

# **Buskin Track and Others, Eight Years On**

## **The Mapping of Dunedin's Physically Evident Tracks**

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41-Peg Track (also called Tomahawk Track), Otago Peninsula.

A PDF copy of this document is available from:

<http://homepages.vodafone.co.nz/~pete.mcd/ut/UT2013.pdf>

If you print this document, please be aware that the map extracts rely heavily on colour and would be difficult to interpret if printed in black and white.



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## Contents

Introduction	4
Type 1. Urban Tracks, Clusters, and Short Tracks (under 1 km)	9
Type 2. Straightforward Candidates for Mapping	21
Type 3. Routes	37
Summary	45
Appendix 1: Categories of Tracks: Five Become Two	48
Appendix 2: List of Tracks and Routes Mentioned in this Paper	49
Notes and Acknowledgments	52

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## Introduction

### Background

In August 2003 the first Acland report on walking access to the New Zealand outdoors emphasised the need for accurate information on access.<sup>1</sup> The maps that were then readily available to the public met the needs of outdoor recreators only partially. To examine one aspect of this problem more deeply, in 2005 I looked into the incomplete recording of accessways, walking tracks and tramping routes on the LINZ (Land Information New Zealand) 1:50,000 topographic maps of the Dunedin area.

Dunedin is an unusual city in that it includes extensive tracts of farmland and remote hill-country. To the north, a tongue of Dunedin extends to Hyde and the Rock and Pillar Range. To the west, the Old Dunstan Road leaves the city limits when it sidles over the Lammermoor Range. The area administered by Dunedin city council covers 3,341 square kilometres, slightly more than 1% of the total area of New Zealand. Spread unevenly around this area are over 500 kilometres of tracks or routes.<sup>2</sup> Many of these ways are managed by DOC or by DOC and a private landowner. Most of the rest are managed by city-council departments. A few are managed by their private owners.

An underlying premise of my investigation was that our national series of 1:50,000 topographic maps, paper and online, should be walkers' primary sources of information on walking tracks.<sup>3</sup> As I saw it, these maps should be authoritative and indispensable. Guidebooks, leaflets, park rangers, track-managers, visitor centres, tramping websites and fishing magazines form invaluable secondary sources. Guidebooks provide details that maps cannot show. Walkers and trampers will often use both primary and secondary sources. The secondary sources will sometimes be more up to date than the maps, but the fewer discrepancies between the maps and the secondary sources, the better.

An extension of this premise, a point that in 2005 needed stressing, was that New Zealand's topographic maps were not only vitally important for defence, rescue and government purposes but were also equally crucial for outdoor recreation and tourism. This remains true today. There are reasons to believe that more people now think this way.

Little has happened since 2005 to lessen the recreational importance of our national 1:50,000 topographic mapping. However, a postscript about map scales would be useful. Because of cartographic limitations, some tracks cannot be fitted onto the NZTopo50 maps without messily overlapping other features. Often these tracks would fit comfortably on a 1:25,000 map, a fact that was recognised by several submitters to the walking-access consultations of 2003–8. In its submission to the Walking Access Consultation Panel, Greater Wellington regional council wrote:

Public access [ie foot-tracks open to the public and the boundaries of public land] should be depicted on paper maps at a scale of 1:50,000. This scale would only just be adequate for walking access ... In addition, internet access could be made to pdf files at a scale of 1:25,000 to be downloadable and printable on A3 format.<sup>4</sup>

To show crowded clusters of tracks and to show tracks in urban-fringe areas, the larger scale is essential. Perhaps authoritative online maps, purpose-designed for clarity at 1:25,000, might be possible for New Zealand at some time in the future. In the meantime, we must make the best of our 1:50,000 maps, including the topographic layer of the NZWAC's walking access mapping system.

My findings were recorded in the paper 'Buskin Track (80114) and Others (2005)'.<sup>5</sup> Many of the issues described in that paper remain important. Welcome progress, however, has solved some problems, both local and national. This 2013 update covers the abiding issues and the recent advances. Lumps of text have been cut from the old paper and pasted into the new, when still relevant. Much of the update, though, is new writing.

## Findings in 2005

In 2005 Dunedin city council's Track Policy and Strategy (1998) listed 178 named tracks. Fifty-eight of these were not shown or were only partly shown on the paper Topographic Map 260 maps. Similarly, they were not shown or were only partly shown on NZTopoOnline.<sup>6</sup>

I argued that forty-nine of these unmapped tracks were physically evident or adequately waymarked and that they therefore should have appeared on the topographic maps, irrespective of whether the tracks were public or private.<sup>7</sup> Several of these 'missing' tracks were short accessways or links. I pointed out that short sections of track can be shown clearly at the scale of 1:50,000, except in crowded urban areas. A track just 300 metres long, for example, is six millimetres at 1:50,000. The importance of showing short bits of track remains a concern in 2013. The next section reproduces a part of the 2005 study that discussed short tracks.

The other nine unmapped tracks were unmaintained routes. These may or may not have met the LINZ criteria to be shown by the symbol for 'Unmaintained route (defined by usage)'.<sup>8</sup> The 2005 paper discussed these criteria.<sup>9</sup> We will return to routes later.

## National Mapping Developments Since 2005

In the eight years since 2005, the provision of topographic mapping in New Zealand has changed and improved in several ways. On 30 September 2008 the Walking Access Act 2008 came into force, establishing the New Zealand Walking Access Commission. One of the commission's statutory functions is 'compiling, holding, and publishing maps and information about land over which members of the public have walking access'.

In September 2009, LINZ released a new series of 1:50,000 topographic maps called NZTopo50 (often shortened to Topo50). This series was destined to become the crucial topographic base layer for the Walking Access Commission's public access mapping. NZTopo50 maps are available from shops on paper and from LINZ as freely downloadable image and data files. NZTopoOnline was withdrawn, having been superseded by the new arrangements.

In July 2011 the Walking Access Commission formally launched its online mapping system designed to show land to which the public has walking access.<sup>10</sup> The Walking Access Mapping System (WAMS) comprises three layers of information: topographic, cadastral and photographic. Other organisations can partner with the commission to display their own information to the public using the mapping system's partner-information portal. Access to the WAMS is free. By June 2012 the site was receiving about 250 visits a day and was gaining widespread acclaim.

LINZ, as an organisation, may be gradually modernising its thinking on the purpose of topographic maps. In 2005 its main customer focus had seemed to be on the needs of its Primary Customers, a special group that lacked any outdoor-recreation or tourism bodies.<sup>11</sup> In contrast to this narrowness, in 2010 LINZ's statement of intent talked about providing

‘information and data to a wider group of customers’, which included recreational groups.<sup>12</sup> The change was apparent:

It is likely we will need to expand our definition of who our ‘core’ customers, are and act accordingly. We already have strong ties with customers, such as the surveyors and lawyers using our electronic land transaction system, Landonline. While we need to maintain and grow these relationships, other emerging customer groups are increasingly important to us and deserve a more active treatment. They need a ‘voice’ into LINZ and product and service adaptations to meet their needs.<sup>13</sup>

## Repeat Study

In February 2013 I began a repeat of my 2005 study, but with some modifications to reflect the various developments.

In 2005 my main sources of track-names and track locations had been the city council’s list of named tracks and its annotated 1:50,000 maps.<sup>14</sup> Other sources had included guidebooks and leaflets.

In 2013, I have revised some of the track-names to keep them consistent with updated track-names in the council’s tracks records. For the locations, I have taken advantage of two new sources that have greatly increased and improved the information available about our local walks. Firstly, Antony Hamel’s guidebook *Dunedin Tracks and Trails* (2008); the large-scale maps in this guidebook (typically 1:25,000 to 1:40,000) have been particularly useful.<sup>15</sup> And secondly, Dunedin city council’s new online tracks map (under construction in March 2013), which incorporates track coordinates supplied by Hamel.

As regards my checking of LINZ’s 1:50,000 topographic maps, when in 2005 I began examining the mapping of these tracks, I bought six topographic maps to cover the whole area administered by Dunedin city council. I looked for each track on these paper NZMS 260 maps and also on NZTopoOnline. But no map-buying has been required for the update. In 2013 I have looked for each track on the topographic layer of the WAMS, which is updated twice yearly from LINZ’s NZTopo database. I could have used the NZTopo50 PDF files, but the WAMS was a more convenient resource for my purposes. As for paper maps, they are still available but it’s a sign of the times that when recently I tried to buy a paper NZTopo50 *Dunedin* sheet, the stockist had changed and the new stockist didn’t have a copy.

### *Local Progress Since 2005*

The first task of the repeat study was to check each of the forty-nine tracks listed in 2005 as missing or partly missing from the LINZ 1:50,000 topographic maps despite being physically evident or adequately waymarked. This checking revealed that some of these tracks have since been added to LINZ’s maps. These improvements included thirteen tracks on the Otago Peninsula: McTaggart Street (eastern part), Camp Track, Bacon Track (southern part), Quion Cliff (eastern part), Mt Charles, Hoopers Inlet to Highcliff Rd Track, Nyhon Track, Sandymount to Sandfly Bay, Buskin Track, Highcliff Track, Seal Point Road to Sandfly Bay, Ridge Road, and Sandymount - Carpark to Summit.

An important local advance happened in 2008 when Antony Hamel published *Dunedin Tracks and Trails*. This guidebook describes over a hundred tracks of greater Dunedin, all being less than an hour’s drive from the city centre. The book includes about 350 photographs and about forty maps. Here in 2008 in high-quality colour were the maps that Dunedinites had needed for decades, with accurate and up-to-date depiction of tracks.

Another local development, which is still under way, is the modernising of Dunedin city council’s management of its tracks. In 2005 the council recorded the area’s tracks in an Excel spreadsheet and by annotations on paper 1:50,000 maps. Technology has moved on since then. Now, in 2013, the council’s GIS unit is constructing an online tracks map.<sup>16</sup>

Antony Hamel has donated much of the tracks data. This webmap will double as a track-management tool and an information source for the public. It will show many of the tracks that are missing from the NZTopo50 maps. When the user clicks on a track, the map will display information about that track.

### *Awaiting Attention*

The next three sections of this paper examine a mixed bag of unmapped tracks (see Terminology below). There are thirty-four listed here, and these are just a selection of those in existence. All of them, from short accessways to long remote tramps, contribute to Dunedin's network of tracks. Some of them may meet LINZ's criteria for being shown as a 'Foot track' or a 'Poled route'; we can hope that these will be surveyed (if necessary) and added to the NZTopo database. Some of the others might not satisfy the LINZ specifications. They therefore will not be added to the NZTopo database and will not appear on the basic, LINZ-sourced topographic layer of the WAMS. At some point, however, the Walking Access Commission may add them directly into the mapping system as extras.

The brief track descriptions, together with the map extracts, are intended to show the approximate locations of the unmapped portions of track. Sometimes the description, together with an extract from the photographic layer of the WAMS, suggest whether or not a track is physically evident.

Determining the landownership was not an aim of my enquiries. The map extracts from the cadastral layer of the WAMS are included as extra background knowledge, not as essential parts of the project.

In 2005, when I first looked into the incomplete recording of accessways, walking tracks and tramping routes on the 1:50,000 maps of the Dunedin area, I concentrated my efforts on discovering the extent of the problem rather than on the reasons for it. During this second look at the situation, my focus gradually shifted from recording the unmapped tracks to trying to understand the varied causes of the incompleteness. Some of the individual track summaries now include a possible reason why the track is not shown on the NZTopo50 map.

## **Terminology, Track Lengths, and Map Extracts**

In this paper I use the term 'unmapped track' very specifically to mean a recognised foot-track or tramping route that is not shown or is only partly shown on the NZTopo50 map. The omission may be either intentional or by default. Many of these missing tracks or routes do appear on other maps, such as those in guidebooks or in city-council track leaflets. Five of them are managed by DOC; these have been added to the WAMS but not yet to the NZTopo50 maps.

The expression 'physically evident track' could mean different things to different people. Here I use it with a broad sense to mean a track or route that is visible on the surface of the ground by virtue of being either well formed or worn by use. This visibility may be supplemented where necessary by signs or waymarks.

The terms 'walking track' and 'route' without initial capital letters are used in a general sense that does not refer to any particular system of classification. Given initial capitals, Walking Track and Route are grades in the DOC-SNZ track classification system.

All the track lengths given in this paper are of the unmapped sections only and are approximate and one way.

Many of the map extracts are enlarged to show where a section of track is missing. The enlargements from 1:50,000 NZTopo50 mapping are useful for this purpose but they can give a false idea of what the cartography would look like at the genuine 1:50,000 scale.

**Abbreviations**

DOC Department of Conservation

GIS Geographic information systems

LINZ Land Information New Zealand

NZWAC New Zealand Walking Access Commission

SNZ Standards New Zealand

WAMS Walking Access Mapping System

## Type 1. Urban Tracks, Clusters, and Short Tracks (under 1 km)

In 2005 the apparently simple project – merely comparing a list of tracks with the 1:50,000 topographic maps – raised three questions about the showing of physically evident tracks at this scale. These questions were:

- can tracks in urban areas be shown?
- can clusters of tracks be shown?
- should short sections of track be shown, for example a 200-metre accessway to a beach?

The 2005 paper discussed several possible answers to these questions. I am repeating and expanding those discussions in this update because they remain important aspects of New Zealand's topographic mapping, especially in the absence of 1:25,000 mapping. They need bearing in mind whenever we consider the mapping of a particular track.

### Tracks in Urban Areas

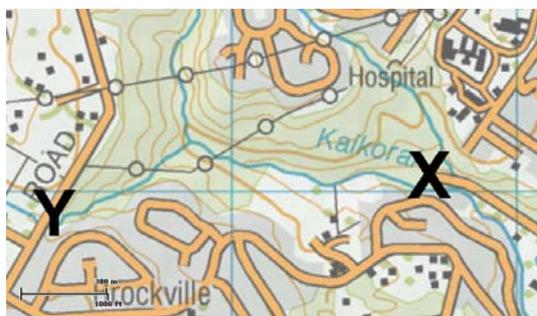
Often urban detail, especially buildings and roads, prevents the depiction of tracks at a scale of 1:50,000. Yet sometimes a track in a space between built-up areas *can* be squeezed into the space on the map. Frasers Gully track, on the outskirts of Dunedin, appears to be potentially a good example.

#### *Frasers Gully*

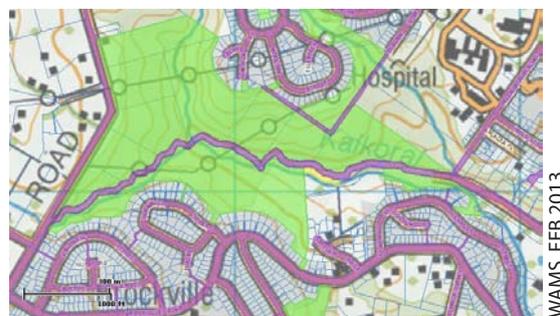
Location: Brockville–Halfway Bush

Length of unmapped section, one way: 1.9 km

The Frasers Gully track provides a pleasant 1.9 km walk from Kaikorai Valley to Brockville through native bush and beside a stream. An *Otago Daily Times* article on 24 January 1987 mentioned work on the Frasers Gully walking track, so the track has existed for at least twenty-six years. A DOC 1997 leaflet, *An Introduction to Dunedin Walks*, included Frasers Gully in a sketch-map showing the locations of walks. The track is well made and well maintained. Unlike for many tracks close to the suburbs, there may be space on the NZTopo50 map to show Frasers Gully track.



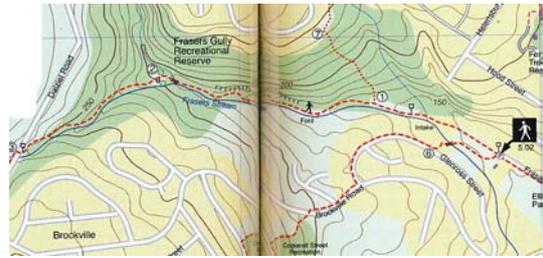
The missing Frasers Gully track (XY).



Frasers Gully, cadastral-topo view.



WAMS, FEB 2013



DUNEDIN TRACKS AND TRAILS (2008)

Frasers Gully track (map by A Hamel).

The eastern end of Frasers Gully track is visible on this aerial photograph. Trees hide most of the rest of the track.

***St Clair to Marlow Park Track (also called Between Surf Clubs Track)***

Location: South Dunedin

Length of unmapped section, one way: 1.7 km

This track goes from St Clair Surf Club to St Kilda Surf Club. The track is a mix of dunes track and playing-field edge. Since about 2003 it has been promoted in successive editions of a Dunedin-city-council leaflet *Walking with Wheels*. Unlike for many tracks close to the suburbs, there may be space on the NZTopo50 map to show this track.



WAMS, FEB 2013

The missing St Clair to Marlow Park Track (XY).



WAMS, FEB 2013

St Clair to Marlow Park Track, cadastral-photo view.



The western end of St Clair to Marlow Park Track is visible on this aerial photograph, following the line of trees.

## Track Clusters

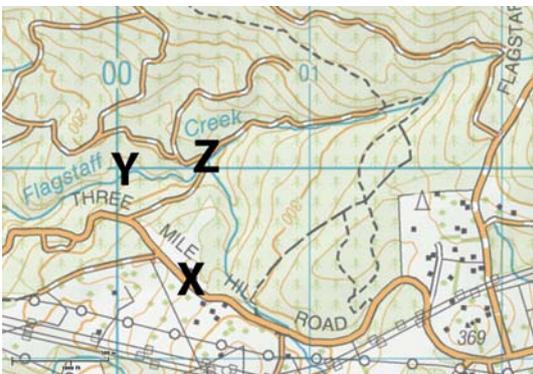
Sometimes the problem is not buildings but an intricate network of tracks in a small area. For example, the crowded parallel tracks in Dunedin's Botanic Gardens cannot be shown at 1:50,000. Other tracks in this category include all the tracks in the Ross Creek area and most of the cluster in Signal Hill Reserve.

### *Flagstaff Creek Exotic Forest Track (also called Flagstaff Creek Walking Track)*

Location: Three Mile Hill Road

Length of unmapped section, one way: 2 km

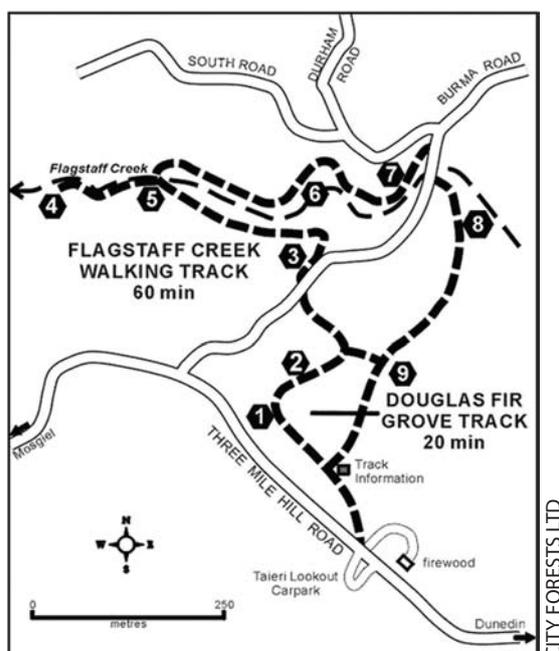
This track is situated to the north of Three Mile Hill Road, roughly opposite the Taieri Lookout Point. Two thousand people used this two-kilometre track during Trees and Forests Week in August 1991. City Forests Ltd then decided to open it permanently. The company spent \$10,000 developing this track and a neighbouring track, Douglas Fir Grove Track. The two tracks were opened officially on 16 February 1992.<sup>1</sup> The track is well formed and gravelled. About 100 m from the start there is an information point with a map of the track. From here the usual route follows a clockwise circuit that visits ten numbered stops. There is a sketch-map on the website of City Forests Ltd.<sup>2</sup> This sketch-map shows what might better be described as a cluster of tracks rather than a single track. It may not be possible to show this cluster at 1:50,000.



The missing Flagstaff Creek Exotic Forest Track is a cluster of tracks in the area XYZ.



Part of Flagstaff Creek Exotic Forest Track is visible on this aerial photograph, but trees hide most of the rest.



Sketch-map of Flagstaff Creek Exotic Forest Track

### Short Sections of Track and Short Accessways (under 1 km)

I'm going to stick my neck out here and be categorical. My viewpoint, as a walker map-user, is that if a track is short, say just two hundred metres, but is in open ground or forest and is therefore plottable at 1:50,000, it ought to be on the maps. By 'plottable' I mean cartographically possible to fit onto the map among other detail. Often short tracks can be easily accommodated in the space available. Sometimes they can be satisfactorily squeezed in among other detail. Occasionally, fitting a short track onto the map may be difficult or impossible. The tracks on Quarantine Island in Otago Harbour, for example, may not be plottable on the NZTopo50 map.

Some of the tracks that I have listed as unmapped are fragments, merely a few hundred metres long. Yet a two-hundred-metre-long track may be a vital accessway to a river or to the foreshore. The presence of such a track on an NZTopo50 map shows the user that there is physical (if not necessarily legal) access to the river or foreshore. Typical examples of short but important accessways that are not shown on the NZTopo50 maps are Island Park Inlet Track and Long Beach Track.

Outdoor recreators should question the omission of these short but plottable tracks. These short links form a crucial part of walking access to the New Zealand outdoors. Yet, on whether to record them, the technical specifications for the NZTopo database seem to be open to interpretation: 'In urban and rural areas, capture only significant foot tracks. Do not capture access [foot-]tracks from a road to a farmhouse or other dwelling unless they are particularly significant.'<sup>23</sup>

Insignificant? Significant? Particularly significant? LINZ engages contractors to update the NZTopo database. How do these contractors interpret the phrase 'particularly significant'? We can only guess. At the end of this section are notes on several short but important accessways that do not seem to have been notable enough to be captured for the NZTopo database.

The ideal solution for showing short accessways is a larger-scale map, such as 1:25,000. In the absence of such maps, New Zealand's cartographers need to maximise the track-showing capabilities of the existing and future 1:50,000 maps.

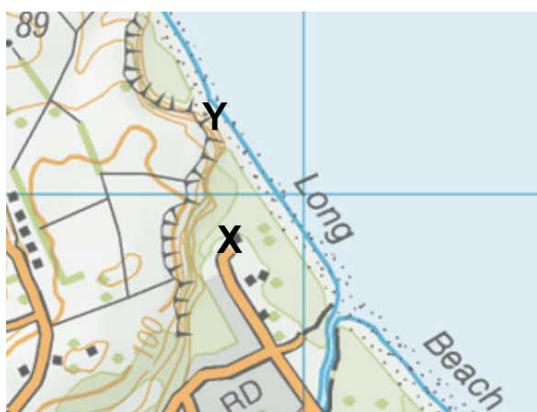
Why make a fuss about showing just a couple of hundred metres of foot-track, when that track is impeccably obvious on the ground? The answer to this question is that the full importance of showing all plottable tracks, however short, will become more obvious when – possibly in the distant future – New Zealand develops topographic maps that distinguish between foot-tracks that are open to the public and foot-tracks that are private. Putting this in technical terms, there may come a time when our cartographers will add a ‘public’ attribute to particular tracks on the NZTopo database; you can hardly add this attribute if the track is not there on the database in the first place.

### ***Long Beach Track***

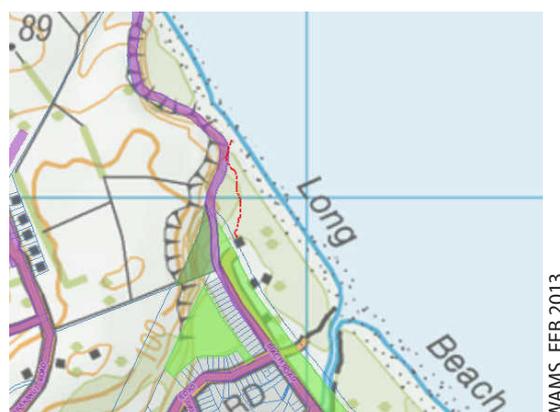
Location: Northern Coast

Length of unmapped section, one way: 0.3 km

Long Beach Track is a well-formed track that connects the northern end of Long Beach domain to the foreshore near the north end of the beach. Rockclimbers use this 300-m accessway to reach the basalt cliffs.<sup>4</sup> The present track was opened on 8 October 1994.<sup>5</sup> It resulted from three years of planning involving the Long Beach Neighbourhood Support Group, the Department of Conservation, the Dunedin city council, the Otago Coastal Environmental Action Network (Ocean), and sponsors. Long Beach Track epitomises the short but indispensable accessway. It has been added to the WAMS as a DOC track but is not shown on the NZTopo50 map.



The missing Long Beach Track (XY). Note: this extract from the WAMS has been taken with DOC tracks switched off so that it accurately represents the NZTopo50 map.



Long Beach Track, cadastral-topo view. The track appears as a DOC-managed track (the thin red line), with a DOC classification of Walking Track. But there are strong arguments that this short accessway should also be shown on the NZTopo50 map.



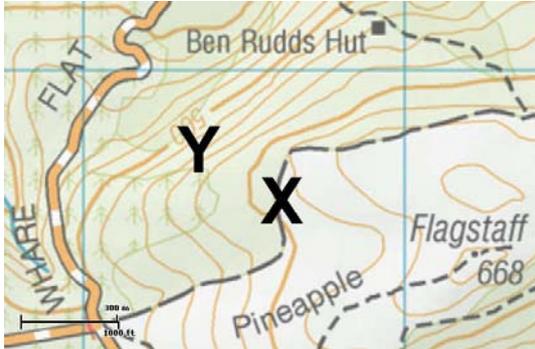
Long Beach Track (AB) from the air.

**Big Rock Track**

Location: Flagstaff

Length of unmapped section, one way: 0.4 km

Big Rock Track is a short link to Big Rock (also called Bivvy Rock) from Firebreak Track. It is ill-defined and has minimal waymarking. It probably lacks the definition necessary for it to be added to the NZTopo50 map.



WAMS, FEB 2013

The missing Big Rock Track (XY).



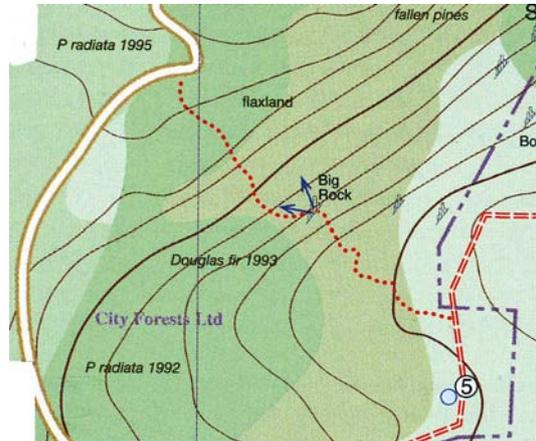
WAMS, FEB 2013

Big Rock Track, cadastral-topo view.



WAMS, FEB 2013

Big Rock Track is not visible on this aerial photograph. It shows up very faintly at higher enlargements.



DUNEDIN TRACKS AND TRAILS (2008)

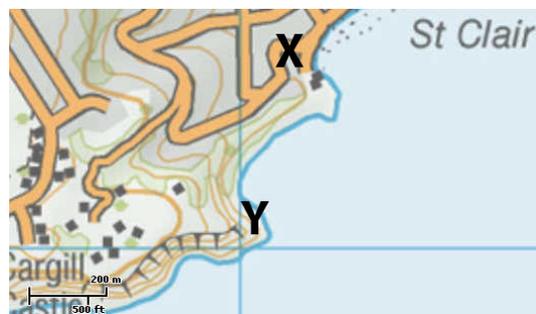
Big Rock Track (map by A Hamel).

**Second Beach Track**

Location: South Dunedin

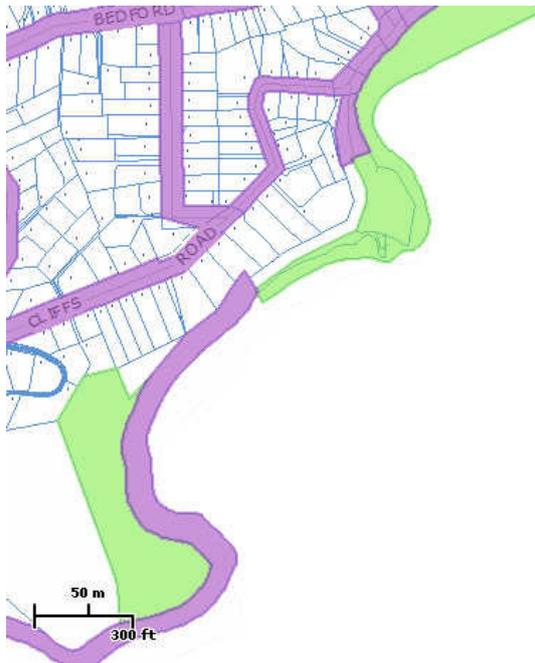
Length of unmapped section, one way: 0.5 km

Second Beach Track is a gravelled access-way from St Clair Beach to Second Beach. It is potentially a part of a longer coastal track to Tunnel Beach. It is clearly visible on the WAMS aerial photographs.



WAMS, FEB 2013

The missing Second Beach Track (XY).



Second Beach Track, cadastral view.

WAMS, FEB 2013



Second Beach Track is clearly visible on this aerial photograph.

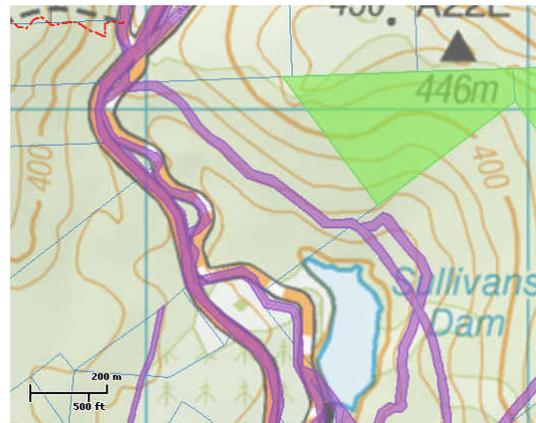
WAMS, FEB 2013

### *Sullivans Dam Pipeline*

Location: Leith Valley

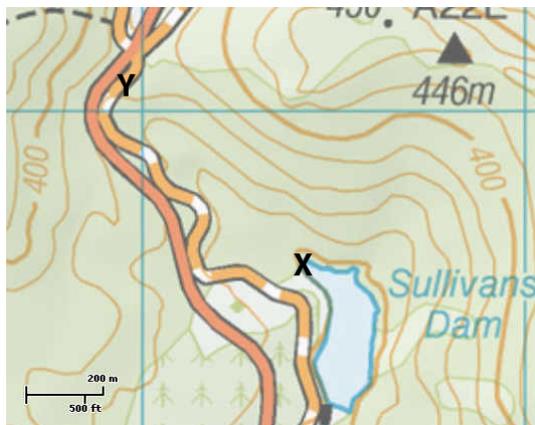
Length of unmapped section, one way: 0.6 km

This muddy route links Sullivans Dam to Leith Saddle by following a pipeline. The potential importance of this short track is as a useful strand in a network, but at present its muddy reputation limits its use. Trees hide the pipeline on the WAMS aerial photographs.



WAMS, FEB 2013

Sullivans Dam Pipeline track, cadastral-topo view.



WAMS, FEB 2013

The missing Sullivans Dam Pipeline track (XY).



DUNEDIN TRACKS AND TRAILS (2008)

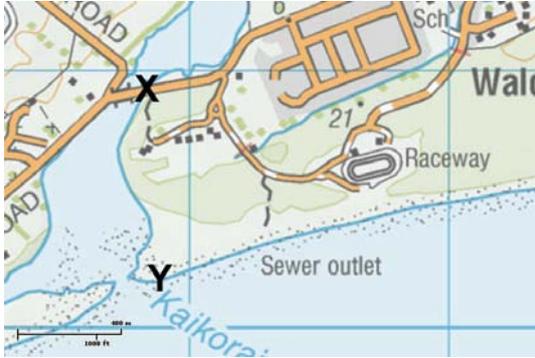
Sullivans Dam Pipeline track (map by A Hamel).

**Island Park Inlet Track**

Location: Kaikorai Estuary

Length of unmapped section, one way: 0.7 km

Island Park Inlet Track is a narrow foot-track, worn by use. It follows the side of Kaikorai Lagoon to reach the beach. It functions as an accessway from Brighton Road, across a public reserve, to reach the foreshore. The track is visible on the WAMS aerial photographs.



WAMS, FEB 2013

The missing Island Park Inlet Track (XY).



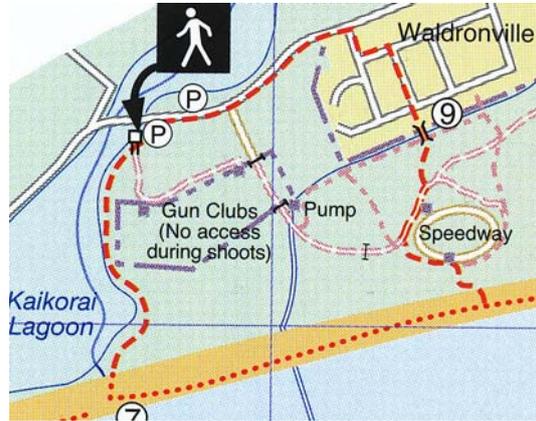
WAMS, FEB 2013

Island Park Inlet Track, cadastral-topo view.



WAMS, FEB 2013

The Island Park Inlet Track is visible on this aerial photograph, following the water's edge.



DUNEDIN TRACKS AND TRAILS (2008)

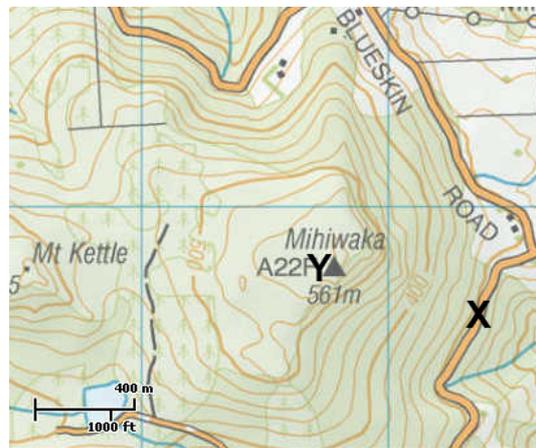
Island Park Inlet Track (map by A Hamel).

**Mihiwaka Track**

Location: Port Chalmers area

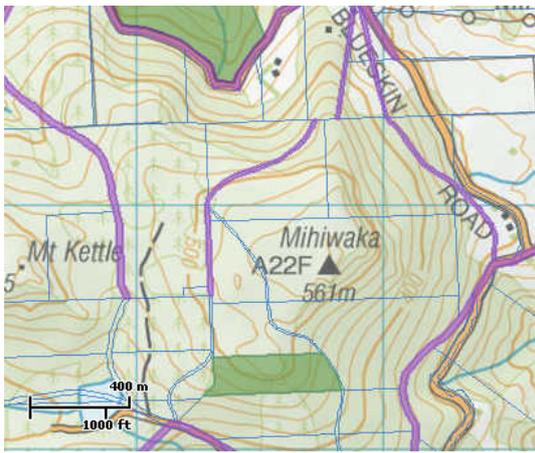
Length of unmapped section, one way: 0.7 km

Mihiwaka Track provides access from the road to rock climbs and the summit of Mihiwaka. Members of Otago Tramping and Mountaineering Club visited Mihiwaka in 1963.<sup>6</sup> Rockclimbers have visited the crag since the early 1970s.<sup>7</sup> The track is ill-defined and has minimal waymarking. It probably lacks the definition necessary for it to be added to the NZTopo50 map.



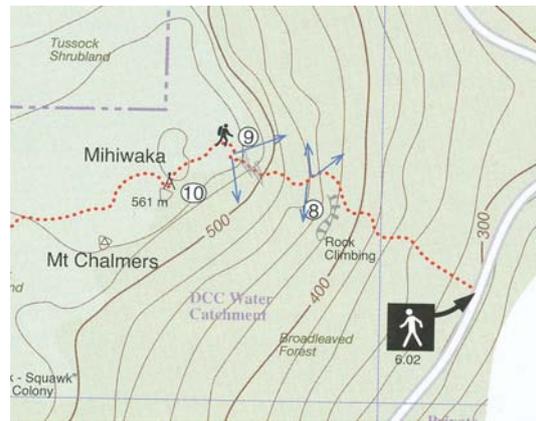
WAMS, FEB 2013

The missing Mihiwaka Track (XY).



WAMS, FEB 2013

Mihiwaka Track, cadastral-topo view.



DUNEDIN TRACKS AND TRAILS (2008)

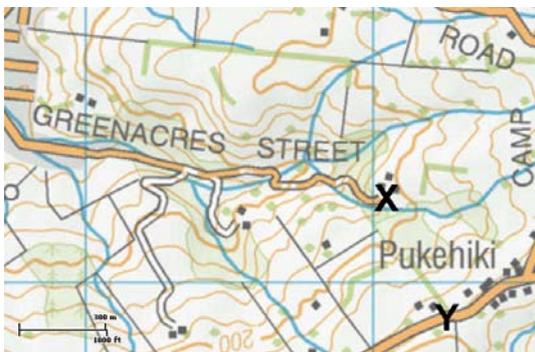
Mihiwaka Track (map by A Hamel).

### Greenacres Track

Location: Otago Peninsula

Length of unmapped section, one way: 0.7 km

Greenacres Track climbs from the Greenacres Street road-end above Macandrew Bay to Highcliff Road at Pukehiki. It is a well-defined track based on an unformed public road. Some sections follow dry-stone walls and rows of macrocarpa. This track appeared on the A3 sketch-map 'Otago Peninsula Plan for Public Access', approved by the full Dunedin city council on 4 November 1991.<sup>8</sup> Since 1997 it has been promoted in successive editions of a Dunedin-city-council leaflet *Otago Peninsula Tracks*. It is used by mountain-bikers as well as walkers.<sup>9</sup> On the WAMS aerial photographs, most of this track is hidden by trees.



WAMS, FEB 2013

The missing Greenacres Track (XY).



WAMS, FEB 2013

Greenacres Track, cadastral-topo view.



WAMS, FEB 2013

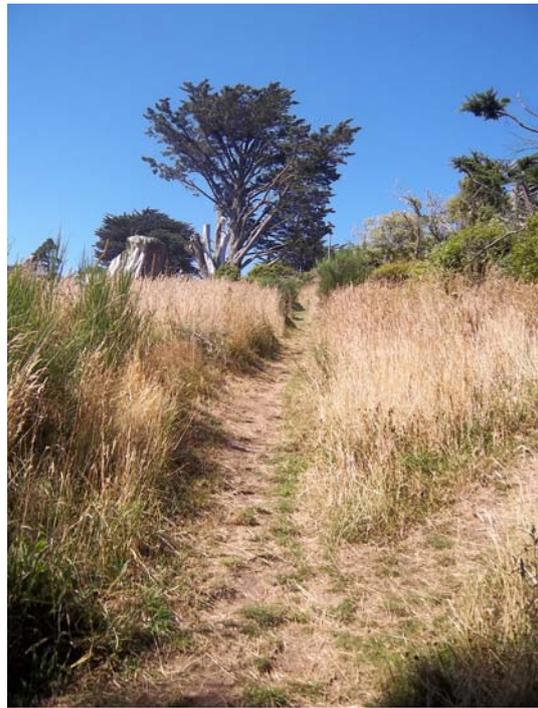
A line of trees hides the southeastern end of Greenacres Track.



A sign marks the bottom end of Greenacres Track.



Greenacres Track.



Greenacres Track, near the top.

### *Picnic Gully Track*

Location: Taieri River

Length of unmapped section, one way: 0.7 km

Picnic Gully Track provides a short walk into a patch of bush, once a favourite picnic spot. The track starts in Hanning Place, a little cul-de-sac about 400 m south of the bridge where the main coast road (Taieri Mouth Road) crosses the Taieri River. The start of the track is signposted. After about 450 m the track veers left and goes steeply up onto farmland. White poles mark a stile that leads onto Finlayson Road (the road from Taieri Mouth to Waihola). Picnic Gully Track, which is partly on reserve managed by DOC and partly on private land, is in Clutha district council's administrative area. It is managed by DOC, who have promoted it since at least 1995, firstly in the leaflet *Taieri River and Picnic Gully Track*<sup>10</sup> and more recently in the leaflet *DOC Walks around Dunedin*. On the WAMS aerial photographs, most of Picnic Gully Track is hidden by trees. It has been added to the WAMS as a DOC track but is not shown on the NZTopo50 map.



The missing Picnic Gully Track (AB). Note: this extract from the WAMS has been taken with DOC tracks switched off so that it accurately represents the NZTopo50 map.



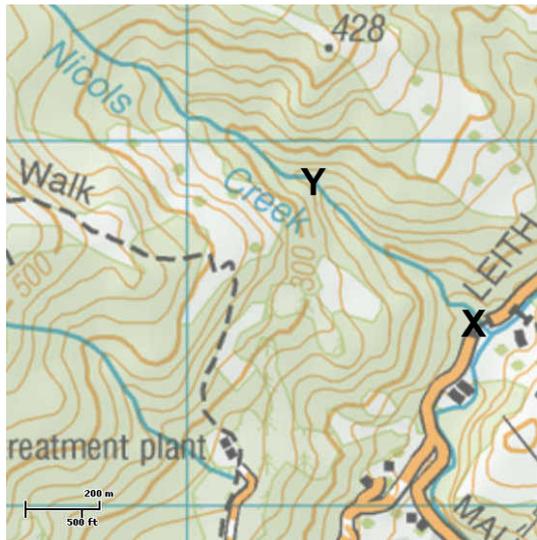
Picnic Gully Track, cadastral-topo view. This DOC-managed track has been added to the WAMS. It appears as a thin red line.

**Nicols Falls Track**

Location: Leith Valley

Length of unmapped section, one way: 0.8 km

This short bushwalk up to the miniature cataract starts where Leith Valley Road crosses Nicols Creek. People have been visiting this small waterfall, off and on, for over a century. On the WAMS aerial photographs, most of Nicols Falls Track is hidden by trees.



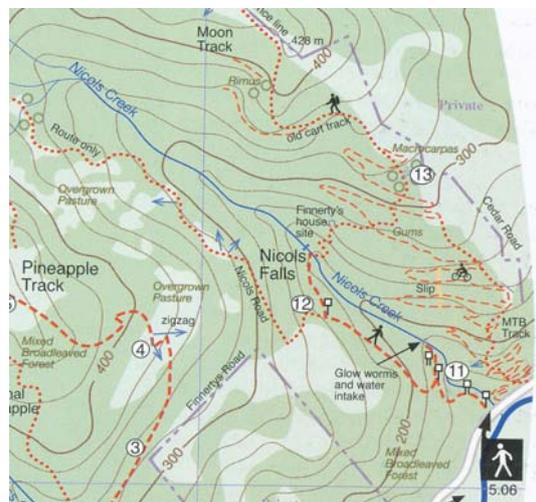
The missing Nicols Falls Track (XY).

WAMS, FEB 2013



Nicols Falls Track, cadastral-topo view.

WAMS, FEB 2013



Nicols Falls Track (map by A Hamel).

DUNEDIN TRACKS AND TRAILS (2008)

**District Track (northern half of)**

Location: Otago Peninsula

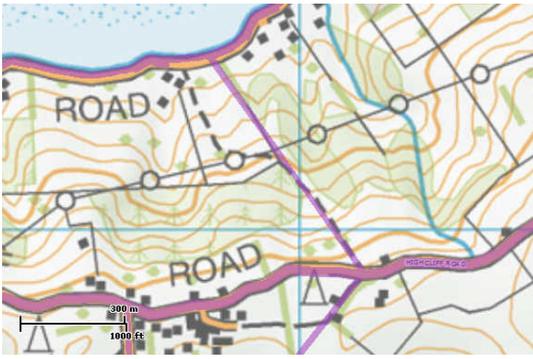
Length of unmapped section, one way: 0.4 km

District Track is an unformed public road that links Portobello Road to Highcliff Road. It appeared on the A3 sketch-map 'Otago Peninsula Plan for Public Access', approved by the full Dunedin city council on 4 November 1991.<sup>11</sup> Since 1997 it has been promoted in successive editions of a Dunedin-city-council leaflet *Otago Peninsula Tracks*.<sup>12</sup> In February 2013 it was only faintly visible as a trail through long grass. So it was hardly physically evident and it probably lacked the definition necessary for it to be added to the NZTopo50 map.

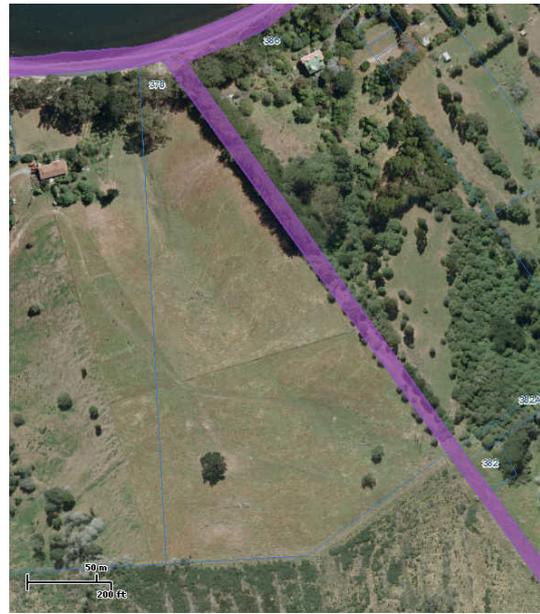


XZ is District Track. Only half the track is shown. XY is the missing half.

WAMS, FEB 2013



District Track, cadastral-topo view.



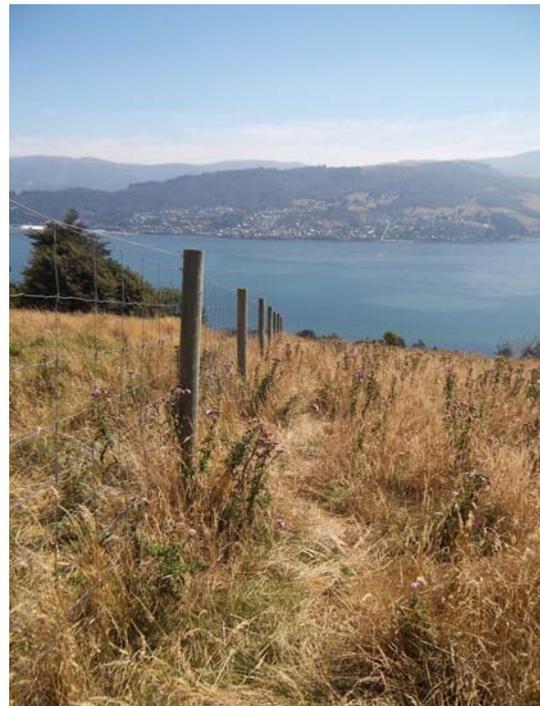
District Track, northern half.



District Track, southern end. The remains of two dry-stone walls mark the line of the unformed public road. The track is not visible.



A signpost marks the southern end of District Track.



District Track, near southern end. The track is not heavily used and is little worn. There are few waymarks. It could not be said to be physically evident.

## Type 2. Straightforward Candidates for Mapping

We have seen that foot-tracks that are short or in urban areas struggle to make it onto the NZTopo50 maps. Likewise, we shall see in the next section that Routes that are indistinct and poorly waymarked may not be welcomed onto the NZTopo50s. Between these extremes are a large number of tracks whose only barrier against recognition and mapping is the need to be physically evident. By 'physically evident' I mean visible on the surface of the ground by virtue of being either well formed or worn by use. This visibility may be supplemented where necessary by signs or waymarks.

Nearly all the track sections listed below are more than one kilometre in length, beyond any mapping complications of shortness. None are in urban areas. Only one is in a cluster, and it is the main track of the cluster. None have been given the grade of Route, either by DOC or by Dunedin city council. Therefore, as regards adding them to the NZTopo50 maps, they are potentially no-problem tracks, provided that they are physically evident.

None of them were shown on the NZTopo50 mapping when I checked the WAMS topographic layer in February 2013. Some may not pass the 'physically evident' test. Others will be borderline cases, perhaps requiring improved definition or waymarking. Some are built and maintained tracks.

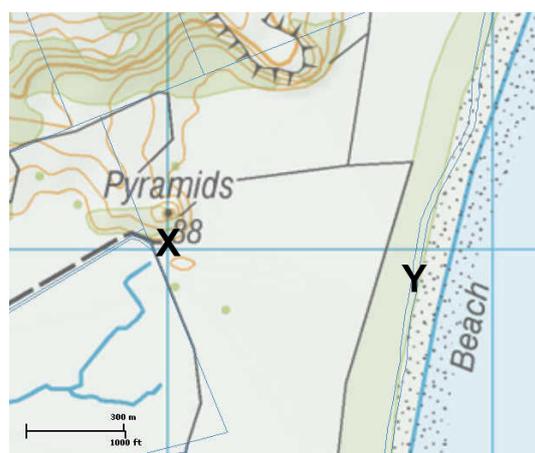
Aramoana Heyward Point Track and Chalkies Track are DOC-managed tracks that have already been added to the WAMS but which are still listed here because they each have a section that is not yet on the NZTopo50 map. DOC classifies them as Tramping Tracks. This means that they are 'mostly unformed with steep, rough or muddy sections' but have 'markers, poles or rock cairns'.<sup>1</sup> Whether or not all sections of them are physically evident as defined above depends on whether they are worn enough to be visible and on the adequacy of their waymarks.

### *Okia Track*

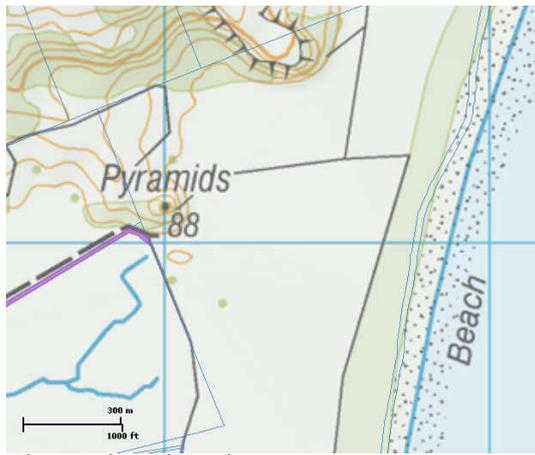
Location: Otago Peninsula

Length of unmapped section, one way: 1 km

Okia Track crosses Okia Reserve from the Pyramids to the beach. The fifteen-minute walk, passing several interpretation signs, is an integral part of the reserve's management plan.<sup>2</sup> The foot-track is the main track of a cluster and is well defined. It is also poled. It has been open since 1998 or earlier. The whole track is visible on the WAMS aerial photographs, together with other tracks of the cluster.

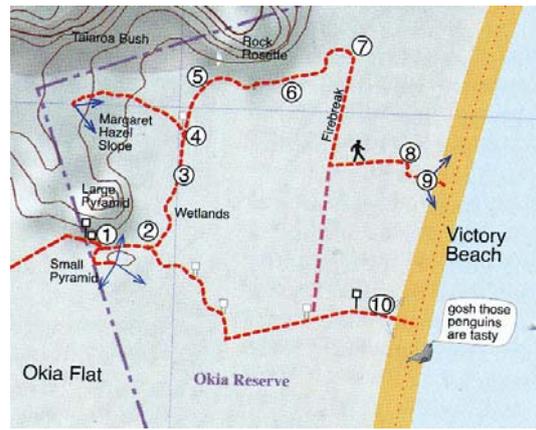


The missing Okia Track (XY).



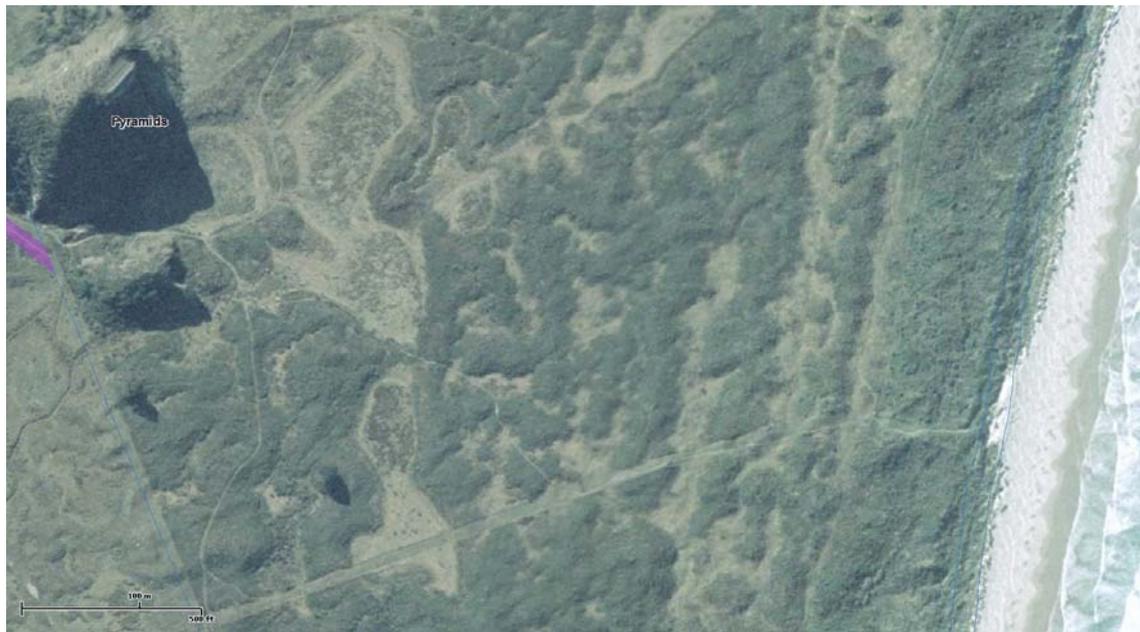
Okia Track, cadastral-topo view.

WAMS, FEB 2013



Okia Track (map by A Hamel).

DUNEDIN TRACKS AND TRAILS (2008)



OkiaTrack is one of a cluster of tracks visible on this aerial photograph.

WAMS, FEB 2013

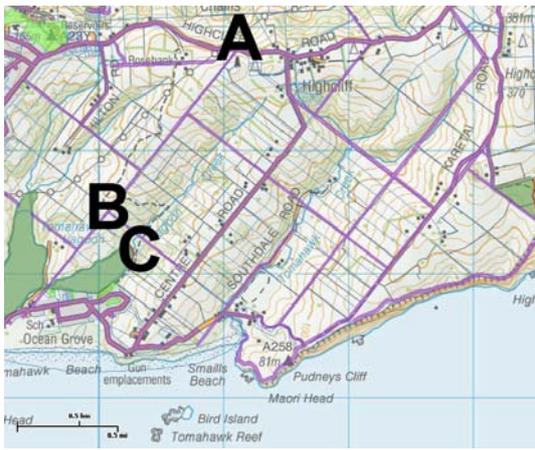
**41-Peg Track (also called Tomahawk Track)**

Location: Otago Peninsula  
 Length of unmapped section, one way: 2.5 km  
 41 Peg Track links Ocean Grove to Highcliff Road. The right to follow this unformed public road was a walkers' cause célèbre in the early 1990s. The track appeared on the A3 sketch-map 'Otago Peninsula Plan for Public Access', approved by the full Dunedin city council on 4 November 1991.<sup>3</sup> Since 1997 it has been promoted in successive editions of a Dunedin city-council leaflet *Otago Peninsula Tracks*.<sup>4</sup> The track is mostly well worn and obvious. Marker posts and stiles help to show the way.



The missing 41-Peg Track (XY), also called Tomahawk Track.

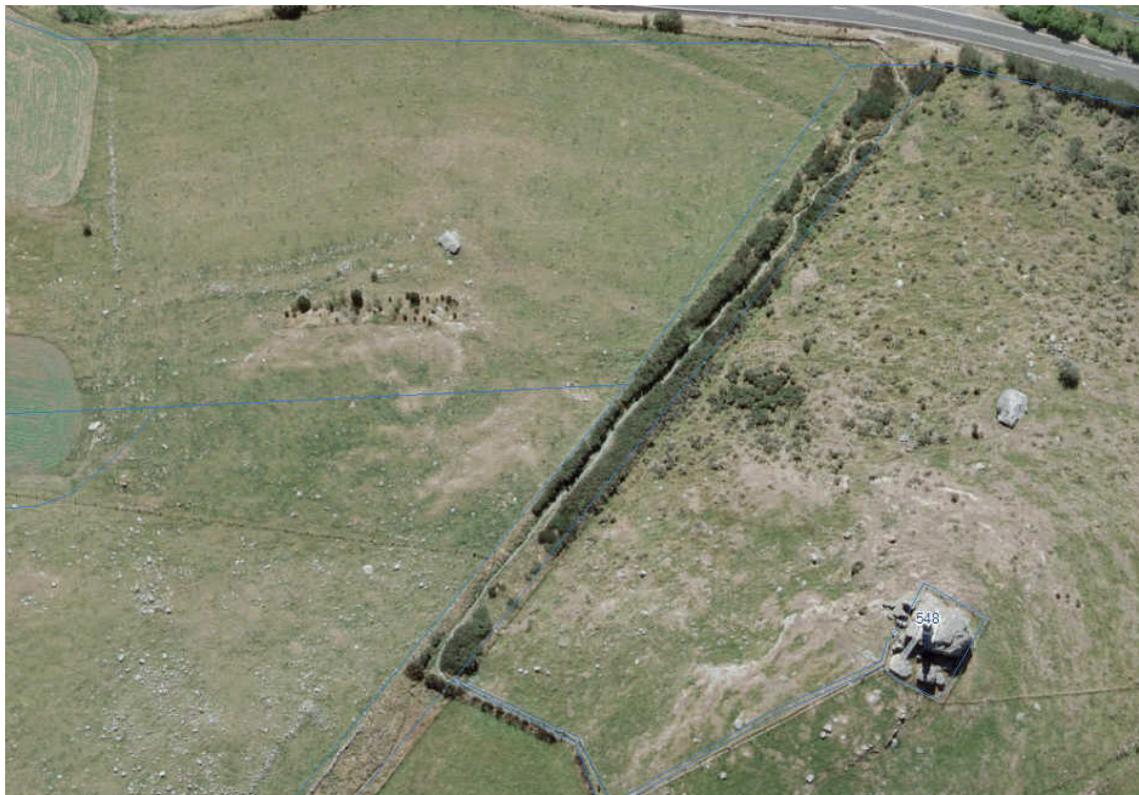
WAMS, FEB 2013



41-Peg Track (ABC), also called Tomahawk Track, cadastral-topo view.



Steps on Highcliff Road at the northern end of 41-Peg Track.



The northern end of 41-Peg Track. The track is clearly visible on aerial photographs.



A marker post on 41-Peg Track.



Looking back to 41-Peg Track from Tomahawk Lagoon.

**Cleghorn Street Track (central section)**

Location: North Dunedin

Length of unmapped section, one way: 1 km

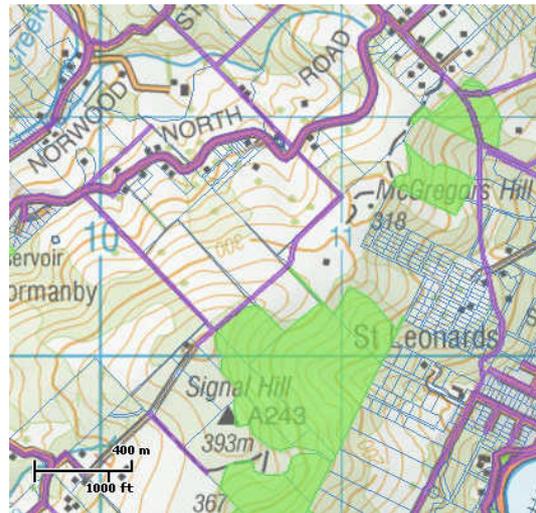
Cleghorn Street Track is a skyline walk linking Signal Hill Road with Cleghorn Street, near the top end of Northeast Valley. As early as 1914, a Dunedin guidebook was sending walkers this way: ‘From the top [of the Government Scenic Reserve on Signal Hill] the visitor may ... proceed along the range northwards and strike the Port Chalmers road close to the Upper Junction.’<sup>5</sup>

The central part of Cleghorn Street, for about one kilometre, is not shown on the NZTopo50 map. This section is only faintly visible as a foot-track across paddocks and is not visible on the WAMS aerial photographs, but it is sufficiently waymarked with orange triangles and several stiles.



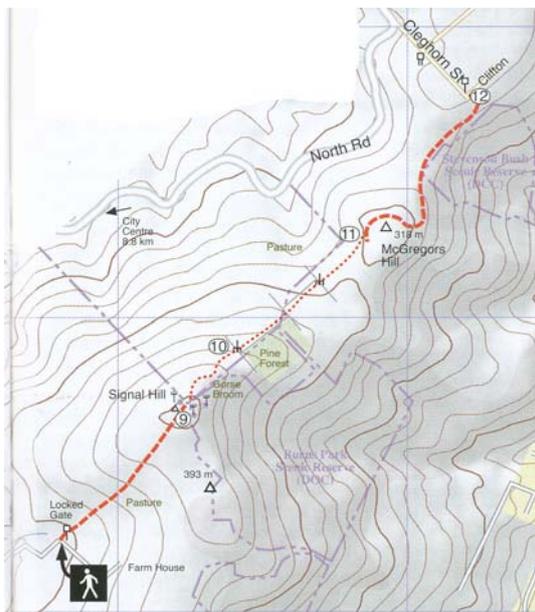
WAMS, FEB 2013

The missing section of Cleghorn Street Track (XY).



WAMS, FEB 2013

Cleghorn Street Track, cadastral-topo view.



DUNEDIN TRACKS AND TRAILS (2008)

Cleghorn Street Track (map by A Hamel).



Cleghorn Street Track, near the aerials on Signal Hill.



The middle section of Cleghorn Street Track (XY) is a faint waymarked track that is not visible on the aerial photographs.



Looking northeastwards down the faint track from point X on Cleghorn Street Track.



A stile and waymark on Cleghorn Street Track.

**Purakaunui Inlet Track**

Location: Northern Coast

Length of unmapped section, one way: about 2 km

Purakaunui Inlet Track winds around the eastern shore of Purakaunui Inlet. A section of it was upgraded in 2011, the work being partly funded by the New Zealand Walking Access Commission.<sup>6</sup> This established foot-track is a strong candidate for mapping, but fitting it neatly onto the NZTopo50 map would be problematic. Purakaunui Inlet Track exposes the limitations of our 1:50,000 topographic mapping.

Although this track is obvious on the ground, on the WAMS aerial photographs much of it is hidden by trees.



WAMS, FEB 2013

The missing Purakaunui Inlet Track (XY). The walk combines sections of driveway, foot-track along the shoreline, and several short sections of road.



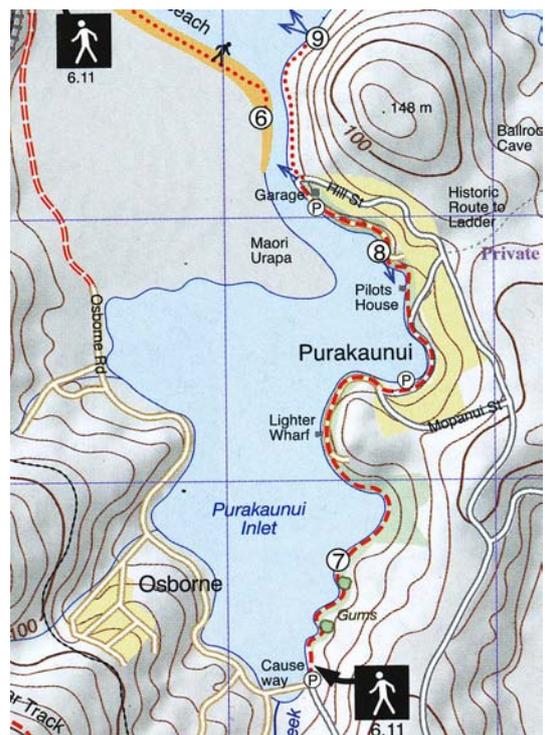
WAMS, FEB 2013

Purakaunui Inlet Track, cadastral-topo view.



WAMS, FEB 2013

Trees hide most of Purakaunui Inlet Track on the aerial photographs.



DUNEDIN TRACKS AND TRAILS (2008)

Purakaunui Inlet Track (map by A Hamel).

***Aramoana Heyward Point Track (southern end)***

Location: Northern Coast

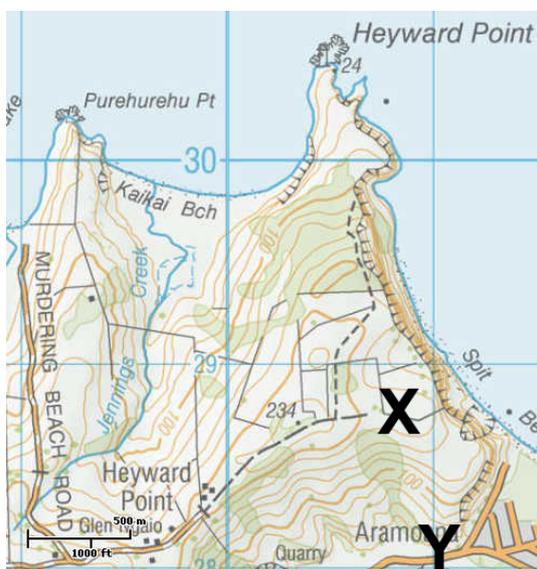
Length of unmapped section, one way: about 0.8 km

The steep southern end of Aramoana Heyward Point Track is not shown on the NZTopo50 map. This part of the track, a faint route across rough grazing, was promoted as a mountain-biking route in the Dunedin-city-council leaflet *Fat Tyre Trails*, published in about 2003.<sup>7</sup>

Since about 2004, Aramoana Heyward Point Track has been promoted as a walk in successive editions of a Dunedin-city-council leaflet *Wandering the West Harbour*.<sup>8</sup> DOC manages the track and lists it in the leaflet *DOC Walks around Dunedin*.<sup>9</sup> A DOC webpage classifies it as a Tramping Track, in other words 'mostly unformed with steep, rough or muddy sections' but having 'markers, poles or rock cairns'. If its waymarking is judged to be adequate, I would expect the steep southern end to appear on the NZTopo50 map as a poled route. Parts of it show up very faintly on the WAMS aerial photographs.

The whole of Aramoana Heyward Point Track has recently been added to the WAMS as a DOC track but its southern end is still not shown on the NZTopo50 map.

Legally, this track is a gazetted walkway. The official name from the *New Zealand Gazette* (1997, p. 2541) is Aramoana-Heyward Point Walkway.



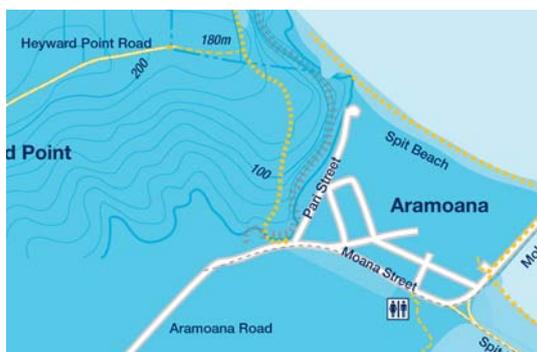
WAMS, FEB 2013

The missing section of Aramoana Heyward Point Track (XY). Note: this extract from the WAMS has been taken with DOC tracks switched off so that it accurately represents the NZTopo50 map.



WAMS, FEB 2013

Aramoana Heyward Point Track, cadastral-topo view. The track has been added to the WAMS as a DOC-managed track (the thin red line).



The southern end of the Aramoana Heyward Point Track is shown clearly in this extract from the Dunedin city council leaflet *Wandering the West Harbour*.



Looking down the steep southern end of Aramoana Heyward Point Track. The track skirts some cliffs and needs care.

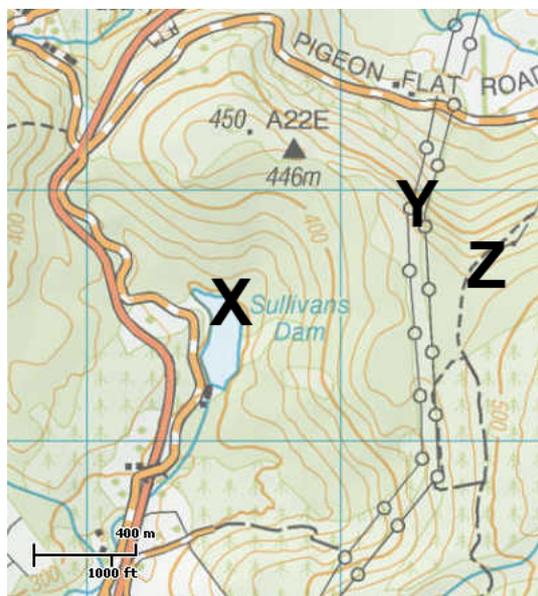
**Cloud Forests of Leith Track**

Location: Mount Cargill

Length of unmapped section, one way: 2 km

Cloud Forests of Leith Track climbs from Sullivans Dam or Leith Saddle to Sullivans Bridle Track. It forms part of Dunedin's unofficial skyline walk. It was built as a result of a donation of \$100,000 from Barbara and Dick Calvert.<sup>10</sup> It opened in 2003. The skyline walk is promoted in the Dunedin-city-council leaflet *Skyline Walks*.<sup>11</sup>

Cloud Forests of Leith Track is well cut and adequately waymarked, but on the WAMS aerial photographs most of it is hidden by trees.



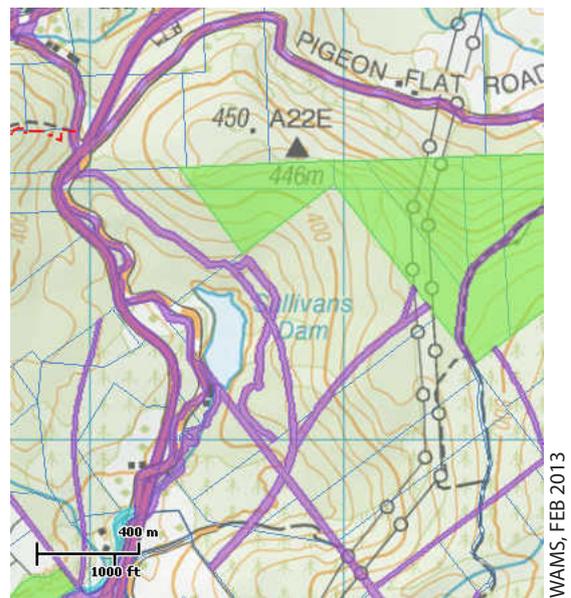
The missing Cloud Forests of Leith Track (XYZ).

**McRaes Weir Track**

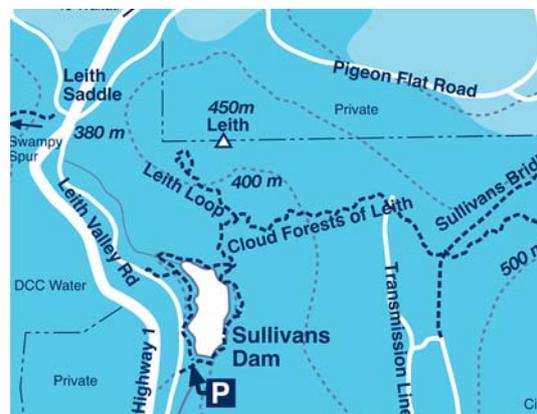
Location: Silver Stream

Length of unmapped section, one way: 1.1 km

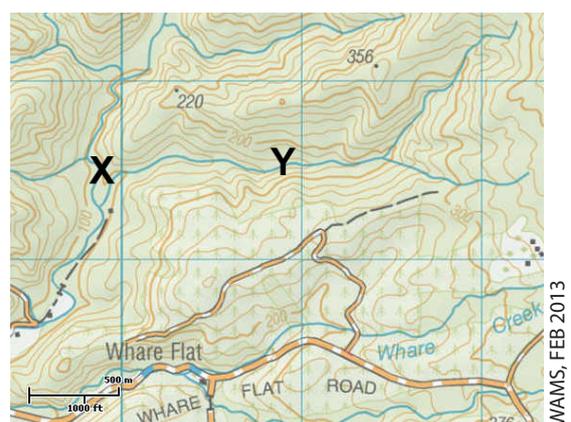
McRaes Weir Track links a point on Racemans Track to McRaes Weir. You can combine McRaes Weir Track with part of Racemans Track and part or all of Tunnel Track (Silver Stream) to make various circuits. Since 2001, McRaes Weir Track has been promoted in successive editions of a Dunedin-city-council leaflet *The Silver Stream Water-race Tracks*.<sup>12</sup> On the WAMS aerial photographs, most of McRaes Weir Track is hidden by trees.



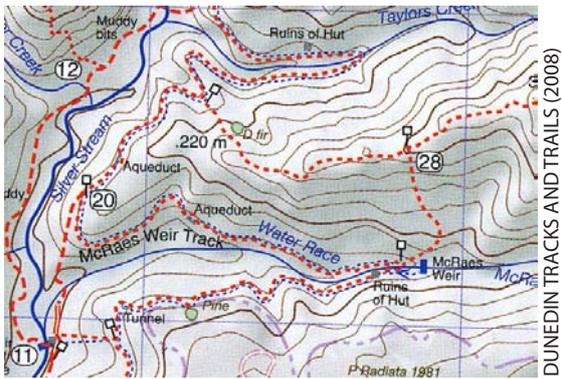
Cloud Forests of Leith Track, cadastral-topo view.



The Cloud Forests of Leith Track is shown clearly in this extract from the Dunedin city council leaflet *Skyline Walks*.



The missing McRaes Weir Track (XY).



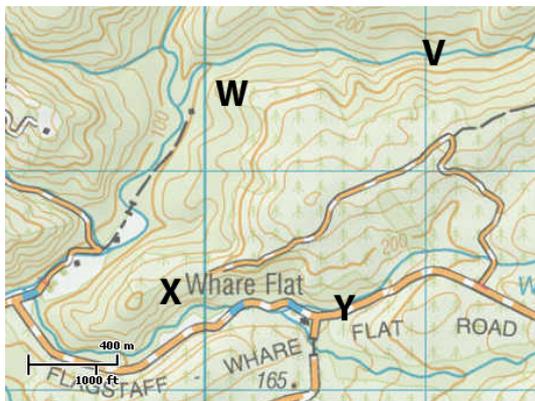
McRaes Weir Track (map by A Hamel).

**Tunnel Track (Silver Stream)**

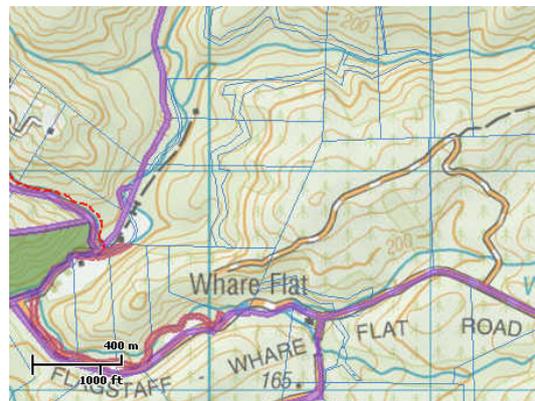
Location: Silver Stream

Length of unmapped section, one way: 3 km

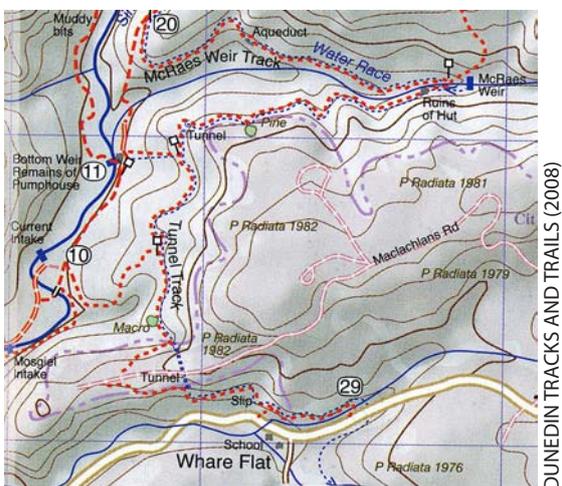
Tunnel Track (Silver Stream) connects a point near the eastern end of McRaes Weir Track to a point on Flagstaff Whare Flat Road. You can combine part or all of Tunnel Track (Silver Stream) with McRaes Weir Track and part of Racemans Track to make various circuits. Since 2001, Tunnel Track has been promoted in successive editions of a Dunedin-city-council leaflet *The Silver Stream Water-race Tracks*. On the WAMS aerial photographs, most of Tunnel Track (Silver Stream) is hidden by trees.



The missing Tunnel Track (Silver Stream) (VWXY).



Tunnel Track (Silver Stream), cadastral-topo view.



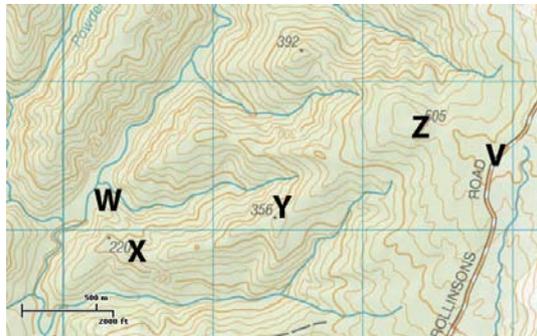
Tunnel Track (Silver Stream) (map by A Hamel).

### ***Steve Amies Track***

Location: Silver Stream

Length of unmapped section, one way: 3.1 km

The Steve Amies Track climbs a long ridge to link a point on Racemans Track to the Swampy access road (a private road). The track is named after the late Steve Amies, the founder of the group that cleared and reopened the water-race tracks in the late 1980s and the 1990s. Since 2001, Steve Amies Track has been promoted in successive editions of a Dunedin-city-council leaflet *The Silver Stream Water-race Tracks*. On the WAMS aerial photographs, most of Steve Amies Track is hidden by trees.



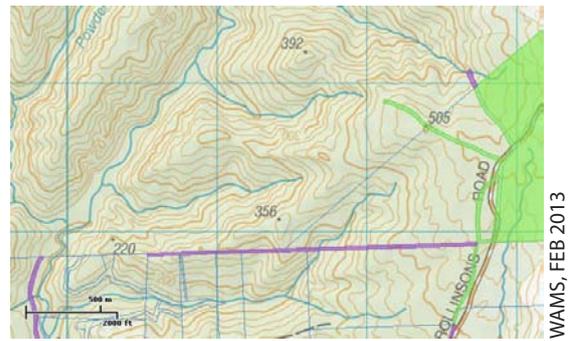
The missing Steve Amies Track (WXYZV).

### ***Racemans Track***

Location: Silver Stream

Length of unmapped section, one way: 6.2 km

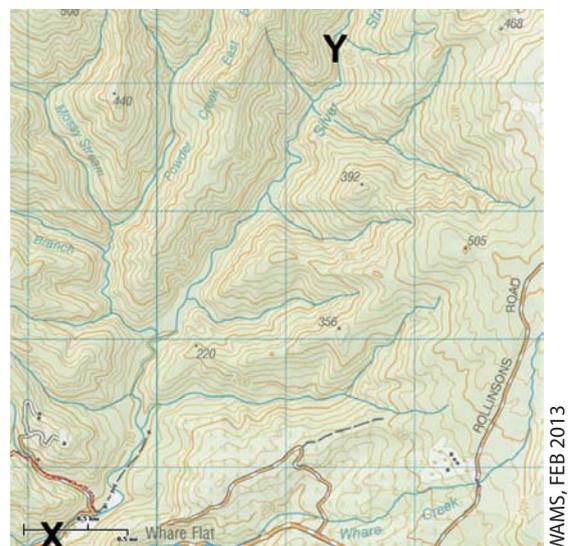
Completed in 1881, the Silver Stream water-race consisted of 29 km of open race, tunnels and pipes. It fell into disuse in the 1960s. A network of tracks provides access to the abandoned water-race and to several weirs. Racemans Track is the backbone of the network, off which six side-tracks branch. The bottom end of Racemans Track is the carpark at the junction of Silverstream Valley Road and Flagstaff Whare Flat Road. Much of Racemans Track is an obvious narrow track through dense bush, following the water-race at a gentle gradient. Racemans Track ends abruptly at the top weir. Since 2001, Racemans Track has been promoted in successive editions of a Dunedin-city-council leaflet *The Silver Stream Water-race Tracks*.



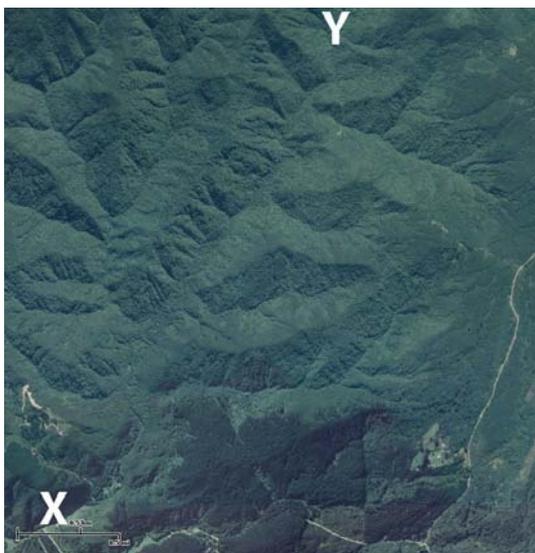
Steve Amies Track, cadastral-topo view.



The long ridge taken by the Steve Amies Track is visible on this aerial photograph, but trees hide the track itself.

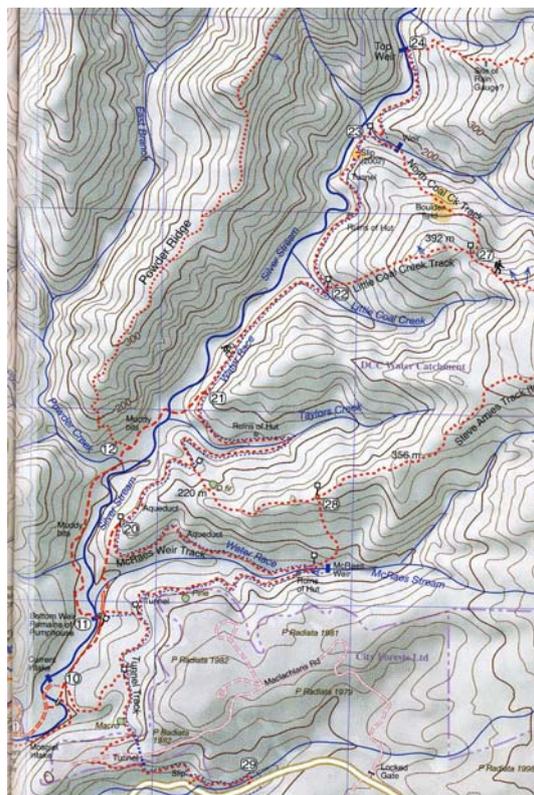


The missing Racemans Track (XY).



WAMS, FEB 2013

On this WAMS aerial photograph, most of Racemans Track (XY) is hidden by trees, as also are the other water-race tracks.



DUNEDIN TRACKS AND TRAILS (2008)

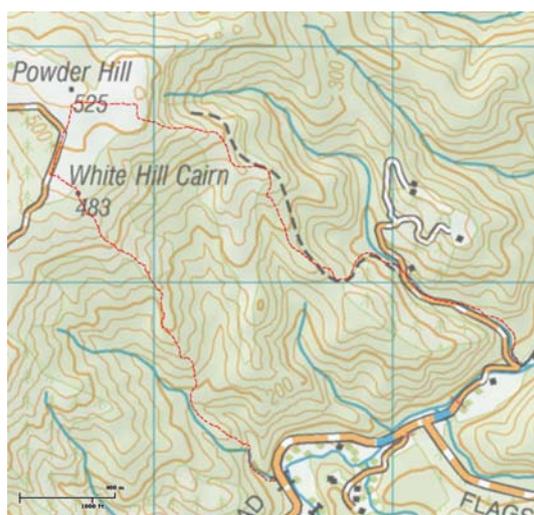
Racemans Track (map by A Hamel).

***Chalkies Track (also called Powder Hill Track)***

Location: Silver Stream

Length of unmapped section, one way: 3.5 km

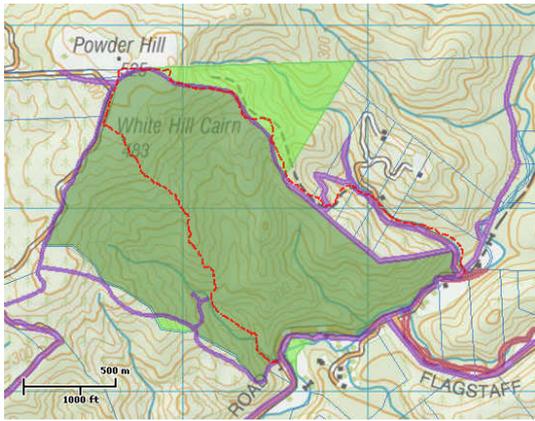
The Chalkies are a line of quartz sandstone cliffs high on the east-facing slopes of Powder Hill. Two DOC tracks climb from Silver Stream to the Chalkies and to Powder Hill summit. These two tracks form a horseshoe walk, the Chalkies being near the bend of the horseshoe. The NZTopo50 map shows only about a third of the horseshoe-shaped track. The WAMS shows the whole of the DOC circuit. The track has the DOC classification of Tramping Track; in other words it is 'mostly unformed with steep, rough or muddy sections' but it has 'markers, poles or rock cairns'. If this way-marking is judged to be adequate, I would expect the missing sections to appear on the NZTopo50 map as a poled route. On the WAMS aerial photographs, most of Chalkies Track is hidden by trees.



WAMS, FEB 2013

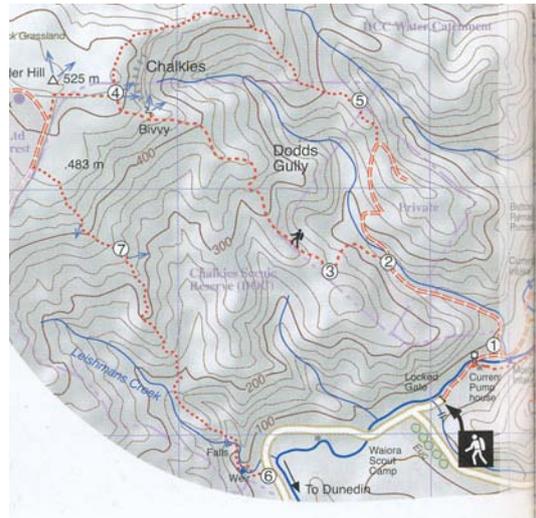
Two-thirds of Chalkies Track is missing from the NZTopo50 map, but it shows up on this extract from the WAMS topographic view because it has been added to the WAMS as a DOC track.

Note: Half of the DOC circuit is a route that *Dunedin Tracks and Trails* calls Leishmans Falls.



WAMS, FEB 2013

DOC's version of Chalkies Track, cadastral-topo view.



DUNEDIN TRACKS AND TRAILS (2008)

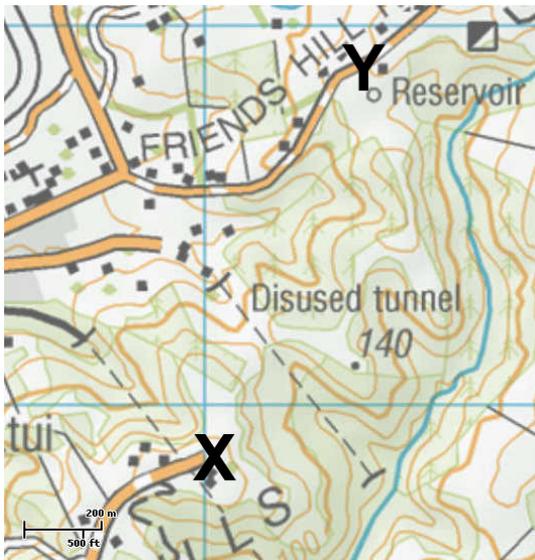
An alternative Chalkies Track, also called Powder Hill Track (map by A Hamel). There is an access issue over part of the northeastern section of this horseshoe walk. The DOC version of Chalkies Track, described previously, avoids this possible problem.

**Chain Hills Track**

Location: Mosgiel

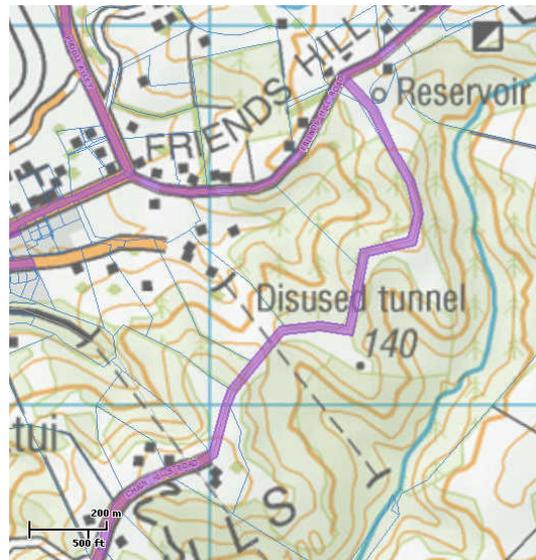
Length of unmapped section, one way: 1.6 km

Chain Hills Track links Chain Hills Road to Friends Hill Road. It is based upon an unformed public road. From the eastern end of Chain Hills Road you head northeast, following markers across paddocks. Much of the way is undefined grass track with gates and stiles. Chain Hills Track is an important link for mountain-bikers who sometimes combine Chain Hills Track with Friends Hill Road, Halfway Bush Road, Brinsdon Road, Dalziel Road and Abbotts Hill Road to make a circuit. This circuit was promoted as a mountain-biking route in the Dunedin city-council leaflet *Fat Tyre Trails*, published in about 2003.



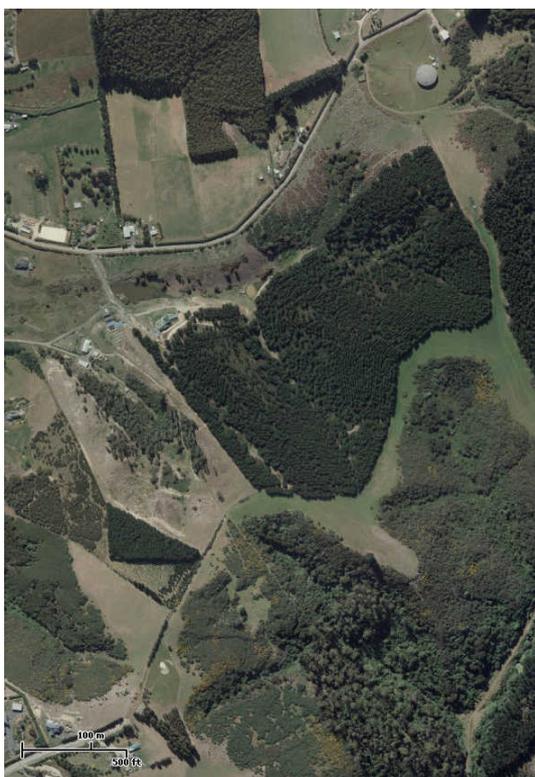
WAMS, FEB 2013

The missing Chain Hills Track (XY).



WAMS, FEB 2013

Chain Hills Track, cadastral-topo view.



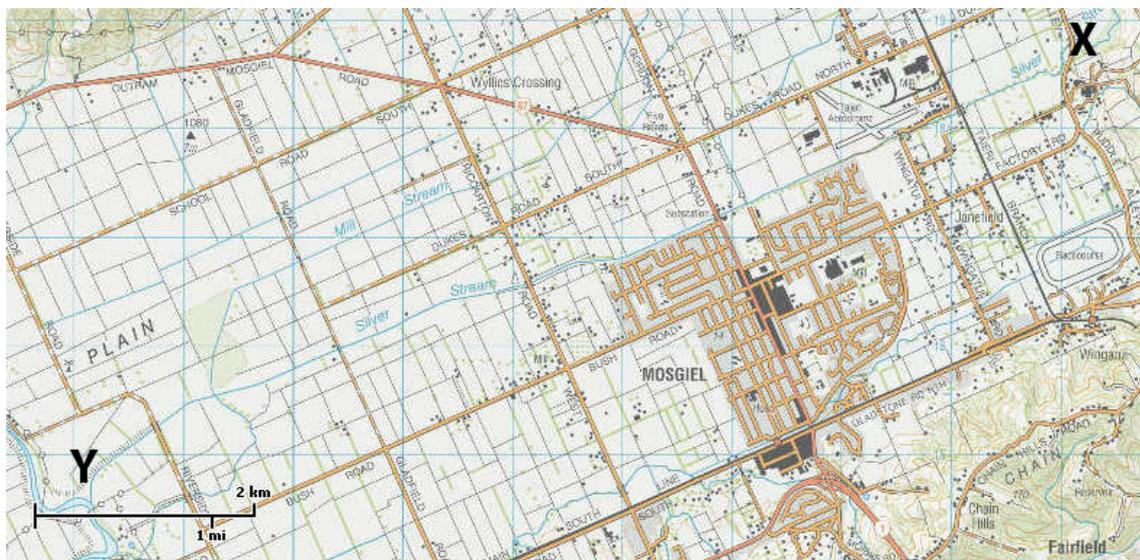
The unformed public road followed by Chain Hills Track is obvious on this aerial photograph.

***Silver Stream Flood Banks (also called Silver Stream Esplanade Reserve)***

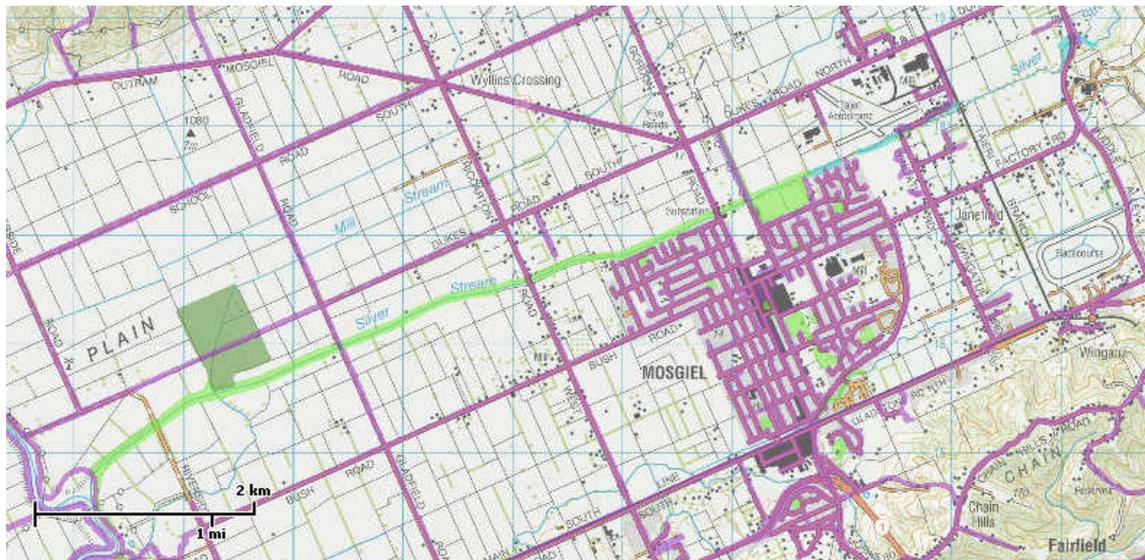
Location: Mosgiel

Length of unmapped section, one way: 9 km

This flat track follows the flood banks of Silver Stream. In about 2006 the Dunedin-city-council track database recorded it as being 1.8 km in length. By 2008 it had grown to 8 km. Antony Hamel wrote that ‘the flood banks, like the beach, are very popular as short local walks. For non-locals they are an acquired taste’.<sup>13</sup> On the WAMS aerial photographs, most of this track is visible as worn narrow foot-tracks along the tops of the flood banks.



The missing Silver Stream Flood Banks tracks (XY).



WAMS, FEB 2013

Silver Stream Flood Banks, cadastral-topo view. Most of the 8 kilometres is public reserve (the light green band). One section is esplanade reserve (the blue line). A few sections may be privately owned.



WAMS, FEB 2013

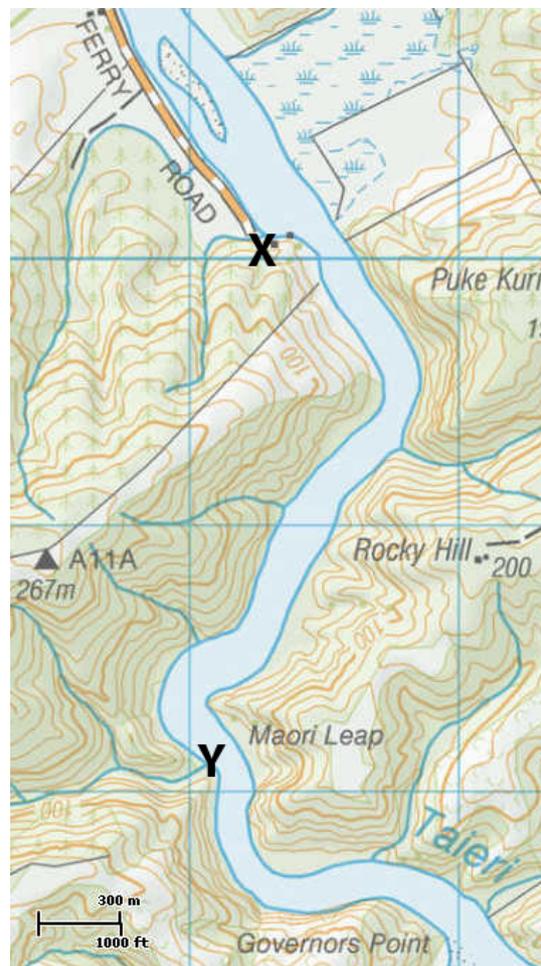
Aerial view of a short section of the Silver Stream flood banks. The narrow foot-tracks are clearly visible.

***Taieri Millennium Track***

Location: Taieri River

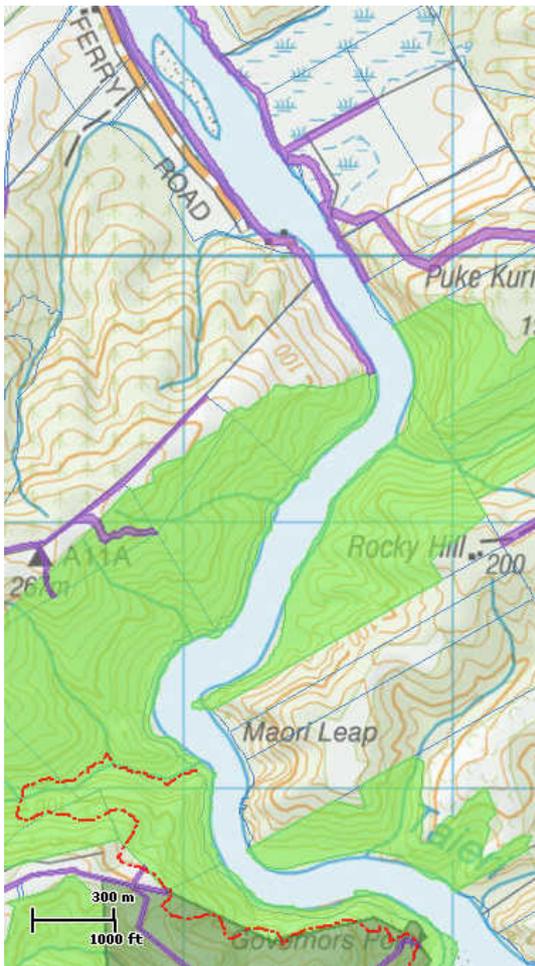
Length of unmapped section, one way: 2.8 km

Going from north to south, this well-made track starts at the southern end of Taieri Ferry Road, on the west bank of the Taieri River. It follows the riverside or valleyside down to a junction with the Taieri Mouth Track, 300 m west of John Bull Flat. Taieri Millennium Track, which Otago regional council developed and opened in 2001, is managed by Clutha district council. The council promotes it in the leaflet *Walking and Bike Tracks in Clutha*.<sup>14</sup> Some parts of the track are visible on the WAMS aerial photographs. Some parts are hidden by trees.

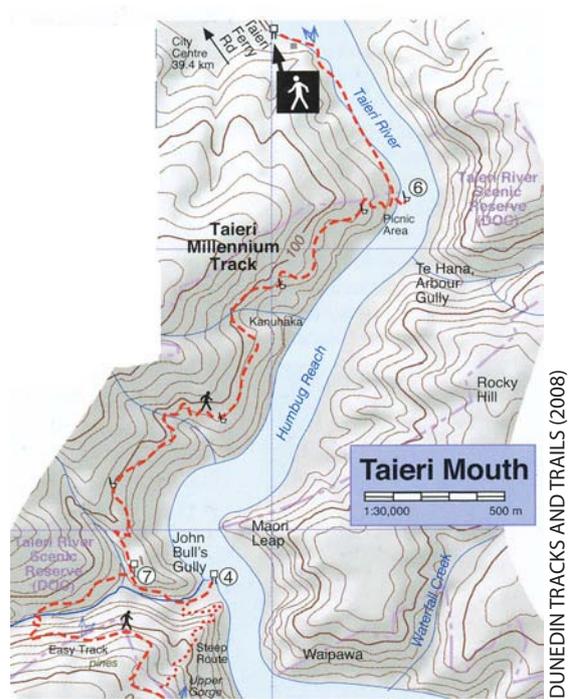


WAMS, FEB 2013

The missing Taieri Millennium Track (XY).



Taieri Millennium Track, cadastral-topo view. The thin red line in the bottom part of the extract is the Taieri Mouth Track.



Taieri Millennium Track (map by A Hamel).

**18. Taieri Millennium Track**

Turn right into Taieri Ferry Road 4km north of Waihola. Just before the one lane bridge turn right and carry on to the end of the riverside road where you will be able to park. This moderate 4–5 hour return walk follows the Taieri River through native bush to a picturesque area known as John Bull Gully. You can turn around and return to the start or carry on to Taieri Mouth.



Taieri Millennium Track is promoted in a Clutha district council leaflet *Walking and Bike Tracks in Clutha*.



Aerial view of Taieri Millennium Track (AB).

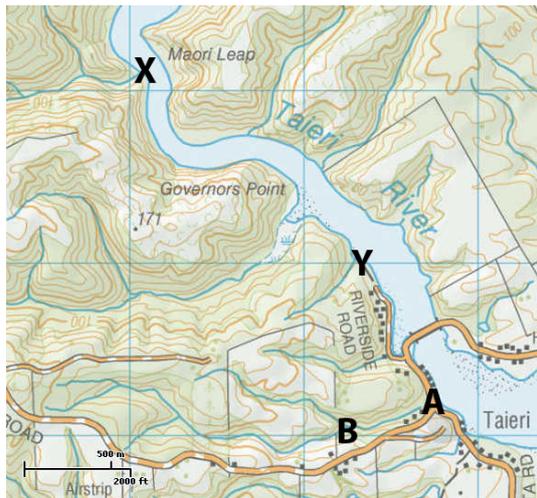
***Taieri Mouth Track (which DOC calls Taieri River Track)***

Location: Taieri River

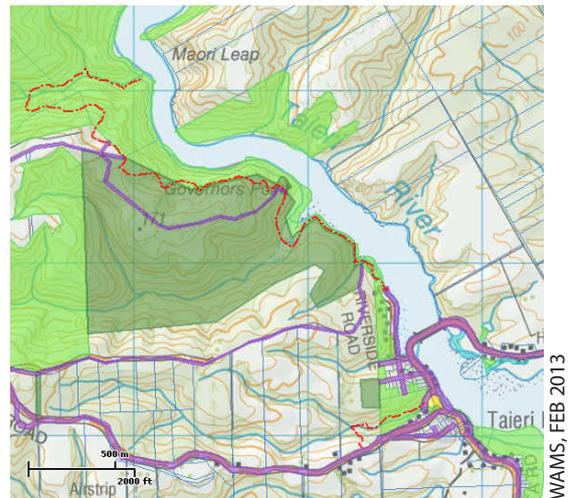
Length of unmapped section, one way: 4.5 km

Taieri Mouth Track follows the Taieri River from Taieri Mouth up to John Bull Flat, a grassy picnic area. The track is in Clutha district council's area. It is managed by DOC, which has promoted it since at least 1995, firstly in the leaflet *Taieri River and Picnic Gully Track*<sup>15</sup> and more recently in the leaflet *DOC Walks around Dunedin*.<sup>16</sup> DOC classifies Taieri Mouth Track as a Walking Track. This means that the track is 'mostly well formed' and 'clearly signposted'.<sup>17</sup>

Taieri Mouth Track has been added to the WAMS as a DOC track but it is not shown on the NZTopo50 map. Some parts of the Taieri Mouth Track are visible on the WAMS aerial photographs. Some parts are hidden by trees.



The missing Taieri Mouth Track (XY). Note: this extract from the WAMS has been taken with DOC tracks switched off so that it accurately represents the NZTopo50 map.



Taieri Mouth Track, cadastral-topo view.



Aerial view of part of Taieri Mouth Track (ABCD). Some parts of the track are clearly visible. Trees hide others. This extract from the WAMS was taken with DOC tracks switched off.

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## Type 3. Routes

In general use among trampers, the word ‘route’ can sometimes mean a way that is not clearly visible on the ground but which is poled or cairned or otherwise waymarked. But some tramping routes are infrequently waymarked or not waymarked at all. Which tramping routes should appear on our topographic maps? To answer this question, firstly we need to consider the various meanings of the label ‘Route’ in track classification systems and also its meaning in LINZ’s NZTopo database.

### Track Classifications in the Dunedin Area

At the time of writing, two track classification systems are in use in the Dunedin area. The city council’s Track Policy and Strategy (1998) employs a multi-use classification that claims to cater for both walking and mountain-biking. This local system has five categories: Accessible, Easy, Moderate, Hard and Route.<sup>1</sup> The well-known guidebook *Dunedin Tracks and Trails* (2008) has adopted it.

Nationally, DOC grades its tracks for different visitor groups and according to each track’s degree of difficulty, standard of surface formation and gradient. DOC’s main classifications are: Short Walk, Walking Track, Tramping Track, and Route.<sup>2</sup>

This mix of classification systems, like shoes sizes, is confusing. What is labelled Moderate by the Autonomous Region of Dunedin may be labelled Walking Track by DOC. Track characteristics that on council-owned land earn the grade Route might on DOC-managed land be considered to be too demanding and serious for the track to carry any official grade.

There’s a possibility that changes may soon resolve this situation. The city council’s Track Policy and Strategy is looking a little elderly. It would benefit from revision and modernisation. At some point the council may consider adopting the Standards New Zealand track classification system, as used by DOC, for uniformity with the rest of New Zealand.

#### *The Route Category*

The Route category in particular is a source of inconsistency. At present (this may change) the city council applies its Route label to a wider upper range of routes than what DOC calls Routes. The most demanding Routes in the council’s track records – such as Rosella Ridge and Waikouaiti River – are unmaintained and largely unwaymarked. Recent city-council track leaflets define the Route category as:

Rough surface with minimal vegetation clearance, few markers to indicate the way.  
Track will be steep for some distance.<sup>3</sup>

Like the city-council Routes, the DOC Routes ‘cater for experienced backcountry users who have navigation and river-crossing skills’.<sup>4</sup> But – here is the difference – for a track to comply with the DOC standards for a Route, that track must be fully waymarked:

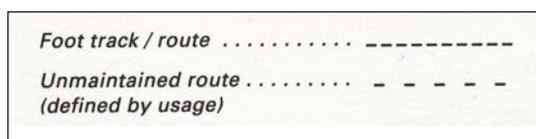
Marking on routes shall be by way of cairns, poles or markers and they shall be visible from one to the next, in either direction, in all weather conditions except moderate to heavy mist ... Unmarked routes (generally defined by use and with no marking

or vegetation clearance) are not considered to be routes covered by this Handbook. [*Tracks and Outdoor Visitor Structures*, 2004.]

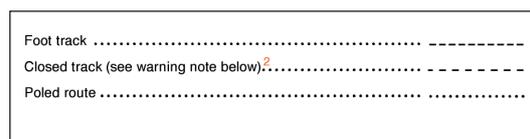
For the time being, in the Dunedin area we're stuck with these two ideas of what to expect a Route to look like. The Standards New Zealand handbook from which I took the above quote may gradually influence the decision-makers and help to bring consistency and uniformity into the track standards used in the Dunedin area.

## Tramping Routes – the National Criteria Prescribed for the NZTopo Database

In the late 1990s, LINZ began changing one of the symbols on the Topographic Map 260 series maps. On new editions, it replaced the foot-track symbol with two symbols: a 'Foot track / route' and an 'Unmaintained route (defined by usage)'. But in 1999 the showing of unmaintained routes became controversial when faint hunting trails that were not adequately waymarked appeared on a new edition of *Egmont* Topographic Map 260-P20. I discussed this Taranaki disagreement, and the pros and cons of showing unmaintained routes, in 'Buskin Track (80114) and Others'.<sup>5</sup> There is no need to reproduce that discussion here, however, because in September 2009 the map symbols changed again. The NZMS 260 maps were replaced by the new NZTopo50 maps, and on the legends the wording 'Unmaintained route (defined by usage)' was replaced by 'Poled route', possibly a narrower category, depending on how you interpret these two labels.



Foot-track and route symbols used on Topographic Map 260 maps from 1999 to 2009 (enlarged).



Foot-track and route symbols presently in use on NZTopo50 maps.

### *What Does LINZ Mean by a 'Poled route'?*

What rules do LINZ contractors observe when deciding whether to add a foot-track or a tramping route to the NZTopo database? The following is almost the whole stipulation on foot-tracks. It comes from a 2004 LINZ specifications document that appears to be still current:

#### 5.115.2 Foot Tracks ...

These are defined as deliberately formed tracks for the purpose of moving foot traffic. Foot tracks are generally unable to be identified using the orthophotos. Verify track information in the field or by using a 3rd party authority. In remote, mountainous regions all foot tracks should be shown, regardless of length. In urban and rural areas, capture only significant foot tracks. Do not capture access tracks from a road to a farmhouse or other dwelling unless they are particularly significant ...

Where appropriate an attribute of 'poled route' should be added. Poled routes are normally in open country, above the bush line and will be marked by either strategically placed wooden poles stuck in to the ground, or metal standards and/or stone cairns.

The 'unmaintained' attribute will in general either be on the data supplied [to the contractor] by LINZ or will be available from DOC. These tracks are maintained to the minimum Department of Conservation (DOC) Track Service Standards.<sup>6</sup>

The above description of a poled route is useful and is straightforward enough to guide our examination of unmapped tracks and routes in the Dunedin area, and especially of those in the Silver Peaks. (The reference to the ‘unmaintained’ attribute may be out of date now that unmaintained routes are no longer shown on the topographic maps.)

As our topographic mapping continues to evolve, the desirability of showing waymarked routes will remain an important part of the design considerations.

### **The Routes of the Silver Peaks, Silver Stream and Maungatua**

We are now nearly in a position to answer the question we asked earlier: which tramping routes should appear on our topographic maps? For the Dunedin area, this question mainly boils down to: which Silver Peaks and Silver Stream and Maungatua routes should be shown on our topographic maps?

But firstly we need to decide whose rules we will follow. To sum up on routes, DOC’s written definition of a Route and LINZ’s one for a poled route both specify definite way-marking. So, in theory, anything described as a Route in a DOC leaflet will be adequately waymarked, as also will anything shown as a poled route on an NZTopo50 map. In contrast, something called a Route in a Dunedin-city-council leaflet might be a high and exposed tramp along an unmaintained and unwaymarked way. When we come to look at individual tramping routes, we will stick with the DOC-SNZ definition of a Route; ie, for each route we will ask ourselves whether it meets the DOC-SNZ specification.

There’s talk of the city council changing to the DOC-SNZ classification system. But the guidebook *Dunedin Tracks and Trails*, which loyally uses the city council’s classification scheme and which may remain in print for some years, lists twelve of fourteen Silver Peaks tramps as Routes. Some of these are ‘challenging tramping and serious bush bashes for the hardest of trampers’, only lightly marked, prone to becoming overgrown, and difficult to follow.<sup>7</sup> They would not meet the LINZ specification to be shown as poled routes on the NZTopo50 maps, because they are not marked with ‘strategically place[d] wooden poles stuck in the ground, or metal standards ... or stone cairns’.

Just one or two of the twelve city-council Routes, such as Green Ridge, have become worn highways that get a LINZ tick and are justifiably shown on the NZTopo50 maps.

There will be borderline cases. Deciding whether to depict a waymarked tramping route may present map-makers with conflicting considerations. For example, parts of Raingauge Spur, which rises from the Silver Stream top weir, are steep, rough, exposed, and poorly defined above the bush. Yet Raingauge Spur is well-enough established to be included in the city council’s leaflet, *The Silver Stream Water-race Tracks*, first published in 2001. The latest version of this leaflet was published in 2012.<sup>8</sup> It is available free from visitor centres and is also on the city council’s website.

*Dunedin Tracks and Trails* describes three demanding tramps to the summit of Maungatua and gives them the city-council grade of Route.<sup>9</sup> All three have one or two sections that tend to become overgrown with gorse and broom, which makes them difficult to follow. None of these three ways are shown on the NZTopo50 map (apart from one kilometre of track to the north of Three Kings).

One of the three tramps starts from Woodside Glen and is waymarked to above the bushline (being part of DOC’s Maukaatua Route); DOC minimally maintains this Woodside Glen–bushline section, clearing growth every three to five years. The other two routes are unmaintained, except by use. But the three routes provide the main walking access to the Maungatua Scenic Reserve and are therefore likely to remain in occasional use by experienced trampers. At present it seems likely that most sections of these rough and testing tramps to the top of Maungatua do not meet the LINZ specification to be shown as poled routes on the NZTopo50 maps.

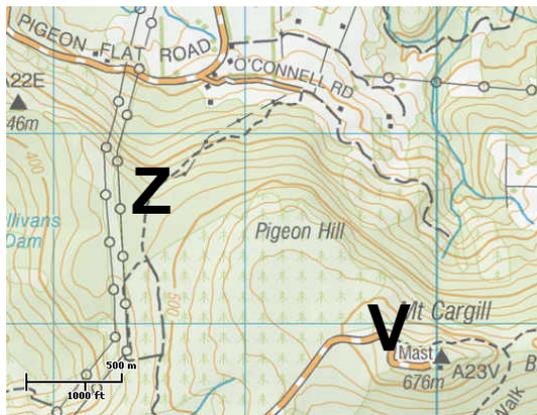
*Dunedin Tracks and Trails* gives all the following tracks the city-council grade of Route.

**Escarpment Track**

Location: Mount Cargill

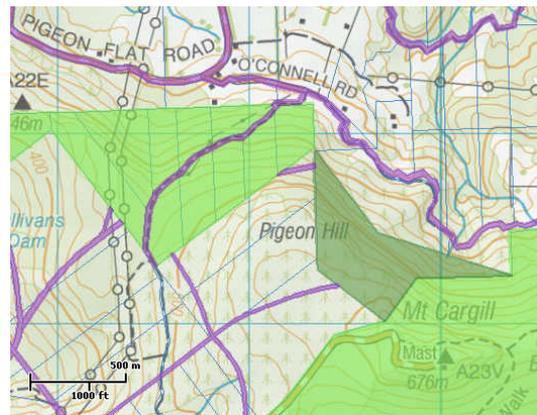
Length of unmapped section, one way: 2.3 km

Escarpment Track is a well-cut tramping route up Mount Cargill. It starts at the four-way junction where Cloud Forest Track meets Sullivans Bridle Track (also known as Telecom Track). Escarpment Track has some steep and rough sections. The top of the track is the Cowan Road carpark near the summit of Mount Cargill. Escarpment Track forms part of Dunedin’s unofficial skyline walk, which is promoted in the Dunedin city-council leaflet *Skyline Walks*.<sup>10</sup> The leaflet advises people that Escarpment Track is a rough track that requires sturdy boots and is ‘more suited to confident trampers than day walkers’. On the WAMS aerial photographs, most of Escarpment Track is hidden by trees.



WAMS, FEB 2013

The missing Escarpment Track (ZV).



WAMS, FEB 2013

Escarpment Track, cadastral-topo view.



DUNEDIN TRACKS AND TRAILS (2008)

Escarpment Track (map by A Hamel).



Escarpment Track is shown clearly in this extract from the Dunedin city council leaflet *Skyline Walks*.

**Harbour Cone via Allen Farm**

Location: Otago Peninsula

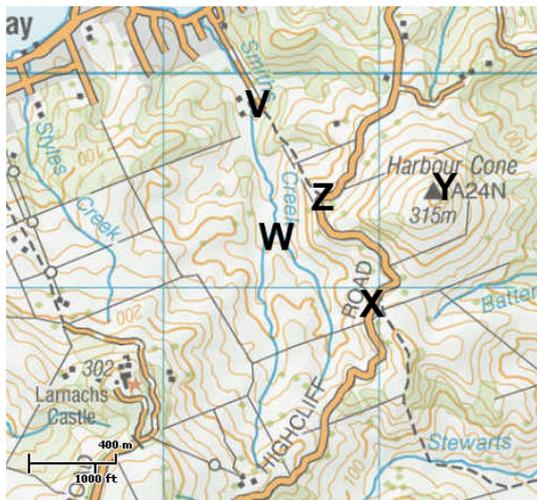
Length of unmapped section, one way: 1.3 km

**Harbour Cone via Smiths Creek**

Location: Otago Peninsula

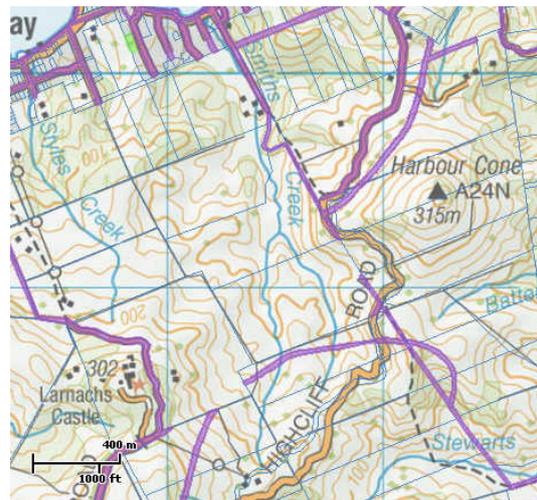
Length of unmapped section, one way: 1.9 km

In 2008 Dunedin city council bought the Akapatiki A Block, loosely referred to as the Harbour Cone–Peggys Hill farm. By June 2009 the council had opened these two walking tracks. A map is available on the city council’s website.<sup>11</sup> The guidebook *Dunedin Tracks and Trails* gives these two Harbour Cone tracks a city-council grade of Route, probably because the tracks are not yet worn and are only sparsely waymarked. The tracks are not yet visible on the WAMS aerial photographs but will probably become so through use.



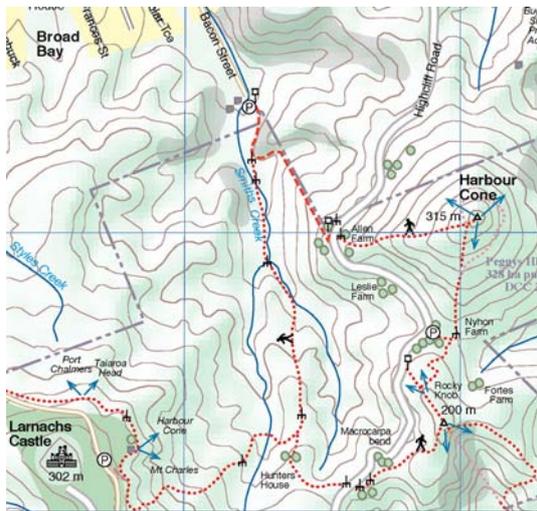
WAMS, FEB 2013

The missing Harbour Cone tracks (VWXY and VZY).



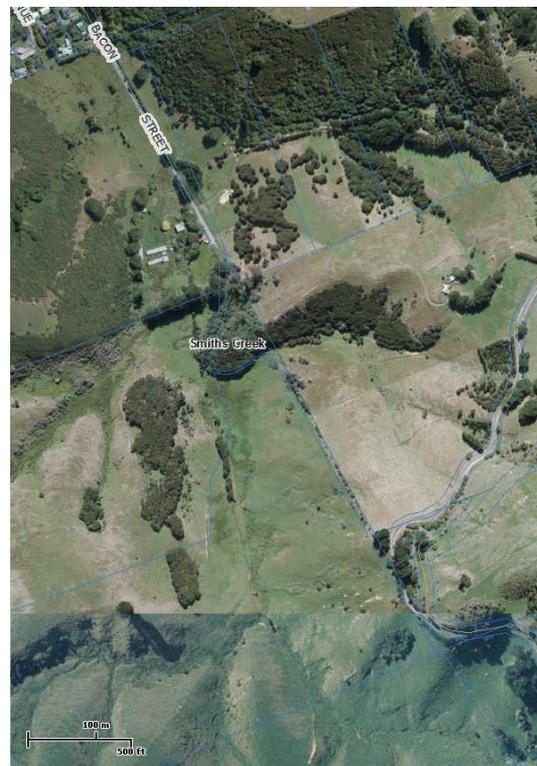
WAMS, FEB 2013

Harbour Cone tracks, cadastral-topo view.



DCC WEBSITE

Harbour Cone tracks (map by A Hamel).



WAMS, FEB 2013

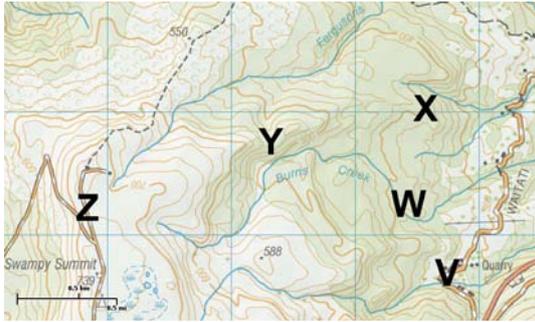
The Harbour Cone tracks are not yet worn enough to be visible on the WAMS aerial photographs.

***Rustlers Ridge via Pipeline Track***

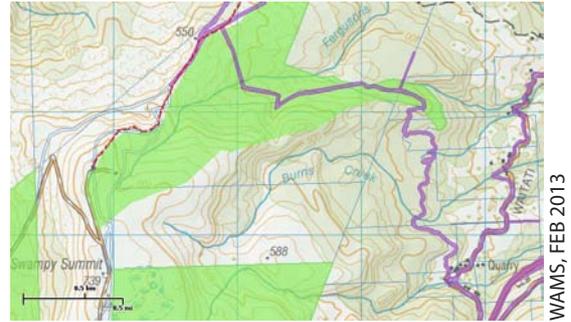
Location: Swampy Summit

Length of unmapped section, one way: 5.5 km

Rustlers Ridge drops northeastwards from a point 500 m north of Swampy Summit. The ridge lies between Burns Creek to its south and Fergusons Creek to its north. Rustlers Ridge via Pipeline Track starts on Waitaki Valley Road and follows a rough tramping track along a pipeline to reach the bottom of Rustlers Ridge. Some parts of the ridge are well defined, but the route in the upper section is not always obvious. Rustlers Ridge via Pipeline Track is promoted in the Dunedin-city-council leaflet *Rough Tracks*.<sup>12</sup> Some parts of it are visible on the WAMS aerial photographs. Some parts are hidden by trees.



The missing Rustlers Ridge via Pipeline Track (VWXYZ).



Rustlers Ridge via Pipeline Track, cadastral-topo view.



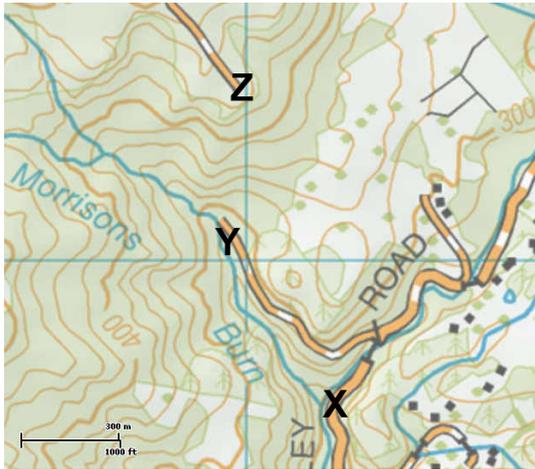
Aerial photograph of part of Rustlers Ridge (XYZ). In the centre is the tracks crossroads at Burns Saddle (Y). Several sections of the track along Rustlers Ridge are visible on this photograph.

**Morrison's Burn Track**

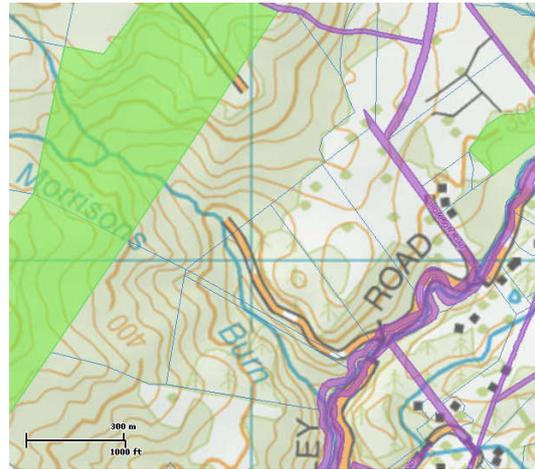
Location: Leith Valley

Length of unmapped section, one way: 1.3 km

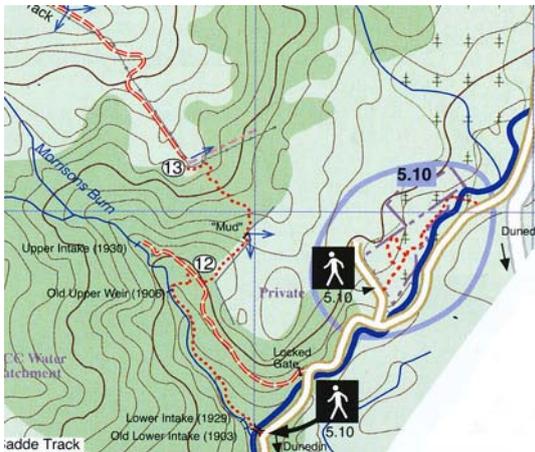
Morrison's Burn drains one of the catchments to the east of Swampy Ridge. The ridge to the north of Morrison's Burn carries a 4WD road known as the Powerline Track. Morrison's Burn Track provides a way up from the Leith Valley to the southeastern end of the Powerline Track. It is a lightly worn tramping track with limited waymarks. Morrison's Burn Track is promoted in the Dunedin-city-council leaflet *Rough Tracks*. On the WAMS aerial photographs, this track is hidden by trees.



The missing Morrison's Burn Track (XYZ).



Morrison's Burn Track, cadastral-topo view.



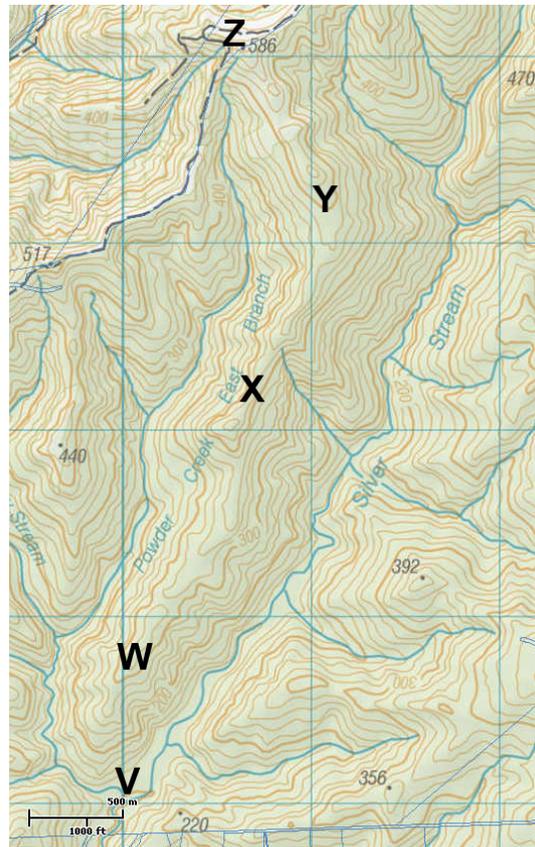
Morrison's Burn Track (map by A Hamel).

**Powder Ridge**

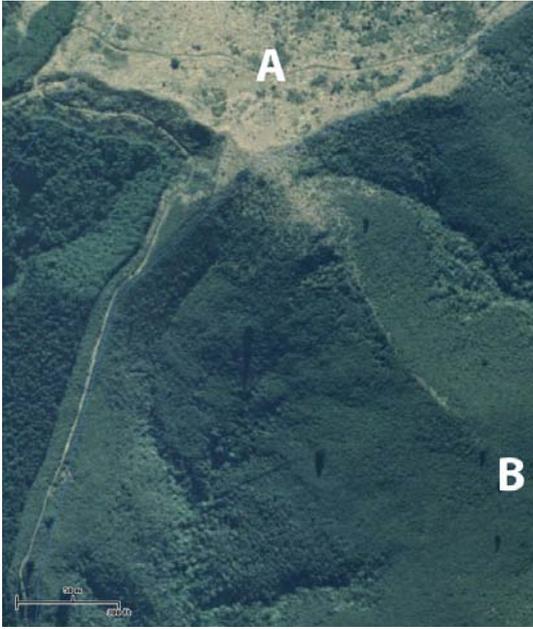
Location: Silver Stream

Length of unmapped section, one way: 4.8 km

Powder Ridge lies between Silver Stream and Powder Creek East Branch. The ridge provides a route from Silver Stream to Long Ridge. It forms part of a classic all-day tramp. The last section of Powder Ridge, through tussock and low scrub, is difficult to follow. On the WAMS aerial photographs, most of the track along the ridge is hidden by trees.

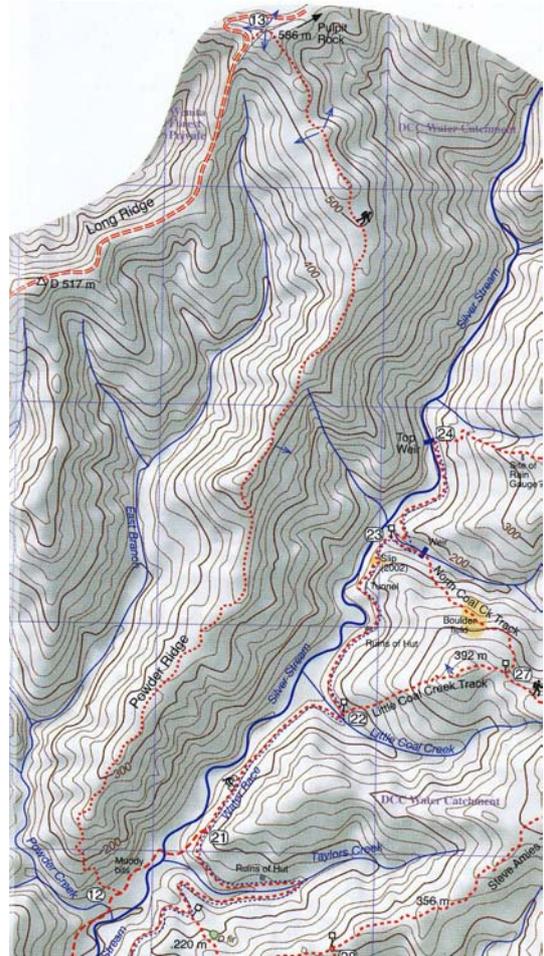


The missing Powder Ridge Track (VWXYZ).



WAMS, FEB 2013

Aerial photograph of the top section (AB) of Powder Ridge. The faint track is visible here. Lower down, trees hide most of the track.



DUNEDIN TRACKS AND TRAILS (2008)

Powder Ridge (map by A Hamel).

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## Summary

### Local Aspects (That Apply to Dunedin)

Information about Dunedin's tracks is now far more easily available than it was in 2005. Dunedin's walkers are fortunate to have Antony Hamel's detailed and inspiring guidebook, about four thousand of which have been sold. Yet even since that book's publication in 2008, the technology of mapping and of track management has continued to improve. Many people, now, will search for track information online. At the time of writing, if they reach the city council's tracks webmap, they will find it still under construction; but eventually, perhaps in late 2013, this webmap will contain details of most of Dunedin's tracks. If they reach the topographic layer of the WAMS and look for, say, the Silver Stream water-race tracks, they won't find them yet. But it is possible that the Walking Access Commission will consider adding these tracks to the WAMS.

Because of these online developments, the matter of missing tracks on LINZ's topographic maps of the Dunedin area may not be quite the issue it was in 2005. But it remains an issue, and nationally rather than just locally.

### National Aspects

#### *Communications*

In a cabinet paper in December 2004, Jim Sutton, the minister for rural affairs, said that

most of the necessary information about current access is held by Land Information New Zealand and other sources, in particular local government and the Department of Conservation. It all needs to be correlated and made available in a much more publicly-accessible form.<sup>1</sup>

The main context behind this statement was the need for cadastral information, a need that the WAMS is now meeting very successfully. A second aspect of 'information about current access' is the need for our topographic maps to show existing tracks and routes as fully and accurately as possible. Both my studies have shown that some tracks are falling through the cracks – or yawning gaps – in the communication system.

Taieri Mouth Track, for example, has existed since at least 1995. It is an obvious track, adequately maintained. It has not yet reached the NZTopo50 map. It is now visible as a DOC track on the WAMS, but this welcome advance is merely further evidence that the track physically exists and so should be on the NZTopo50 map.

Taieri Millennium Track, opened in 2001, is a 'quality benched track'.<sup>2</sup> It has not yet been added to the NZTopo50 map or to the WAMS. It was developed by Otago regional council but is managed by Clutha district council. So, to use a fashionable term, the track has at least two obvious stakeholders. With their support and with leadership from the Walking Access Commission, it ought to be possible for this track to be added to the NZTopo database and hence also automatically to the WAMS.

### *Mapping in General*

This update of my 2005 study has contained some encouraging news on mapping. Locally, thirteen tracks or sections of track have been added to the Otago Peninsula on the NZTopo50 maps. Nationally, even in a world that is blasé to technological change, the WAMS is a remarkable resource. So, in 2013, how far have we journeyed towards the long-term goal of ideal mapping?

In late 2003, after the first Acland report on walking access, the process of improving our maps looked likely to involve three separate areas of revision and redesign:

- Firstly, our 1:50,000 topographic maps would need to show all the walking tracks that physically existed and that could be depicted at the scale of 1:50,000. These maps would also need to show some of our waymarked tramping routes.
- Secondly, outdoor recreators would need freely available cadastral maps indicating legal access, such as public roads, the existing fragments of the Queen's Chain, walkway easements, and the boundaries of national parks, conservation parks, reserves and other public lands.
- Thirdly, in the long term, outdoor recreators would need a public-access topographic map series that distinguished between public tracks and private tracks, without the aid of a cadastral overlay.

We will look at each of these areas separately.

### *Topographic Mapping*

My aim both in the 2005 study and in the 2013 repeat has been solely to examine the first of the above concerns, using Dunedin as a trial area. I have been discovering the extent of unmapped tracks in the Dunedin area, irrespective of whether those tracks were open to the public.

Regarding the topographic layer of the WAMS, there are several points to make. While we acknowledge the helter-skelter of technological improvements that lie behind the success of the WAMS, we also need to qualify our enthusiasm by pointing out some concerns.

The legend on LINZ 1:50,000 topographic maps warns recreational users to consult rangers or other authorities for the latest information on tracks. We now have an authoritative online resource – the WAMS – specially designed to provide information on foot-tracks and landownership. But the coming of the WAMS has not reduced our reliance on our national 1:50,000 mapping; on the contrary it has reinforced it because the WAMS relies greatly on the completeness and accuracy of the topographic data that it receives from LINZ.

The question of exactly which tracks will appear on the NZTopo50 maps seems to be a largely undiscussed grey area, except among technical experts. If they aren't already doing so, the NZWAC and LINZ should thrash this out, and the sooner the better. When the Walking Access Commission learns of an unmapped track, the commission may sometimes need to decide whether to pass on the information to LINZ or, alternatively, to add the track directly to the WAMS.

One of the potent features of the WAMS enables organisations to partner with the Walking Access Commission to display their own information to the public. This facility is called the Partner Information Portal. "The portal provides partner organisations with all the tools required to enter their own public access related information directly into the mapping system for the public to view. This information could include tracks, fishing access points, places of interest or other information of interest to people considering a trip into the outdoors."<sup>3</sup> Who knows where this powerful facility might take the WAMS; but the WAMS should not become a substitute for a less-than-complete NZTopo database.

One other point about the NZTopo50 maps. We've seen that the NZTopo50 map symbol labelled 'Poled route' represents a route that is 'marked by either strategically placed wooden

poles stuck in to the ground, or metal standards and/or stone cairns'. A more accurate label for this symbol would be 'Waymarked route'.

### *Cadastral Mapping*

The digital revolution and the subsequent creation of the WAMS have very successfully answered much of the second of the requirements listed earlier. Easements are being added to the cadastral layer as the information becomes available.

### *A Long-term Goal*

The third development awaits the long-term adoption of the concept of 'public foot-track'.<sup>4</sup> Our present topographic maps do not differentiate between tracks open to the public and tracks closed to the public. We are forced to master the considerable complications of the cadastral overlay. In deciding to create the WAMS, a complex three-layer sandwich of information, the Walking Access Commission had no choice: the WAMS is the best interim solution for a number of problems. Ironically though, the triumph of the WAMS – the successful merging of topographic and cadastral and photographic data – is also its one outstanding weakness, because having your information stored on three maps will always be more complicated than having everything you need on one.

## Appendix 1: Categories of Tracks: Five Become Two

During mapping, tracks that spread across five DOC-SNZ categories must be amalgamated into two types of track on the map. The following table suggests how this merging should happen in theory. Whether it happens like this in practice is another matter.

### DOC-SNZ Track Classifications

#### *Unclassified*

Undefined routes, unmaintained except by use, with minimal marking or vegetation clearance, are beyond the upper range of Routes as defined by DOC and Standards New Zealand.

#### *Route*

'Marking on routes shall be by way of cairns, poles or markers and they shall be visible from one to the next, in either direction, in all weather conditions except moderate to heavy mist'. From *Tracks and Outdoor Visitor Structures* (2004).

#### *Tramping Track*

Mostly unformed. May be rough and steep. Has markers, poles or cairns.

#### *Great Walk/Easy Tramping Track*

Generally well formed. Some sections may be rough, muddy or steep. Has signs, poles or markers.

#### *Walking Track*

Mostly well formed. Some sections may be steep, rough or muddy. Water crossings bridged. Clearly signposted.

#### *Short Walk*

Easy walking for up to an hour. Track is well formed, with an even, well drained surface.

### LINZ Track Categories for NZTopo50 Maps

#### *Not shown on NZTopo50 maps*

#### *Poled route*

'Poled routes are normally in open country, above the bush line and will be marked by either strategically places wooden poles stuck in to the ground, or metal standards and/or stone cairns'. From *Technical Specification for the Maintenance of NZTopo Data: TH Specification 106 Version 1.6* (2004).

#### *Foot track*

Defined by LINZ as 'deliberately formed tracks for the purpose of moving foot traffic'. To be shown on an NZTopo50 map, a foot-track must be physically evident.



## Appendix 2: List of Tracks and Routes Mentioned in this Paper

When checked in February 2013, the thirty-four tracks or routes listed in the following table were not shown or were only partly shown on the NZTopo50 maps. The thirty-four are a representative selection only; a complete list of Dunedin's unmapped tracks and routes would be far longer.

Dunedin city council was in the process of adding most of the thirty-four, and others, to a tracks webmap. Five of the thirty-four – those managed by DOC – had already been added to the Walking Access Mapping System (WAMS).

My investigations focused on ascertaining whether a track or route was physically evident and whether it was on the NZTopo50 map. Finding out the tracks' legal statuses was not a part of these investigations. As far as I know, however, all the tracks and routes listed are open to the public except, in one or two cases, at lambing time.

Some of the routes are difficult to see on the ground and are largely unwaymarked. They lie outside the DOC-SNZ definition of a Route, which requires the cairns, poles or markers to be 'visible from one to the next, in either direction, in all weather conditions except moderate to heavy mist'. They also fail to meet LINZ's criteria for being shown as a 'poled route' on the NZTopo50 maps.

Several of the other tracks listed have some of the characteristics of a Walking Track or Tramping Track rather than those of a Route, but may – like the routes we've just discussed – fail the test of being physically evident. A few others are well built and well defined but in clusters, difficult to show at 1:50,000. All the rest seem to me to be valid candidates for being surveyed (if not already done) and added to the NZTopo database. The right-hand column offers an opinion on this suitability.

<i>Track-name</i>	<i>Location</i>	<i>Mapping considerations</i>		<i>Should track be shown on NZTopo50 maps?</i>
		<i>Physically evident?</i>	<i>Other mapping considerations</i>	
Frasers Gully	Brockville–Halfway Bush	Well-made, partly gravelled track. Mostly hidden by trees on the WAMS aerial photographs.	Urban area but with space for track symbol on NZTopo50 map.	Yes.
St Clair to Marlow Park Track	South Dunedin	Partly a well-made track, sandy. Visible on the WAMS aerial photographs.	Urban area but with space for track symbol on NZTopo50 map.	Yes.
Flagstaff Creek Exotic Forest Track	Three Mile Hill Road	Well-made track. Mostly hidden by trees on the WAMS aerial photographs.	Cluster, probably too crowded to fit on NZTopo50 map.	Probably not.
Long Beach Track	Northern coast	Well-made track. Middle section hidden by trees on the WAMS aerial photographs.	Short track, well used. Has been added to the WAMS as a DOC track but is not shown on the NZTopo50 map.	Yes.

<i>Track-name</i>	<i>Location</i>	<i>Mapping considerations</i>		<i>Should track be shown on NZTopo50 maps?</i>
		<i>Physically evident?</i>	<i>Other mapping considerations</i>	
Big Rock Track	Flagstaff	Ill-defined track, minimal waymarking. Not visible on the WAMS aerial photographs.	Short track.	Probably not.
Second Beach Track	South Dunedin	Well-made track. Visible on the WAMS aerial photographs.	Urban area, short track, well used. Potentially part of a longer coastal trail.	Yes.
Sul-livans Dam Pipeline	Leith Valley	Not a made track but an obvious route along pipeline. Trees hide the pipeline on the WAMS aerial photographs.	Short track.	Probably not.
Island Park Inlet Track	Kaikorai estuary	Worn narrow track. Visible on the WAMS aerial photographs.	Short track. Accessway to foreshore.	Yes.
Mihiwaka Track	Port Chalmers area	Ill-defined track, minimal waymarking. Not visible on the WAMS aerial photographs.	Short track. Accessway to rockclimbing.	Yes.
Greenacres Track	Otago Peninsula	Worn track, obvious. Mostly hidden by trees on the WAMS aerial photographs.	Short track. Well used.	Yes.
Picnic Gully Track	Taieri River	Built track. Mostly hidden by trees on the WAMS aerial photographs.	Short track. Has been added to the WAMS as a DOC track but is not shown on the NZTopo50 map.	Yes.
Nicols Falls Track	Leith Valley	Worn track. Mostly hidden by trees on the WAMS aerial photographs.	Short track. The small waterfall is part of Dunedin's local history.	Yes.
District Track (northern half of)	Otago Peninsula	No visible track. Minimal waymarking. The route follows the line of an unformed public road.	Short track.	Probably not.
Okia Track	Otago Peninsula	Worn track, obvious. Visible on the WAMS aerial photographs, together with other tracks of a cluster.	Accessway to foreshore. Main track of the cluster.	Yes.
41-Peg Track (also called Tomahawk Track)	Otago Peninsula	Worn narrow track, waymarked by poles. Most of the route follows the line of an unformed public road. Mostly visible on the WAMS aerial photographs.	Site of access controversy in the early 1990s.	Yes.
Cleghorn Street Track (central section)	North Dunedin	Faint track, adequately waymarked. Not visible on the WAMS aerial photographs.	Valued urban-fringe walk.	Yes.
Purakaunui Inlet Track	Northern coast	Well-built track, obvious. Mostly hidden by trees on the WAMS aerial photographs.	Difficult to fit the fragments of foot-track onto the NZTopo50 map among other detail.	?
Aramoana Heyward Point Track (southern section)	Northern coast	Faint track across rough grazing, adequately waymarked. Not visible on the WAMS aerial photographs.	Has been added to the WAMS as a DOC track but is not shown on the NZTopo50 map.	Yes.
Cloud Forests of Leith Track	Mount Cargill	Well-cut track, adequately waymarked. Mostly hidden by trees on the WAMS aerial photographs.	Part of Dunedin's unofficial skyline walk.	Yes.
McRaes Weir Track	Silver Stream	Worn track. Hidden by trees on the WAMS aerial photographs.		?

<i>Track-name</i>	<i>Location</i>	<i>Mapping considerations</i>		<i>Should track be shown on NZTopo50 maps?</i>
		<i>Physically evident?</i>	<i>Other mapping considerations</i>	
Tunnel Track (Silver Stream)	Silver Stream	Worn track. Hidden by trees on the WAMS aerial photographs.		?
Steve Amies Track	Silver Stream	Worn track. Hidden by trees on the WAMS aerial photographs.		?
Racemans Track	Silver Stream	Built track, obvious. Hidden by trees on the WAMS aerial photographs.	The central artery of the Silver Stream track network.	Yes.
Chalk-ies Track (also called Powder Hill Track)	Silver Stream	Faint track, adequately waymarked. Hidden by trees on the WAMS aerial photographs.	Has been added to the WAMS as a DOC track. Two-thirds of it is not shown on the NZTopo50 map.	Yes.
Chain Hills Track	Mosgiel	Faint grass track, adequately waymarked. Follows the line of an unformed public road.		Yes.
Silver Stream Flood Banks	Mosgiel	Worn narrow tracks along the tops of the flood banks. Visible on the WAMS aerial photographs.		Yes.
Taieri Millennium Track	Taieri River	Well-built track. Some parts visible on the WAMS aerial photograph. Some parts hidden by trees.		Yes.
Taieri Mouth Track (which DOC calls Taieri River Track)	Taieri River	Built track. Some parts visible on the WAMS aerial photograph. Some parts hidden by trees.	Has been added to the WAMS as a DOC track but is not shown on the NZTopo50 map.	Yes.
Escarpment Track	Mount Cargill	Well-cut track, adequately waymarked. Mostly hidden by trees on the WAMS aerial photographs.	Part of Dunedin's unofficial skyline walk.	Yes.
Harbour Cone via Allen Farm	Otago Peninsula	Newish route, not yet a worn foot-track. Not yet visible on the WAMS aerial photographs.		?
Harbour Cone via Smiths Creek	Otago Peninsula	Newish route, not yet a worn foot-track. Not yet visible on the WAMS aerial photographs.		?
Rustlers Ridge via Pipeline Track	Swampy Summit	Lightly worn tramping track. Parts can be difficult to follow. Limited waymarks. Some parts visible on the WAMS aerial photograph. Some parts hidden by trees.		Probably not.
Morrison's Burn Track	Leith Valley	Lightly worn tramping track. Limited waymarks. Mostly hidden by trees on the WAMS aerial photographs.		Probably not.
Powder Ridge	Silver Stream	Lightly worn tramping track. Limited waymarks. The last (top) section of the ridge, through tussock and low scrub, is difficult to follow. On the WAMS aerial photographs, most of the track is hidden by trees.	A classic all-day tramp.	Probably not.

## Notes and Acknowledgments

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### Summary

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**Acknowledgments**

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