of modified or degraded habitats, ecosystems, landforms and landscapes in order to restore indigenous natural character, ecological and physical processes and their cultural and visual qualities; or for historic heritage, to return a place as nearly as possible to a known earlier state. (Conservation General Policy 2005)

Road: A road that is formed and maintained for vehicle use by the public in accordance with the public access provisions identified in section 4.8.3: Public Access. It does not include a farm track maintained by the Lessee or an access track maintained by Transpower. Legal roads (formed and unformed) are not part of Molesworth Recreation Reserve (see section 1.3.2: *Legal designation*).

Run: See Station.

Site: A defined area within a wider place. (Conservation General Policy 2005)

Species: A group of organisms which has evolved distinct common inheritable features and occupies a particular geographical range, and which is capable of interbreeding freely but not with members of other species. (Conservation General Policy 2005)

Sports fish: Every species of freshwater fish that the Governor-General may declare to be sports fish for the purposes of the Conservation Act 1987; examples are trout and salmon. (Conservation General Policy 2005)

Station: A large high country farm. Also called a run. Molesworth is a station.

Stock units: The Lessee may run 60 000 stock units on Molesworth. This equates to approximately 12 000 head of cattle in a high country herd. Landcorp currently (2013) farm approximately 9000–10 000 cattle on Molesworth.

Store cattle: Cattle which are sold to other farmers who will finish (fatten) them prior to processing.

Tangata whenua: Iwi or hapū that has customary authority in a place. (Conservation General Policy 2005)

Taonga: Valued resources or prized possessions held by Māori, both material and non-material. It is a broad concept that includes tangible and intangible aspects of natural and historic resources of significance to Māori, including wāhi tapu and intellectual property. (Conservation General Policy 2005)

Te Tau Ihu: A collective of northern South Island iwi and hapū. The eight recognised iwi are Ngāti Apa, Ngāti Koata, Ngāti Kuia, Ngāti Rārua, Ngāti Tama, Ngāti Toa Rangatira, Te Atiawa, and Rangitāne.

Te Rūnanga o Kaikōura: Te Rūnanga o Kaikōura is the papatipu rūnanga of Ngāi Tahu for the area that Molesworth is located within.

Te Rūnanga o Ngāi Tahu: The Ngāi Tahu tribal council. The 18 Papatipu Rūnanga each have a member elected on to the tribal council. Te Rūnanga o Ngāi Tahu is recognised in legislation as a corporate body with the authority to act of behalf of Ngāi Tahu.

The Crown: Her Majesty the Queen acting through ministers and departments of state. (Conservation General Policy 2005)

Threatened (species): Taxa that are facing imminent extinction. There are three main categories for 'threatened' species: Nationally Critical; Nationally Endangered; and Nationally Vulnerable. Species threat classification systems are currently under review.

Tikanga: Māori custom, obligations and conditions. (Conservation General Policy 2005)

Unformed legal roads: See Road.

Utilities: Includes but not limited to: structures and infrastructure for telecommunications; energy generation and transmission; sewerage; water supply and flood control; oil and gas; roads and airstrips; hydrological and weather stations. (Conservation General Policy 2005)

Vehicle: Means any device that is powered by any propulsion system and moves on rollers, skids, tracks, wheels, or other means; and includes any device referred to previously from which

the propulsion system has been removed; or the rollers, skids, tracks, wheels, or other means of movement have been removed; and does not include:

- (a) a pushchair or pram;
- (b) a child's toy;
- (c) a personal mobility device used by a disabled person. (Conservation General Policy 2005)

Viability: The ability of an activity (e.g. farming) or thing (e.g. species) to persist over time. (Conservation General Policy 2005)

Wāhi tapu: Place sacred to Māori in the traditional, spiritual, religious, ritual or mythological sense (Historic Places Act 1993). (Conservation General Policy 2005)

Weed: Plant pest (see Pest).

Wetlands: Permanent or intermittently wet areas, shallow water or land-water margins. They include swamps, bogs, estuaries, braided rivers and lake margins. (Conservation General Policy 2005)

Wild animal: Has the meaning set out in the Wild Animal Control Act 1977 and includes: possums, deer, wallabies, thar, wild goats, wild pigs and chamois (section 2, Wild Animal Control Act 1977). (Conservation General Policy 2005)

Wildlife: Any animal (as defined as in the Wildlife Act 1953) that is living in a wild state; and includes any such animal or egg or offspring of any such animal held or hatched or born in captivity, whether pursuant to an authority granted under the Wildlife Act 1953 or otherwise; but does not include wild animals subject to the Wild Animal Control Act 1977 (section 2, Wildlife Act 1953). (Conservation General Policy 2005)

Appendix 1

Reserves Act 1977 provisions

3 General purpose of this Act

- (1) It is hereby declared that, subject to the control of the Minister, this Act shall be administered in the Department of Conservation for the purpose of—
 - (a) providing, for the preservation and management for the benefit and enjoyment of the public, areas of New Zealand possessing—
 - (i) recreational use or potential, whether active or passive; or
 - (ii) wildlife; or
 - (iii) indigenous flora or fauna; or
 - (iv) environmental and landscape amenity or interest; or
 - (v) natural, scenic, historic, cultural, archaeological, biological, geological, scientific, educational, community, or other special features or value:
 - (b) ensuring, as far as possible, the survival of all indigenous species of flora and fauna, both rare and commonplace, in their natural communities and habitats, and the preservation of representative samples of all classes of natural ecosystems and landscape which in the aggregate originally gave New Zealand its own recognisable character:
 - (c) ensuring, as far as possible, the preservation of access for the public to and along the sea coast, its bays and inlets and offshore islands, lakeshores, and riverbanks, and fostering and promoting the preservation of the natural character of the coastal environment and of the margins of lakes and rivers and the protection of them from unnecessary subdivision and development.
- (2) In the exercise of its administration of this Act, the Department may take any action approved or directed from time to time by the Minister so far as it is consistent with this Act or is provided for in any other Act and is not inconsistent with this Act.

17 Recreation reserves

- (1) It is hereby declared that the appropriate provisions of this Act shall have effect, in relation to reserves classified as recreation reserves, for the purpose of providing areas for the recreation and sporting activities and the physical welfare and enjoyment of the public, and for the protection of the natural environment and beauty of the countryside, with emphasis on the retention of open spaces and on outdoor recreational activities, including recreational tracks in the countryside.
- (2) It is hereby further declared that, having regard to the general purposes specified in subsection (1), every recreation reserve shall be so administered under the appropriate provisions of this Act that—
 - (a) the public shall have freedom of entry and access to the reserve, subject to the specific powers conferred on the administering body by sections 53 and 54, to any bylaws under this Act applying to the reserve, and to such conditions and restrictions as the administering body considers to be necessary for the protection and general well-being of the reserve and for the protection and control of the public using it:
 - (b) where scenic, historic, archaeological, biological, geological, or other scientific features or indigenous flora or fauna or wildlife are present on the reserve, those features or

that flora or fauna or wildlife shall be managed and protected to the extent compatible with the principal or primary purpose of the reserve; provided that nothing in this subsection shall authorise the doing of anything with respect to fauna that would contravene any provision of the Wildlife Act 1953 or any regulations or Proclamation or notification under that Act, or the doing of anything with respect to archaeological features in any reserve that would contravene any provision of the Historic Places Act 1993:

- (c) those qualities of the reserve which contribute to the pleasantness, harmony, and cohesion of the natural environment and to the better use and enjoyment of the reserve shall be conserved:
- (d) to the extent compatible with the principal or primary purpose of the reserve, its value as a soil, water, and forest conservation area shall be maintained.

Appendix 2

Recorded historic places on Molesworth

(as at June 2013)

Historic precincts, sites, buildings and artefacts are shown on Map 5.

	PRECINCT	HISTORIC SITE/ARTEFACT	SITE TYPE	LOCATION
1	Molesworth Homestead historic precinct*	Molesworth Homestead (registered with NZHPT, category II)	Buildings	Molesworth Homestead complex
		Molesworth Woolshed (registered with NZHPT, category II)		
		Ministerial Cottage		
		Cart	Artefacts	
		Farm Machinery		
		Water Race	Archaeological site	
2	Molesworth Cob Cottage historic precinct	Molesworth Cob Cottage (registered with NZHPT, category II)	Building	Awatere entrance to Molesworth
		Cob Ruins	Archaeological site	
		Old willows, poplars and cork elms	Trees	
3	'Kerrytown' Rabbiters Camp historic precinct	Acheron Hut	Building	Isolated Flat
		Rabbiters Plough	Artefact	
		Fireplace	Archaeological site	
		Fence	Structure	
4	Red Gate historic precinct	Red Gate Hut	Building	Red Gate
		Fingerpost (sign post)	Structure	
		Augarde Grave	Grave	
5	Tarndale Homestead historic precinct	Tarndale Homestead Farriers shop, bunkhouse and other buildings	Buildings	Tarndale
		Cob/iron Hut		
		Woolshed Site	Archaeological site	
6	Acheron Accommodation House historic precinct	Acheron Accommodation House (registered with NZHPT, category II)	Buildings	Acheron–Clarence confluence
		Barn		
		Cob Ruin	Archaeological sites	
		Water Race		
		Orchard	Trees	
7		Boiler	Artefact	Awatere River
8		Cultivator	Artefact	Foot of Mt Chisholm
9		Grader	Artefact	Molesworth Homestead
10		Saxton Pass Dray Road	Track	Molesworth Stream
11		Rabbit-proof Fence	Fence	Molesworth Stream
12		Hut Site	Archaeological site	Molesworth Stream
13		Rabbit-proof Fence	Fence	Saxton Pass/ Mt Chisholm
14		Barefell Pass Pack Track	Track	Barefell Pass
15		Camp	Archaeological site	Awatere headwaters
16		Hut Site	Archaeological site	Awatere River
17		Camp	Archaeological site	Awatere River

	PRECINCT	HISTORIC SITE/ARTEFACT	SITE TYPE	LOCATION
18		Fence and Holding paddock	Fence	Mt Chisholm
19		Tone/Two Mile Saddle track*	Track	Tone Saddle
20		Robinson Saddle Track*	Track	Robinson Saddle
21		Old Lake McRae Hut	Building	Lake McRae
22		Lake McRae Sheep Fence	Fence	Lake McRae
23		Lake McRae Yards	Fence	Lake McRae
24		Half Moon Hut	Building	Half Moon Stream
25		Acheron Dray Road	Track	Acheron River
26		Old Electric Fence	Fence	Acheron River
27		Elliott Hut*	Building	Elliott River
28		Rabbit Plough	Artefact	Isolated Flat
29		Camp	Archaeological site	Acheron River
30		Guide Stables	Building	Acheron–Guide confluence
31		Camp	Archaeological site	Acheron–Guide confluence
32		Swing Bridge Abutments	Archaeological site	Acheron–Guide confluence
33		NZED Suspension Bridge (Pig Trough Gully)	Structure	Acheron River
34		NZED Suspension Bridge Abutments	Archaeological site	Acheron River
35		Moa Bone Deposit	Natural site	Camp Stream
36		Lower Acheron Stock Bridge	Structure	Acheron River
37		Woolshed Flat Woolshed Site	Archaeological site	Woolshed Flat
38		Cob Ruin	Archaeological site	Woolshed Flat
39		Sheep Dip	Archaeological site	Woolshed Flat
40		Stock Track	Track	Clarence River
41		Clarence Stock Bridge abutments	Archaeological site	Clarence River
42		Clarence NZED Suspension Bridge Abutments	Archaeological site	Clarence River
43		Five Mile Hut Site	Archaeological site	Five Mile Stream
44		Yarra Hut Cob Ruin	Archaeological site	Yarra Stream
45		Yarra Hut	Building	Yarra Stream
46		Alma Hut Site	Archaeological site	Alma River
47		Cow Stream Hut Site	Archaeological site	Cow Stream
48		Saxton Hut Site	Archaeological site	Lower Saxton River
49		Team Hut	Building	Saxton River
50		Saxton's Tarndale House Site	Archaeological site	Travellers valley
51		First Tarndale Accommodation House Site	Archaeological site (N30/2)	Horse Gully
52		Cairn	Archaeological site	Horse Gully
53		Fingerpost (sign post)	Structure	Sedgemere (Fish Lake)
54		Upper Wairau/Travellers Valley Pack Track	Track	Sedgemere
55		Island Pass Pack Track	Track	Island Gully/ Island Pass

Key

* Places requiring further assessment

Notes

1. Bush Gully complex has not been assessed.
2. Severn and Dillon catchments and the Clarence catchment below Woolshed Flat have not been assessed.
3. NZED component has generally not been assessed

Appendix 3

Indigenous and introduced species known to occur on Molesworth

This list of plant and animal species represents the best available information at the time of Plan approval. The focus has been inclusion of indigenous species known to occur on Molesworth. Further survey work is likely to identify species additional to those listed.

Key

*	=	introduced species
#	=	no actual records from Molesworth but within the natural range of the species so likely to occur
aff.	=	has affinities to
agg.	=	an aggregate of species
sp.	=	species
ss.	=	in the strict sense
subsp.	=	subspecies
var.	=	variety
' '	=	tag name
×	=	hybrid between two species
↔	=	an intergrade between species

Plant species

Conifers

- Halocarpus bidwillii* (bog pine)
- Halocarpus biformis* (pink pine)
- Larix decidua* (larch)*
- Larix kaempferi* (Japanese larch)*
- Phyllocladus alpinus* (toatoa, mountain toatoa, celery pine)
- Pinus contorta* (lodgepole pine)*
- Pinus nigra* (Corsican pine)*
- Pinus ponderosa* (Ponderosa pine)*
- Pinus radiata* (radiata pine)*
- Pinus silvestris* (Scots pine)*
- Podocarpus cunninghamii* (tōtara kōtukutuku, thin-barked tōtara)
- Podocarpus cunninghamii* × *P. nivalis*
- Podocarpus nivalis* (snow tōtara)

Trees and shrubs

- Acrothamnus colensoi*
- Androstoma empetrifolia*
- Aristotelia fruticosa* (mountain wineberry)
- Brachyglottis bidwillii* var. *viridis*
- Brachyglottis cassinioides*
- Brachyglottis greyi* var. 'laxifolia'
- Brachyglottis monroi*
- Carmichaelia australis* var. *ovata* (tarangahape, native broom)
- Carmichaelia corrugata*
- Carmichaelia juncea*
- Carmichaelia kirkii* (climbing broom)
- Carmichaelia monroi* (mat broom)
- Carmichaelia nana*
- Coprosma acerosa* var. *brunnea* (tarakupenga)

<i>Coprosma atropurpurea</i>	<i>Gaultheria crassa</i> × <i>G. depressa</i> var. <i>novae-zelandiae</i>
<i>Coprosma cheesemanii</i>	
<i>Coprosma depressa</i>	<i>Gaultheria depressa</i> var. <i>depressa</i> (koropuka, snowberry)
<i>Coprosma dumosa</i>	<i>Gaultheria macrostigma</i>
<i>Coprosma fowerakeri</i>	<i>Gaultheria macrostigma</i> × <i>G. depressa</i> var. <i>novae-zelandiae</i>
<i>Coprosma intertexta</i>	
<i>Coprosma linariifolia</i> (yellowwood)	<i>Gaultheria depressa</i> var. <i>novae-zelandiae</i> (koropuka, snowberry)
<i>Coprosma microcarpa</i>	
<i>Coprosma niphophila</i>	<i>Gaultheria nubicola</i>
<i>Coprosma perpusilla</i> subsp. <i>perpusilla</i>	<i>Griselinia littoralis</i> (kāpuka, broadleaf)
<i>Coprosma petriei</i>	<i>Hebe anomala</i>
<i>Coprosma propinqua</i> (mingimingi)	<i>Hebe canterburiensis</i>
<i>Coprosma pseudociliata</i>	<i>Hebe crenulata</i>
<i>Coprosma pseudocuneata</i>	<i>Hebe cryptomorpha</i>
<i>Coprosma rhamnoides</i>	<i>Hebe decumbens</i>
<i>Coprosma rigida</i>	<i>Hebe epacridea</i>
<i>Coprosma serrulata</i>	<i>Hebe glaucophylla</i>
<i>Coriaria angustissima</i> (tutu heuheu)	<i>Hebe hectorii</i> subsp. <i>coarctata</i> (a whipcord)
<i>Coriaria arborea</i> (tutu)	<i>Hebe lycopodioides</i>
<i>Coriaria plumosa</i> (tutu heuheu, feathery tutu)	<i>Hebe macrantha</i> var. <i>brachyphylla</i>
<i>Coriaria plumosa</i> × <i>C. sarmentosa</i>	<i>Hebe macrocalyx</i> var. <i>humilis</i>
<i>Coriaria sarmentosa</i> (shrub tutu)	<i>Hebe odora</i>
<i>Corokia cotoneaster</i> (korokio)	<i>Hebe pauciramosa</i>
<i>Cytisus scoparius</i> (broom)*	<i>Hebe pimeleoides</i> subsp. <i>pimeleoides</i>
<i>Discaria toumatou</i> (tūmatakuru, matagouri)	<i>Hebe pinguifolia</i>
<i>Dracophyllum filifolium</i> (inaka)	<i>Hebe rakaiensis</i>
<i>Dracophyllum filifolium</i> ×	<i>Hebe ramosissima</i>
<i>D. rosmarinifolium</i>	<i>Hebe rupicola</i>
<i>Dracophyllum pronum</i> (prostrate inaka)	<i>Hebe salicifolia</i> (koromiko)
<i>Dracophyllum pronum</i> × <i>D. rosmarinifolium</i>	<i>Hebe salicornioides</i>
<i>Dracophyllum rosmarinifolium</i> (mountain inaka)	<i>Hebe stenophylla</i> var. <i>stenophylla</i>
<i>Exocarpos bidwillii</i> (mountain sandalwood)	<i>Hebe subalpina</i>
<i>Gaultheria antipoda</i> (tāwiniwini)	<i>Hebe traversii</i>
<i>Gaultheria crassa</i>	<i>Hebe venustula</i>
<i>Gaultheria crassa</i> ×	<i>Hebe vernicosa</i>
<i>G. macrostigma</i>	<i>Helichrysum lanceolatum</i> (niniao)
	<i>Helichrysum coralloides</i> (coral daisy)

<i>Helichrysum coralloides</i> × <i>H. intermedium</i>	<i>Ozothamnus vauvilliersii</i> (mountain tauhinu)
<i>Helichrysum coralloides</i> × <i>H. parvifolium</i>	<i>Pachystegia</i> 'B' (a Marlborough rock daisy)
<i>Helichrysum depressum</i> (sticks)	<i>Pentachondra pumila</i>
<i>Helichrysum depressum</i> × <i>H. parvifolium</i>	<i>Peraxilla tetrapetala</i> (pikirangi, red mountain mistletoe)
<i>Helichrysum intermedium</i>	<i>Pimelea concinna</i>
<i>Helichrysum parvifolium</i>	<i>Pimelea oreophila</i> subsp. <i>hetera</i>
<i>Heliohebe acuta</i>	<i>Pimelea sericeovillosa</i>
<i>Heliohebe pentasepala</i>	<i>Pimelea traversii</i> subsp. <i>traversii</i>
<i>Heliohebe raoulii</i> subsp. <i>raoulii</i>	<i>Pittosporum anomalum</i>
<i>Hoheria lyallii</i> (houhi, mountain ribbonwood)	<i>Pittosporum divaricatum</i>
<i>Kunzea ericoides</i> (kānuka)	<i>Pittosporum patulum</i>
<i>Leonohebe cheesemanii</i>	<i>Pittosporum tenuifolium</i> (rautāwhiri, kōhūhū)
<i>Leonohebe ciliolata</i>	<i>Pseudopanax 'ternatus'</i> (orihou, mountain three finger)
<i>Leonohebe cupressoides</i>	<i>Ribes uva-crispa</i> (gooseberry) *
<i>Leonohebe tumida</i>	<i>Rosa rubiginosa</i> (briar, mihinare)*
<i>Leptecophylla juniperina</i> (prickly mingimingi)	<i>Salix fragilis</i> (crack willow)*
<i>Leptospermum scoparium</i> (mānuka, kahikātoa)	<i>Sambucus nigra</i> (elder)*
<i>Leucopogon fraseri</i> (pātōtara)	<i>Sophora prostrata</i> (prostrate kōwhai)
<i>Leucopogon nanum</i>	<i>Sorbus aucuparia</i> (rowan)*
<i>Melicytus</i> aff. <i>alpinus</i> (fine, narrow lvs)	<i>Traversia baccharoides</i>
<i>Melicytus</i> aff. <i>crassifolius</i> var. 'erect'	<i>Tupeia antarctica</i> (pirita, a mistletoe)
<i>Melicytus alpinus</i> ss. (porcupine shrub)	<i>Ulex europaeus</i> (gorse)*
<i>Myrsine divaricata</i> (weeping māpou)	<i>Ulmus thomasi</i> (cork elm)
<i>Myrsine nummularia</i> (creeping māpou)	
<i>Nothofagus menziesii</i> (tawhai, silver beech)	Lianes and trailing plants
<i>Nothofagus solandri</i> var. <i>cliffortioides</i> (wawhairauriki, mountain beech)	<i>Clematis afoliata</i> (leafless clematis)
<i>Olearia arborescens</i>	<i>Clematis forsteri</i> (pataua)
<i>Olearia avicenniifolia</i> (akeake)	<i>Clematis marata</i>
<i>Olearia cymbifolia</i>	<i>Clematis paniculata</i> (puawānanga, bush clematis)
<i>Olearia cymbifolia</i> × <i>O. paniculata</i>	<i>Clematis petrei</i>
<i>Olearia nummulariifolia</i>	<i>Clematis quadribacteolata</i>
<i>Olearia odorata</i>	<i>Convolvulus fractosaxosa</i>
<i>Olearia paniculata</i> (akiraho)	<i>Muehlenbeckia axillaris</i> (creeping pōhuehue)
<i>Ozothamnus 'albida'</i>	<i>Muehlenbeckia axillaris</i> × <i>M. ephedroides</i>
<i>Ozothamnus leptophyllus</i> (tauhinu)	<i>Muehlenbeckia complexa</i> agg. (pōhuehue)
<i>Ozothamnus leptophyllus</i> × <i>O. vauvilliersii</i>	<i>Muehlenbeckia ephedroides</i>

Parsonsia capsularis (aka kiore, native jasmine)

Rubus schmidelioides var. *subpauperatus* (bush lawyer, tataramoa)

Clubmosses and quillworts

Huperzia australiana (fir clubmoss)

Huperzia varia (iwituna, hanging clubmoss)

Isoetes kirkii (quillwort)

Lycopodium fastigiatum (mountain clubmoss)

Lycopodium scariosum (creeping clubmoss)

Ferns

Asplenium flabellifolium agg. (necklace fern)

Asplenium flaccidum (makawe, hanging spleenwort)

Asplenium richardii (matuakaponga)

Asplenium trichomanes agg. (maidenhair spleenwort)

Azolla filiculoides

Blechnum chambersii (rereti)

Blechnum minus (swamp kiokio)

Blechnum montanum (mountain kiokio)

Blechnum penna-marina (little hard fern)

Botrychium australe (pānako, parsley fern)

Cheilanthes sieberi (rock fern)

Cystopteris tasmanica (bladder fern)

Dryopteris filix-mas (male fern)*

Grammitis billardierei

Grammitis patagonica

Grammitis poeppigiana

Histiopteris incisa (water fern)

Hymenophyllum multifidum (a filmy fern)

Hymenophyllum villosum (a filmy fern)

Hypolepis millefolium (thousand-leaved fern)

Ophioglossum coriaceum agg. (adder's tongue)

Pellaea calidirupium (hot rock fern)

Pilularia novae-hollandiae (pillwort)

Polystichum cystostegia (mountain shield fern)

Polystichum vestitum (pūniu, prickly shield fern)

Pteridium esculentum (rārahu, bracken)

Orchids

Aporostylis bifolia

Caladenia lyallii

Gastrodia cunninghamii (hūpereī, potato orchid)

Hymenochilus tanypodus

Hymenochilus tristis (a greenhood orchid)

Microtis unifolia (onion orchid)

Nematoceras rivulare (a spider orchid)

Nematoceras trilobum (a spider orchid)

Prasophyllum colensoi

Pterostylis australis (a greenhood orchid)

Thelymitra formosa (a sun orchid)

Thelymitra longifolia (maikuku, a sun orchid)

Grasses

Agrostis aff. *dyeri* (spreading panicle)

Agrostis capillaris (browntop)*

Agrostis muelleriana

Agrostis muscosa

Agrostis pallescens

Agrostis stolonifera (creeping bent)*

Aira caryophyllea (silvery hairgrass)*

Alopecurus geniculatus (kneed foxtail)*

Anthosachne aff. *solandri* 'channel' (tūtaekurī, a wheatgrass)

Anthosachne solandri (tūtaekurī, blue wheatgrass)

Anthoxanthum odoratum (sweet vernal)*

Arrhenatherum elatius (tall oat grass)*

Avena fatua (wild oat)*

Bromus diandrus (rippgut brome)*

Bromus hordeaceus (soft brome)*

*Bromus tectorum**

Chionochloa australis (wīkura, carpet grass)

Chionochloa australis × *C. macra*

Chionochloa australis × *C. pallens*

Chionochloa flavescens subsp. *brevis* (haumata, broadleaved snow tussock)

Chionochloa flavescens × *C. macra*

Chionochloa flavescens × *C. rubra*
Chionochloa macra (slim snow tussock)
Chionochloa macra × *C. pallens*
Chionochloa oreophila (snow bank grass)
Chionochloa pallens subsp. *pilosa* (midribbed snow tussock)
Chionochloa rubra subsp. *rubra* (red tussock)
Connorochloa tenuis
Cynosurus cristatus (crested dogstail)*
Dactylis glomerata (cocksfoot)*
Deschampsia novae-zelandiae
Deyeuxia aucklandica
Deyeuxia avenoides
Deyeuxia lacustris
Dichelachne crinita (pātītī, plume grass)
Festuca aff. *rubra*
Festuca matthewsii (alpine fescue)
Festuca novae-zelandiae (hard tussock)
Festuca rubra (Chewings fescue)*
Glyceria declinata (floating sweet grass)*
Hierochloa equisetata
Hierochloa novae-zelandiae
Hierochloa redolens
Holcus lanatus (Yorkshire fog)*
Koeleria cheesemanii
Koeleria novozelandica (broad lf, tufted)
Koeleria riguorum (slender lf, creeping)
Lachnagrostis lyallii
Lachnagrostis sp.
Lachnagrostis striata
Lolium perenne (perennial ryegrass)*
Microlaena avenacea (bush rice grass)
Phleum pratense (timothy)*
*Poa annua**
Poa breviglumis
Poa buchananii
Poa cita (wī, silver tussock)
Poa cockayneana (avalanche grass)
Poa colensoi (blue tussock)
Poa dipsacea
Poa imbecilla
Poa kirkii
Poa lindsayi
Poa novae-zelandiae
*Poa palustris**
*Poa pratensis**
Poa subvestita (meadow grass)
*Poa trivialis**
Rytidosperma australe
Rytidosperma buchananii agg.
Rytidosperma clavatum
Rytidosperma gracile (danthonia)
Rytidosperma merum
Rytidosperma nigricans
Rytidosperma pumilum
Rytidosperma setifolium (bristle tussock)
Rytidosperma thomsonii agg.
Schedonorus arundinacea (tall fescue)*
Stenostachys enysii (was *Elymus enysii*)
Stenostachys gracilis
Trisetum lepidum
Trisetum spicatum
Trisetum tenellum
Trisetum youngii
Vulpia bromoides (vulpia hairgrass)*

Sedges

Carex acicularis
Carex aff. *testacea* (red lvs, utricle not scabrid)
Carex berggrenii
Carex breviculmis
Carex buchananii
Carex carsei
Carex colensoi
Carex comans (maurea)
Carex coriacea (cutty grass, toetoe rautahi)

Carex diandra (makura)
*Carex divisa**
Carex echinata var. 'australis' (star sedge)
Carex enysii
Carex flagellifera (mānia)
Carex flaviformis (yellow sedge)
Carex gaudichaudiana
Carex kaloides
Carex muelleri
*Carex muricata**
Carex ovalis (oval sedge)*
Carex petriei
Carex pyrenaica var. *cephalotes*
Carex resectans
Carex secta (pūkio)
Carex sinclairii
Carex tenuiculmis
Carex wakatipu ss.
Carpha alpina (plume sedge)
Eleocharis acuta (spike rush)
Eleocharis gracilis
Eleocharis pusilla
Isolepis aucklandica
Isolepis basilaris
Isolepis caligenis
Isolepis habra agg.
Isolepis subtilissima
Oreobolus pectinatus (comb sedge)
Oreobolus strictus
Schoenus pauciflorus (red sedge)
Uncinia clavata (matau, a hookgrass)
Uncinia divaricata (matau, a hookgrass)
Uncinia fuscovaginata (matau, a hookgrass)
Uncinia nervosa (matau, a hookgrass))
Uncinia purpurata (matau, a hookgrass)
Uncinia rubra (matau, a hookgrass)

Rushes and allied plants

Centrolepis ciliata
Empodisma minus agg. (wire rush)
Juncus antarcticus
Juncus articulatus (jointed rush)*
Juncus bufonius (toad rush)*
Juncus bulbosus (bulbous rush)*
*Juncus conglomeratus**
Juncus edgariae
Juncus effusus (soft rush)*
Juncus novae-zelandiae (dwarf rush)
Juncus pusillus
Juncus squarrosus (heath rush)*
Juncus tenuis (track rush)*
Luzula celata
Luzula aff. *rufa* (rhizomatous)
Luzula 'albicomans'
Luzula colensoi
Luzula crinita
Luzula leptophylla
Luzula 'limosa'
Luzula migrata
Luzula picta (woodrush)
Luzula pumila
Luzula rufa
Luzula subclavata
Luzula traversii
Luzula 'Wairau'
Marsippospermum gracile (alpine rush)

Other monocot herbs

Astelia nervosa (kakaha)
Astelia petriei
Bulbinella hookeri (Māori onion)
Elodea canadensis (oxygen weed)*
Lemna minor agg. (duckweed)
Phormium cookianum (wharariki, mountain flax)

Potamogeton cheesemanii (mānihi, red pondweed)

Potamogeton ochreatus

Potamogeton suboblongus

Triglochin palustris

Typha orientalis (raupō)

Composite herbs

Abrotanella caespitosa

Achillea millefolium (yarrow)*

Anaphalioides bellidioides (everlasting daisy)

Argyrotegium mackayi (a cudweed)

Argyrotegium nitidulum (a cudweed)

Brachyglottis bellidioides

Brachyglottis haastii

Brachyglottis lagopus

Brachyscome radicata (ronui)

Brachyscome sinclairii

Celmisia allanii (a mountain daisy)

Celmisia alpina (a mountain daisy)

Celmisia bellidioides (a mountain daisy)

Celmisia cockayneana (a mountain daisy)

Celmisia discolor

Celmisia du-rietzii

Celmisia gracilentia (pekapeka, a mountain daisy)

Celmisia haastii (a mountain daisy)

Celmisia incana (a mountain daisy)

Celmisia laricifolia (a mountain daisy)

Celmisia lateralis (a mountain daisy)

Celmisia monroi (tikumu, a mountain daisy)

Celmisia monroi × *C. spectabilis*

Celmisia monroi × *C. traversii*

Celmisia 'rhizomatous' (a mountain daisy)

Celmisia semicordata (tikitimu)

Celmisia sessiliflora (a mountain daisy)

Celmisia sessiliflora × *C. traversii*

Celmisia sinclairii (a mountain daisy)

Celmisia spectabilis (tikumu, cotton daisy)

Celmisia spectabilis × *C. traversii*

Celmisia traversii (a mountain daisy)

Celmisia viscosa (a mountain daisy)

Cirsium arvense (Californian thistle)*

Cirsium vulgare (Scotch thistle)*

Craspedia 'elongata' (puatea, a woollyhead)

Craspedia incana (white woollyhead)

Craspedia lanata (grey woollyhead)

Craspedia 'Leatham'

Craspedia 'long hairs' (puatea, a woollyhead)

Craspedia 'short hairs' (puatea, a woollyhead)

Craspedia 'tarn' (puatea, a woollyhead)

Craspedia uniflora

Craspedia 'white margin' (puatea, a woollyhead)

Craspedia × 'tarn margin' (puatea, a woollyhead)

Crepis capillaris (hawksbeard)*

Dolichoglottis lyallii (yellow snow marguerite)

Dolichoglottis scorzonerooides (white snow marguerite)

Euchiton audax (a cudweed)

Euchiton lateralis (a cudweed)

Euchiton limosus (a cudweed)

Euchiton polylepis (a cudweed)

Euchiton sphaericus (a cudweed)

Euchiton traversii (a cudweed)

Ewartiothamnus sinclairii

Haastia 'minor'

Haastia pulvinaris (giant vegetable sheep)

Haastia recurva var. *recurva*

Haastia recurva var. *wallii*

Haastia sinclairii

Helichrysum filicaule

*Hieracium aurantiacum**

Hieracium caespitosum (field hawkweed)*

*Hieracium lepidulum**

*Hieracium murorum**

Hieracium pilosella (hawkweed, mouse-ear hawkweed)*
*Hieracium pollichiae**
*Hieracium praealtum**
Hypochoeris radicata (catsear)*
Lagenifera barkeri
Lagenifera cuneata
Lagenifera strangulata
Leptinella dendyi
Leptinella dendyi × *L. pyrethrifolia*
Leptinella dioica subsp. *dioica*
Leptinella filiformis
Leptinella pectinata subsp. *pectinata*
Leptinella pusilla
Leptinella pyrethrifolia agg.
Leptinella serrulata
Leptinella squalida subsp. *mediana*
Leucanthemum vulgare (oxeye daisy)*
Leucogenes grandiceps (South Island edelweiss)
Leucogenes grandiceps × *Raoulia bryoides*
Leucogenes neglecta (Marlborough edelweiss)
Microseris scapigera
Mycelis muralis (wall lettuce)*
Pseudognaphalium ephemereum
Pseudognaphalium luteoalbum agg. (pukatea)
Rachelia glaria (scree daisy)
Raoulia apicinigra
Raoulia australis agg. (scabweed)
Raoulia bryoides (vegetable sheep)
Raoulia cinerea
Raoulia eximia (vegetable sheep)
Raoulia glabra (a mat daisy)
Raoulia grandiflora (a mat daisy)
Raoulia hookeri (a mat daisy)
Raoulia monroi
Raoulia parkii (a mat daisy)
Raoulia sp. 'M' (a mat daisy)

Raoulia subsericea (a mat daisy)
Raoulia subulata (a cushion daisy)
Raoulia tenuicaulis (tutahuna)
Senecio glaucophyllus subsp. *toa*
Senecio jacobaea (ragwort)*
Senecio quadridentatus (pāhohoraka)
Senecio wairauensis
Sonchus asper (pūhā, prickly sow thistle)*
Sonchus oleraceus (rauriki, sow thistle)*
Taraxacum magellanicum (tohetaka, native dandelion)
Taraxacum officinale (tawao, dandelion)*
Vittadinia australis agg. (fuzzweed)

Dicot herbs other than composites

Acaena anserinifolia (piripiri, bidibid)
Acaena anserinifolia × *A. inermis*
Acaena caesiiglauca (piripiri, bidibid)
Acaena dumicola (piripiri, bidibid)
Acaena fissistipula (piripiri, bidibid)
Acaena glabra (piripiri, bidibid)
Acaena inermis (piripiri, bidibid)
Acaena juvenca (piripiri, bidibid)
Acaena profundeincisa (piripiri, bidibid)
Acaena saccaticupula (piripiri, bidibid)
Aciphylla aurea (golden speargrass)
Aciphylla colensoi (a speargrass)
Aciphylla glaucescens (giant speargrass)
Aciphylla monroi (dwarf speargrass)
Aciphylla 'St. Patrick' (a speargrass)
Aciphylla subflabellata (a speargrass)
Anagallis arvensis (scarlet pimpernel)*
Anisotome aromatica agg. (kopoti)
Anisotome filifolia
Anisotome flexuosa var. *flexuosa*
Anisotome haastii var. *haastii*
Anisotome pilifera
Anisotome 'prostrata'

<i>Aphanes arvensis</i> (parsley piert)*	<i>Echium vulgare</i> (viper's bugloss (false blue borage))*
<i>Arenaria serpyllifolia</i> (sandwort)*	<i>Einadia allanii</i> (poipapa)
<i>Callitriche petriei</i> subsp. <i>petriei</i>	<i>Elatine gratioloides</i>
<i>Callitriche stagnalis</i> (starwort)*	<i>Epilobium alsinoides</i> (a willowherb)
<i>Cardamine bilobata</i> (panapana, a bittercress)	<i>Epilobium angustum</i> (a willowherb)
<i>Cardamine corymbosa</i> (panapana, a bittercress)	<i>Epilobium atriplicifolium</i> (a willowherb)
<i>Cardamine</i> 'narrow petal' (panapana, a bittercress)	<i>Epilobium brevipes</i> (a willowherb)
<i>Cardamine</i> 'scree race' (panapana, a bittercress)	<i>Epilobium brunnescens</i> (a willowherb)
<i>Cardamine</i> 'tarn'	<i>Epilobium chionanthum</i> (a willowherb)
<i>Centaurium erythraea</i> (centaury)*	<i>Epilobium chlorifolium</i> (a willowherb)
<i>Cerastium fontanum</i> subsp. <i>vulgare</i> (mouse-ear chickweed)*	<i>Epilobium ciliatum</i> (a willowherb)*
<i>Cerastium glomeratum</i> (annual mouse-ear chickweed)*	<i>Epilobium cinereum</i> (a willowherb)
<i>Chaerophyllum colensoi</i> agg.	<i>Epilobium cockayneanum</i> (a willowherb)
<i>Chaerophyllum colensoi</i> var. <i>delicatulum</i>	<i>Epilobium crassum</i> (a willowherb)
<i>Chaerophyllum ramosum</i>	<i>Epilobium elegans</i> (a willowherb)
<i>Chaerophyllum novae-zelandiae</i> agg.	<i>Epilobium forbesii</i> (a willowherb)
<i>Chenopodium detestans</i>	<i>Epilobium glabellum</i> (a willowherb)
<i>Chenopodium pumilio</i> *	<i>Epilobium hectorii</i> (a willowherb)
<i>Chenopodium pusillum</i>	<i>Epilobium hirtigerum</i> (a willowherb)
<i>Chionohebe pulvinaris</i>	<i>Epilobium insulare</i> (a willowherb)
<i>Colobanthus acicularis</i>	<i>Epilobium komarovianum</i> (a willowherb)
<i>Colobanthus apetalus</i>	<i>Epilobium krulleanum</i> (a willowherb)
<i>Colobanthus brevisepalus</i>	<i>Epilobium macropus</i> (a willowherb)
<i>Colobanthus buchananii</i>	<i>Epilobium melanocaulon</i> (a willowherb)
<i>Colobanthus strictus</i>	<i>Epilobium microphyllum</i> (papakōura, a willowherb)
<i>Conium maculatum</i> (hemlock)*	<i>Epilobium</i> 'minutiflorum' (a willowherb)
<i>Coronilla varia</i> (crown vetch)*	<i>Epilobium nerteroides</i> (a willowherb)
<i>Crassula multicaulis</i>	<i>Epilobium nummulariifolium</i> (a willowherb)
<i>Crassula sieberiana</i>	<i>Epilobium obscurum</i> (a willowherb)*
<i>Crassula sinclairii</i>	<i>Epilobium pernitens</i> (a willowherb)
<i>Daucus glochidiatus</i> (pīnaki, native carrot)	<i>Epilobium petraeum</i> (a willowherb)
<i>Dianthus armeria</i> (Deptford pink)*	<i>Epilobium pictum</i> (a willowherb)
<i>Dichondra repens</i> agg. (Mercury Bay weed)	<i>Epilobium porphyrium</i> (a willowherb)
<i>Digitalis purpurea</i> (foxglove)*	<i>Epilobium pubens</i> (a willowherb)
<i>Drosera arcturi</i> (wahu, sundew)	<i>Epilobium pycnostachyum</i> (scree willowherb)
	<i>Epilobium rostratum</i> (a willowherb)

<i>Epilobium tasmanicum</i> (a willowherb)	<i>Hydrocotyle microphylla</i> (a pennywort)
<i>Epilobium tenuipes</i> (a willowherb)	<i>Hydrocotyle</i> 'montana' (a pennywort)
<i>Erodium cicutarium</i> (cranesbill)*	<i>Hydrocotyle moschata</i> (a pennywort)
<i>Erophila verna</i> (whitlow grass)*	<i>Hydrocotyle</i> aff. <i>sulcata</i> (a pennywort)
<i>Euphrasia laingii</i> (an eyebright)	<i>Hypericum perforatum</i> (St. John's wort)*
<i>Euphrasia monroi</i> (an eyebright)	<i>Hypericum pusillum</i>
<i>Euphrasia revoluta</i> (an eyebright)	<i>Kelleria croizatii</i>
<i>Euphrasia townsonii</i> (an eyebright)	<i>Kelleria dieffenbachii</i>
<i>Euphrasia zelandica</i> (an eyebright)	<i>Kelleria laxa</i>
<i>Forstera purpurata</i>	<i>Kelleria villosa</i>
<i>Forstera tenella</i>	<i>Leptostigma setulosum</i>
<i>Galium aparine</i> (cleavers)*	<i>Lignocarpa carnosula</i>
<i>Galium perpusillum</i>	<i>Lignocarpa diversifolia</i>
<i>Galium propinquum</i> (māwe)	<i>Lilaeopsis ruthiana</i>
<i>Galium</i> 'lacustrine'	<i>Limosella lineata</i> agg.
<i>Gentianella bellidifolia</i>	<i>Linum catharticum</i> (purging flax)*
<i>Gentianella corymbifera</i>	<i>Linum monogynum</i> (rauhua)
<i>Gentianella grisebachii</i>	<i>Lobelia angulata</i> agg.
<i>Gentianella montana</i>	<i>Lobelia ionantha</i>
<i>Gentianella patula</i>	<i>Lobelia macrodon</i>
<i>Gentianella magnifica</i>	<i>Lobelia roughii</i> (scree lobelia)
<i>Geranium brevicaule</i>	<i>Lotus pedunculatus</i> (lotus)*
<i>Geranium microphyllum</i> 'mainland'	<i>Mazus radicans</i>
<i>Geranium molle</i> (dove's foot, crane's bill)*	<i>Medicago sativa</i> (lucerne)*
<i>Geum cockaynei</i> (alpine avens)	<i>Mentha cunninghamii</i> (hīoi, native mint)
<i>Gingidia decipiens</i>	<i>Mimulus guttatus</i> (monkey musk)*
<i>Gingidia montana</i> (naupiro, mountain aniseed)	<i>Mimulus moschatus</i> (musk)*
<i>Gingidia trifoliolata</i>	<i>Montia calycina</i>
<i>Glossostigma diandrum</i>	<i>Montia fontana</i> subsp. <i>fontana</i> (blinks)
<i>Glossostigma elatinooides</i>	<i>Montigena novae-zelandiae</i> (scree pea)
<i>Gonocarpus aggregatus</i>	<i>Myosotis arvensis</i> (field forget-me-not)*
<i>Gonocarpus micranthus</i> (piripiri)	<i>Myosotis australis</i> 'white' (a forget-me-not)
<i>Gonocarpus montanus</i>	<i>Myosotis australis</i> 'yellow' (a forget-me-not)
<i>Gunnera densiflora</i>	<i>Myosotis brevis</i> (a forget-me-not)
<i>Gunnera monoica</i>	<i>Myosotis discolor</i> (grassland forget-me-not)*
<i>Haloragis erecta</i> (toatoa)	<i>Myosotis drucei</i> (a forget-me-not)
<i>Hydrocotyle heteromeria</i> (a pennywort)	<i>Myosotis laingii</i> (a forget-me-not)

Myosotis laxa subsp. *caespitosa* (water forget-me-not)*
*Myosotis scorpioides**
Myosotis traversii (scree forget-me-not)
Myosurus minimus subsp. *novae-zelandiae*
Myriophyllum pedunculatum subsp. *novae-zelandiae*
Myriophyllum propinquum (a milfoil)
Myriophyllum triphyllum (a milfoil)
Myriophyllum votschii (a milfoil)
Navarretia squarrosa (Californian stinkweed)*
Nertera balfouriana
Nertera depressa
Notothlaspi rosulatum (penwiper)
Orobanche minor (broomrape)*
Ourisia caespitosa var. *caespitosa*
Ourisia glandulosa
Ourisia macrophylla subsp. *lactea*
Ourisia sessilifolia subsp. *sessilifolia*
Ourisia sessilifolia × *O. simpsonii*
Ourisia simpsonii
Oxalis exilis
Oxalis magellanica (Tūtaekāhu)
Oxalis ‘scree’ (scree oxalis)
Pachycladon cheesemanii
Pachycladon enysii
Pachycladon fastigiatum
Pachycladon stellatum
Parahebe cheesemanii
Parahebe decora
Parahebe decora × *P. lyallii*
Parahebe linifolia
Parahebe lyallii
Phyllachne clavigera
*Plantago australis**
Plantago lanceolata (narrow-leaved plantain)*
Plantago lanigera
Plantago novae-zelandiae
Plantago obconica
Plantago raoulii (kopakopa)
Plantago triandra
Plantago unibracteata
*Polygonum aviculare**
Potentilla anserinoides (kōwhai kura, silverweed)
Prunella vulgaris (selfheal)*
Psychrophila novae-zelandiae
Psychrophila obtusa
Ranunculus brevis (a buttercup)
Ranunculus cheesemanii (a buttercup)
Ranunculus crithmifolius (scree buttercup)
Ranunculus foliosus (a buttercup)
Ranunculus foliosus × *R. glabrifolius*
Ranunculus glabrifolius (a buttercup)
Ranunculus gracilipes (a buttercup)
Ranunculus gracilipes × *R. insignis*
Ranunculus haastii (scree buttercup)
Ranunculus insignis (korikori)
Ranunculus insignis × *R. verticillatus*
Ranunculus limosella (a buttercup)
Ranunculus ‘chloophilys’ (a buttercup)
Ranunculus reflexus (mārūrū, a buttercup)
Ranunculus sceleratus (a buttercup)*
Ranunculus trichophyllus (water buttercup)*
Ranunculus verticillatus (a buttercup)
Rumex acetosa (sheep’s sorrel)*
Rumex crispus (curled dock)*
Rumex flexuosus (runa, native dock)
Rumex obtusifolius (broad dock, paewhenua)*
Sagina procumbens (pearlwort)*
Schizeilema haastii
Schizeilema nitens
Schizeilema pallidum
Schizeilema roughii
Schizeilema trifoliolata
Scleranthus brockiei

Scleranthus uniflorus (kohukohu)
Stackhousia minima
Stellaria alsine (bog stitchwort)*
Stellaria decipiens
Stellaria gracilentia
Stellaria graminea (stitchwort)*
Stellaria roughii
Trifolium arvense (haresfoot trefoil)*
Trifolium dubium (suckling clover)*
Trifolium pratense (red clover)*
Trifolium repens (white clover)*
Urtica aspera (ongaonga)
Utricularia dichotoma (bladderwort)
Verbascum thapsus (woolly mullein)*
Verbascum virgatum (moth mullein)*
Veronica anagallis-aquatica (water speedwell)*
Veronica arvensis (field speedwell)*
Veronica serpyllifolia (turf speedwell)*
*Veronica verna**
Vicia sativa (vetch)*
*Viola arvensis**
Viola cunninghamii (haka, white violet)
Viola filicaulis
Viola lyallii
Wahlenbergia albomarginata subsp. *albomarginata* (harebell)
Wahlenbergia albomarginata subsp. *flexilis*
Wahlenbergia cartilaginea

Mosses¹

Polytrichum juniperinum (tetere whete)
Racomitrium lanuginosum (woolly moss)
Sphagnum cristatum (sphagnum)

Fauna species

Birds

Australasian bittern, matuku (*Botaurus poiciloptilus*)
Australasian harrier, kāhu (*Circus approximans*)
Australasian shoveler, kuruwhegi (*Anas rhynchotis*)
Australian magpie (*Gymnorhina tibicen*)*
Banded dotterel, pohowera (*Charadrius bicinctus bicinctus*)
Bellbird, kōparapara (*Anthornis melanura melanura*)
Black shag, kawau pū (*Phalacrocorax carbo novaehollandiae*)
Black swan (*Cygnus atratus*)*
Blackbird (*Turdus merula*)*
Black-billed gull (*Larus bulleri*)
Black-fronted tern, tara, tarapirohe (*Chlidonias albobstriata*)
Brown creeper, pī pipi (*Mohoua novaeseelandiae*)
California quail (*Callipepla californica brunnescens*)*
Canada goose (*Branta canadensis maxima*)*
Caspian tern, taranui (*Sterna caspia*)
Chaffinch (*Fringilla coelebs*)*
Chukar (*Alectoris chukar*)*
Goldfinch (*Carduelis carduelis*)*
Greenfinch (*Carduelis chloris*)*
Grey duck, pārera (*Anas superciliosa superciliosa*)
Grey warbler, riroriro (*Gerygone igata igata*)
Hedge sparrow, dunnoek (*Prunella modularis occidentalis*)*
Kākā (*Nestor meridionalis meridionalis*)
Kārearea, New Zealand falcon (*Falco novaeseelandiae*)
Kea (*Nestor notabilis*)
Mallard (*Anas platyrhynchos platyrhynchos*)*
New Zealand pipit, pīhoihoi (*Anthus novaeseelandiae novaeseelandiae*)

¹ Includes only those species that are dominant in some communities.

New Zealand scaup, pāpango (*Aythya novaeseelandiae*)

Paradise duck, pūtakitaki (*Tadorna variegata*)

Pied stilt, poaka (*Himantopus himantopus leucocephalus*)

Pūkeko, swamp hen (*Porphyrio melanotus melanotus*)

Red poll (*Carduelis flammea cabaret*)*

Shining cuckoo, pīpwharuroaī (*Chrysococcyx lucidus lucidus*)

Silvereye, tauhou (*Zosterops lateralis lateralis*)

Skylark (*Alauda arvensis arvensis*)*

Song thrush (*Turdus philomelos*)*

South Island fantail, pīwakawaka (*Rhipidura fuliginosa fuliginosa*)

South Island pied oystercatcher, tōrea (*Haematopus finschi*)

South Island rifleman, tītītipounamu (*Acanthisitta chloris chloris*)

South Island tomtit, miromiro (*Petroica macrocephala macrocephala*)

Southern black-backed gull, karoro (*Larus dominicanus dominicanus*)

Southern crested grebe, kāmana (*Podiceps cristatus australis*)

Spur-winged plover (*Vanellus miles novaehollandiae*)

Starling (*Sturnus vulgaris*)*

Welcome swallow (*Hirundo tahitica neoxena*)

White heron, kōtuku (*Ardea modesta*)

White-faced heron, matukumoana (*Ardea novaehollandiae novaehollandiae*)

Wrybill, ngutu pare (*Anarhynchus frontalis*)

Yellowhammer (*Emberiza citrinella*)*

Lizards

Common gecko, mokopāpā (*Woodworthia maculatus* 'maxi' agg. (3 spp.?.))

Common gecko (*Woodworthia maculatus* 'mini' agg. (2 spp.?.))

Common skink, mokomoko (*Oligosoma nigriplantare polychroma*)

Green-spotted skink (*Oligosoma lineo-ocellatum*)

Long-toed skink (*Oligosoma longipes*)

Scree skink (*Oligosoma waimatense*)

Fish

Alpine galaxias (*Galaxias paucispindylus*)

Brown trout (*Salmo trutta*)*

Chinook salmon (*Oncorhynchus tshawytscha*)*

Common bully (*Gobiomorphus cotidianus*)

Dwarf galaxias (*Galaxias divergens*)

Koaro (*Galaxias brevipinnis*)

Longfin eel/tuna (*Anguilla dieffenbachii*)

Northern flathead galaxias (*Galaxias* 'northern')

Shortfin eel/tuna (*Anguilla australis*)#

Tarndale bully (*Gobiomorphus alpinus*)

Torrentfish (*Cheimarrichthys fosteri*)#

Upland bully (*Gobiomorphus breviceps*)

Introduced mammals (domestic and feral)

Cat (*Felis catus*)

Cattle (*Bos taurus*)

Chamois (*Rupicapra rupicapra*)

Dog (*Canus familiaris*)

Ferret (*Mustela putorius*)

Goat (*Capra hircus*)

Hare (*Lepus europaeus*)

Hedgehog (*Erinaceus europaeus*)

Horse (*Equus ferus caballus*)

Mouse (*Mus musculus*)

Pig (*Sus scrofa*)

Possum (*Trichosurus vulpecula*)

Rabbit (*Oryctolagus cuniculus*)

Rat (*Rattus* spp.)

Red deer (*Cervus elaphus*)

Sheep (*Ovis aries*)

Stoat (*Mustela erminea*)

Weasel (*Mustela nivalis*)

Appendix 4

Responsibilities under the Ngāi Tahu Claims Settlement Act 1998

A description of key mechanisms identified in the Ngāi Tahu Claims Settlement Act 1998 and their relevance to Molesworth is provided below.

Tōpuni

There are no Tōpuni on Molesworth.

Deed of Recognition

There are no Deeds of Recognition on Molesworth.

Statutory Acknowledgement

There are no Statutory Acknowledgements on Molesworth.

Statutory Advisor

There are no areas on Molesworth for which Te Rūnanga o Ngāi Tahu has been appointed as a Statutory Advisor.

Nohoanga

There are no nohoanga sites on Molesworth.

Department of Conservation and Ngāi Tahu Protocols

The protocols cover cultural materials, historic resources, freshwater fisheries, culling of species, visitor and public information, and Resource Management Act advocacy. The protocols make general statements about how the Department of Conservation should conduct work with Ngāi Tahu in these areas. They all apply to the Department's management of Molesworth.

Taonga Species Management

The taonga species found on Molesworth are listed below.

NAME IN MĀORI	NAME IN ENGLISH	SCIENTIFIC NAME
Birds		
Kāhu	Australasian harrier	<i>Circus approximans</i>
Kākāriki	New Zealand parakeet	<i>Cyanoramphus</i> spp.
Kakaruai	South Island robin	<i>Petroica australis australis</i>
Kāmana	Southern crested grebe	<i>Podiceps cristatus australis</i>
Kārearea	New Zealand falcon	<i>Falco novaeseelandiae</i>
Karoro	Black backed gull	<i>Larus dominicanus</i>
Kea	Kea	<i>Nestor notabilis</i>
Kōau	Black shag	<i>Phalacrocorax carbo</i>
	Little shag	<i>Phalacrocorax melanoleucos brevirostris</i>
Kōparapara or Korimako	Bellbird	<i>Anthornis melanura melanura</i>
Miromiro	South Island tomtit	<i>Petroica macrocephala macrocephala</i>
Pārera	Grey duck	<i>Anas superciliosa</i>
Pīhoihoi	New Zealand pipit	<i>Anthus novaeseelandiae</i>
Pīpīwharau	Shining cuckoo	<i>Chrysococcyx lucidus</i>
Piwakawaka	South Island fantail	<i>Rhipidura fuliginosa fuliginosa</i>
Poaka	Pied stilt	<i>Himantopus himantopus</i>
Pūtakitaki	Paradise shelduck	<i>Tadorna variegata</i>
Riroriro	Grey warbler	<i>Gerygone igata</i>
Tara	Terns	<i>Sterna</i> spp.
Tītīpounamu	South Island rifleman	<i>Acanthisitta chloris chloris</i>

NAME IN MĀORI	NAME IN ENGLISH	SCIENTIFIC NAME
Plants		
Aruhe	Fernroot (bracken)	<i>Pteridium aquilinum</i> var. <i>esculentum</i>
Houhi	Mountain ribbonwood	<i>Hoheria lyalli</i> and <i>H. glabata</i>
Kānuka	Kanuka	<i>Kunzia ericoides</i>
Kāpuka	Broadleaf	<i>Griselinia littoralis</i>
Korokio	Korokio wire-netting bush	<i>Corokia cotoneaster</i>
Koromiko/kōkōmuka	Koromiko	<i>Hebe salicifolia</i>
Mania	Sedge	<i>Carex flagellifera</i>
Mānuka kahikātoa	Tea-tree	<i>Leptospermum scoparium</i>
Pānako	Fern	<i>Botrychium australe</i>
Pātōtara	Dwarf mingimingi	<i>Leucopogon fraseri</i>
Raupō	Bulrush	<i>Typha angustifolia</i>
Rautāwhiri/kōhūhū	Black matipo/mapou	<i>Pittosporum tenuifolium</i>
Taramea	Speargrass, spaniard	<i>Aciphylla</i> spp.
Tawai	Beech	<i>Nothofagus</i> spp.
Tikumu	Mountain daisy	<i>Celmisia spectabilis</i> and <i>C. semicordata</i>
Toatoa	Mountain toatoa, celery pine	<i>Phyllocladus alpinus</i>
Tutu	Tutu	<i>Coriaria</i> spp.
Wharariki	Mountain flax	<i>Phormium cookianum</i>
Wī	Silver tussock	<i>Poa cita</i>
Wīwī	Rushes	<i>Juncus</i> ; all indigenous <i>Juncus</i> spp. and <i>J. maritimus</i>
Fish		
Piripiripohatu	Torrentfish	<i>Cheimarrichthys fosteri</i>

Appendix 5

Recreation facilities

Existing and proposed recreation facilities on Molesworth (as at June 2013).

FACILITY TYPE	NAME
Existing facilities	
Gravel roads	Molesworth Cob Cottage to Acheron Accommodation House
Gravel roads	Tophouse Road including access to Lake Tennyson and Sedgemere
Standard camp Toilets x 2	Cob Cottage
Standard camp Toilets x 2	Acheron
Basic camp Amenity area Interpretation Orientation Shelter Toilets x 2	Lake Tennyson
Standard hut/toilet	Island Gully Hut
Standard hut/toilet	Sedgemere Sleepout Hut
Standard hut/toilet	Severn Hut
Standard hut/toilet	Saxton Hut
Basic hut/toilet	Lake McRae Hut
Basic hut	Elliott Bivvy
Road structure	Acheron Bridge
Road structure	Saxton Bridge
Road structure	Severn Bridge
Road structure	Yarra Bridge
Road structure	Five Mile Bridge
Road structure	Clarence Bridge (Acheron)
Road structure	Clarence Bridge (Tennyson)
Road structure	Serpentine Creek Box Culverts
Road structure	Wairau Bridge
Tramping track	Mt Augarde
Tramping track	Mt Chisholm
Walking track Interpretation point	Molesworth Homestead Lookout
Walking track Interpretation point	Acheron Lookout Track
Walking track	Pudding Hill
Amenity area/carpark Interpretation Orientation Shelter Toilet x 1	Confluence of the Acheron and Clarence rivers
Amenity area Interpretation Orientation Shelter Toilet x 1	Sedgemere (by Sedgemere Sleepout Hut)
Amenity area Interpretation Orientation Shelter Toilet x 1	Acheron Road: Severn Rock (Severn/Acheron confluence)

Amenity area Interpretation Orientation Shelter Toilet x 1	Acheron Road: Pig Trough (NZED) suspension bridge
Carpark Interpretation Orientation	Acheron Road: Pudding Hill
Unmarked route (East–West Route)	East–West Route: Sedgemere – Severn Hut – Saxton Hut – Cob Cottage – Lake McRae – Clarence
Unmarked route (Leatham Molesworth Route)	Leatham Molesworth Route: Severn Hut – Severn valley and into the Leatham Conservation Area Saxton Hut – Saxton valley and into the Leatham Conservation Area
Proposed facilities	
Unmarked route	From the Acheron Road into the East zone

Maps

Map 1: Molesworth Recreation Reserve

Map 2: Formed roads and lands adjoining water bodies

Map 3: Existing public access and recreation facilities

Map 4: Soil types

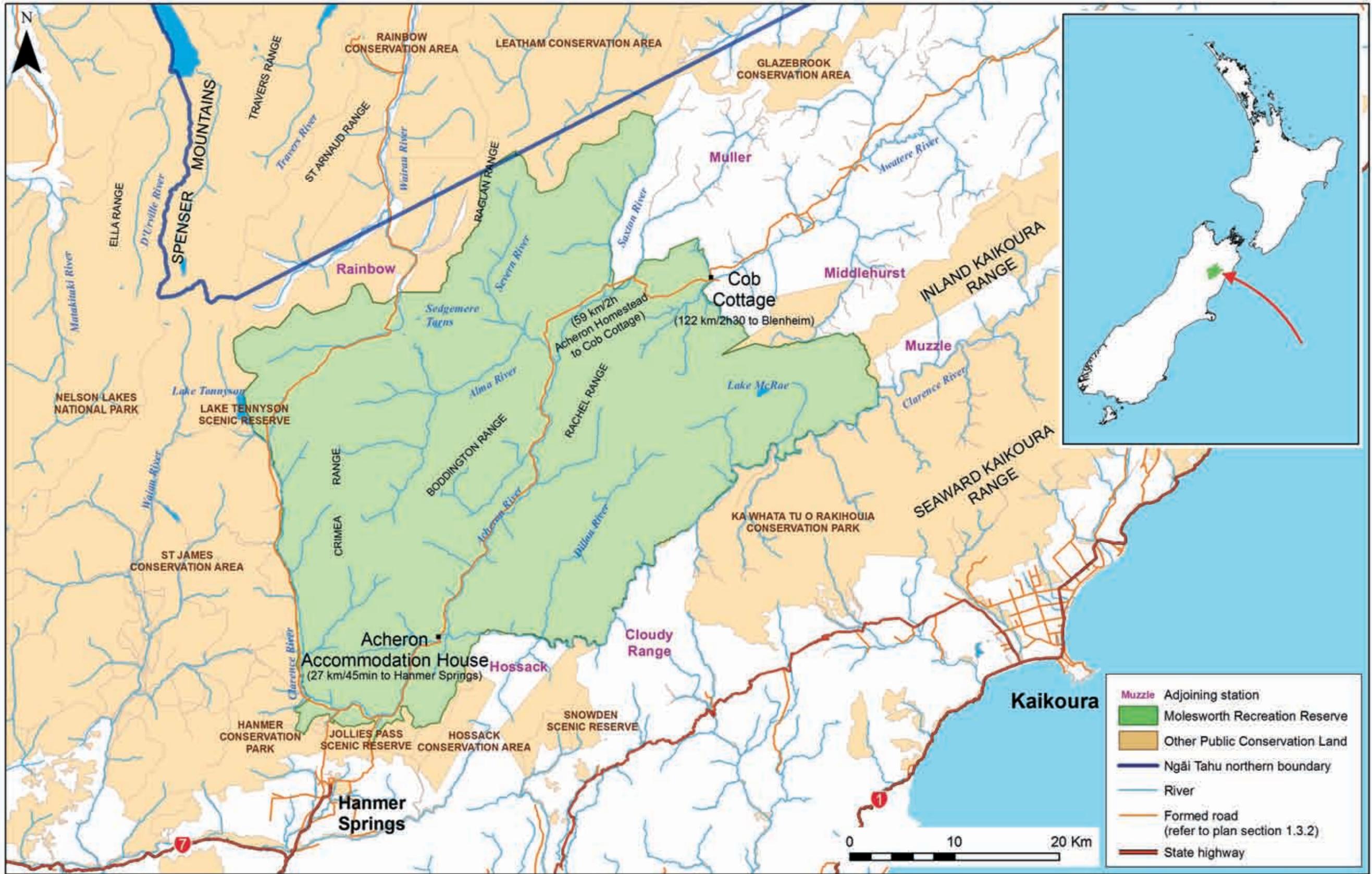
Map 5: Historic features and Ngāi Tahu trails

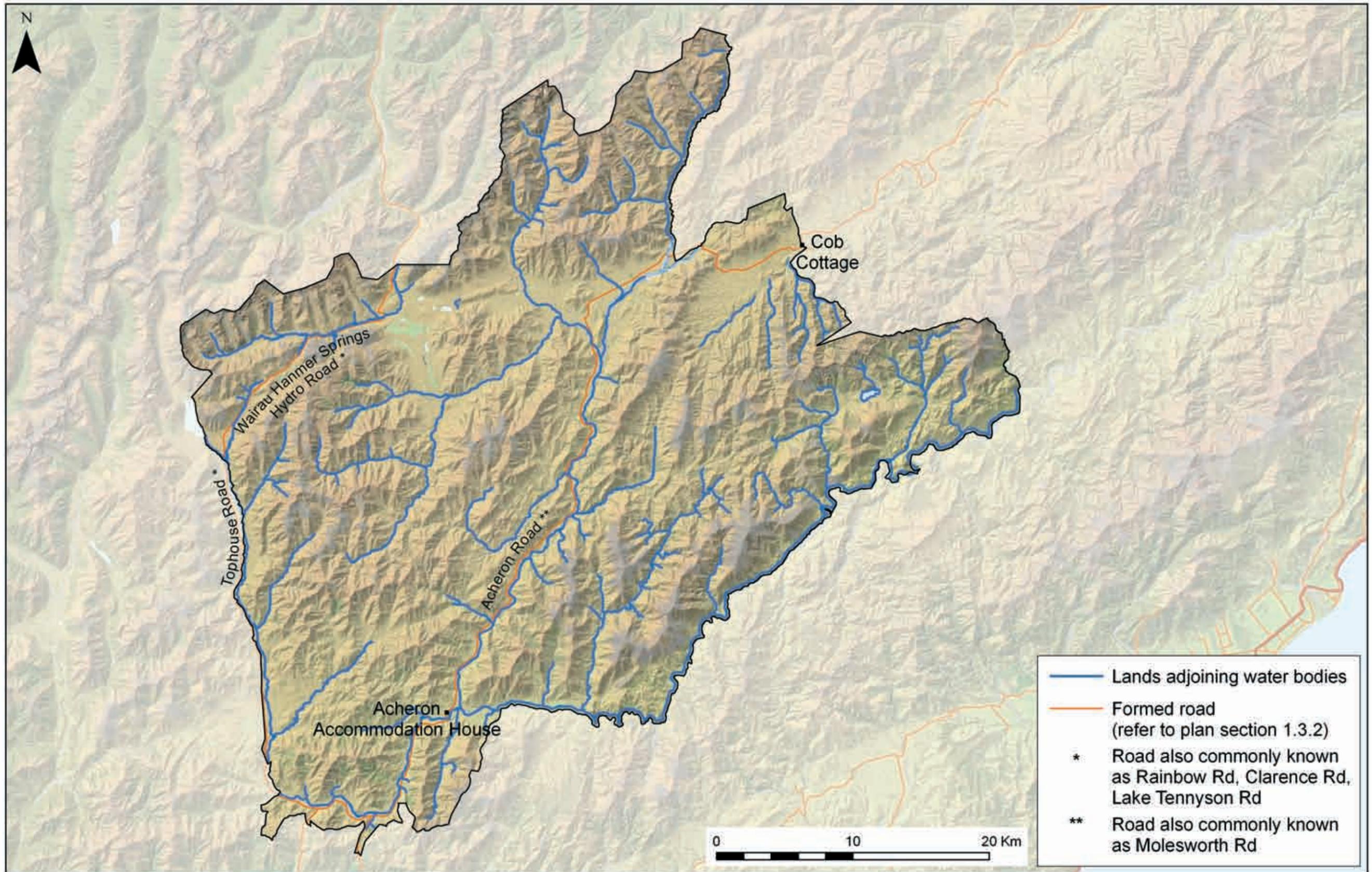
Map 6: Improved land

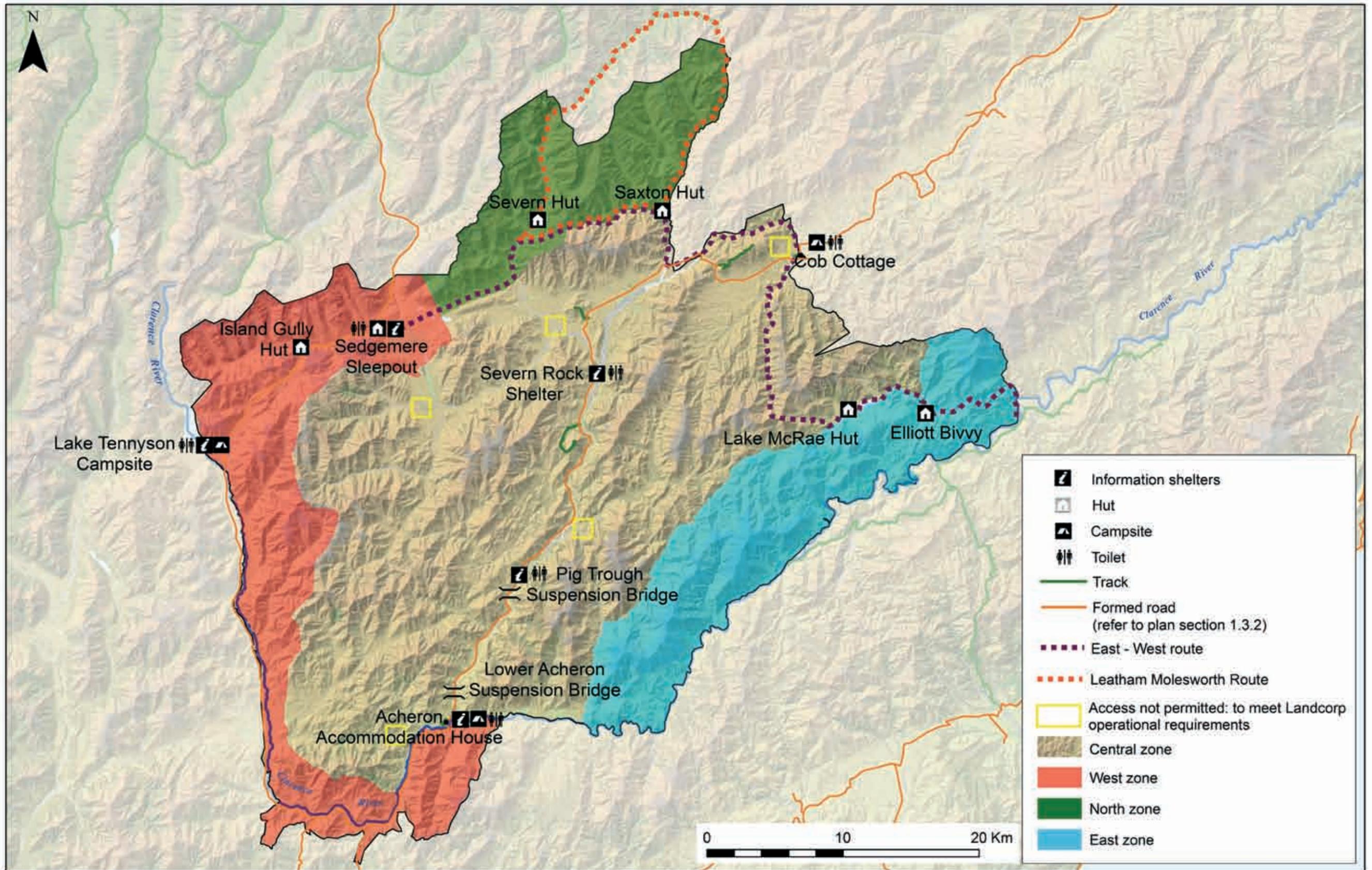
Map 7: Rotational grazing scheme

Map 8: Areas of high natural value

Map 9: Areas of land that may be added to Molesworth Recreation Reserve







MAP 4
Soil types

