

Maps for the People

The Mapping Issues of Walking Access in the New Zealand Outdoors

We anticipate following our primary customers' clear preferences for a Big-Bang approach, with the introduction of a new paper-based [1:50,000 topographic map] series proposed for 2008/9. Considerable planning and consultation, supported with education and communication, will be undertaken in the lead-up to this event.

From Land Information New Zealand's *Topographic Information Strategy 2005–2010*.

Note that LINZ has identified particular groups as being 'primary customers'. Its list of primary customers excludes recreational map-users.

Pete McDonald

September 2005, revised November 2005

A PDF copy of this document is available from:
<http://homepages.paradise.net.nz/petemcd/lap/lap.htm>

Please note that pages 8, 11 and 12 need printing in colour for the diagrams to make sense.

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Introduction

This paper analyses the mapping issues involved in walking access to the New Zealand countryside. It mostly covers old ground, collecting together what has already appeared – scattered around – in print. Readers who have followed the walking-access debate that has occurred since January 2003 will be familiar with much of what follows, except possibly some of the issues surrounding topographic maps.

A cautionary note on public roads. It is true that some of our unused public roads would provide logical walking routes. It is also possible that many others could be realigned or relocated, by negotiation, to follow sensible lines. So people, including me, have emphasised the need for cadastral information as a first stage in the putting to use of public roads. But a slavish total reliance on public roads can result in illogical and unsatisfactory track networks, fragmented and out of tune with the landscape. Public roads are not the be-all and end-all for walking access to the countryside. In some circumstances an amended Walkways Act, administered by the proposed access agency, could play a useful part in developing coherent and well-thought-out track systems.

For brevity I will refer to the report *Walking Access in the New Zealand Outdoors* as the Acland report. I will use the term ‘outdoor recreators’ to mean all the groups who have a need for and an interest in walking tracks: walkers, trampers, hunters, anglers, beach-goers, kayakers, etc. Some of these groups, such as hunters, also need general, go-anywhere access to designated areas of public land; hence the necessity for maps that depict the boundaries of public lands.

I will use the following abbreviations:

LINZ Land Information New Zealand
NTHA National Topographic/Hydrographic Authority
OCGI Officials’ Committee for Geospatial Information
MAF Ministry of Agriculture and Forestry
DOC Department of Conservation

I write as a walker and an advocate of networks of walking tracks across public and private rural land. In August 2005 Jim Sutton, the associate minister for rural affairs, announced the formation of a new Walking Access Consultation Panel. The panel ‘would engage in consultations to reach general agreement on what measures could be implemented to improve access to the publicly-owned resources of water and fish’.¹ At the time of writing, the work of the Consultation Panel remains in progress. There seems every likelihood that the panel will reach unanimous agreement on the mapping issues.

‘In August 2005 Jim Sutton, the associate minister for rural affairs, announced the formation of a new Walking Access Consultation Panel.’

Widespread Agreement on the Need for Accurate Information

The Acland report recommended five objectives, one of which was to provide certainty. I.e, to supply the facts about what walking tracks are available and under what conditions. The report identified two main necessities for certainty:

- accurate information on existing walking tracks and also on the location of public roads and on the location of Queen's Chain reserves; and
- an access code.

After the Acland report, information became one of the few areas of the access debate on which Federated Farmers agreed with outdoor recreators. In its submission on the Acland report, Federated Farmers wrote:

The primary objective must be the provision of accurate, reliable information on what access is currently available, where, and under what conditions if any ... It is impossible to identify whether there are gaps in the access network until we clearly understand where public access currently exists.²

Many other submissions on the Acland report commented on the need for authoritative information on the location of public roads. Many submitters also focused on the need for better mapping of existing foot-tracks. These matters were also frequently raised at the forty-five land-access stakeholder and public meetings.



Analysis of Written Submissions on the Report 'Walking Access in the New Zealand Outdoors'

After the publication of the Acland report, the Ministry of Agriculture and Forestry (MAF) received 1,050 submissions on it. In June 2004, MAF published an analysis of these submissions. The analysis summarises the often very different opinions contained in the submissions. These views mostly fell into two contrasting categories: one category in favour of enhancing walking access to the outdoors and the other in favour of retaining the status quo. But the submissions did reflect a solid consensus on one particular issue:

3. Clarity and certainty of information

There is overwhelming support for greater provision of information that is concise, free, regularly updated and easy to locate. This requires bringing together for the public information on the type and location of access that is available, mapping, signage, and contact information. This is information that needs to be available electronically and in hard copy. Both categories [of submitters] feel that many access problems could be resolved if this were addressed.

LINZ is Not Meeting the Cadastral Information Needs of Track-users

The Need for Cadastral Information

A cadastral map or plan shows property boundaries. The majority of walkers have probably never seen a cadastral map. In an ideal world – one with a fully developed network of walking tracks where needed – outdoor recreators would never require cadastral information. But to reach that ideal, walkers must first obtain reliable information on the location of public roads and Queen’s Chain reserves. This knowledge will enable walkers to identify which public roads and water margins might offer logical and practical routes. Obtaining the cadastral information will merely be the first stage towards transforming some of the lines on the maps into actual foot-tracks. Developing the theoretical potential of a public road into a practical reality often involves far more than access to cadastral information. Definitive information, though, is the prerequisite. Without it the putting to use of public roads and other ‘lost’ reserves cannot even start.

Cadastral Information – An Elitist Luxury

In the past, the Department of Lands and Survey published paper 1:50,000 cadastral maps for the whole of New Zealand. It produced the last one in the 1980s. These old and out-of-date cadastral sheets are unavailable now, except by visiting main reference libraries. (See page 7.)

Nowadays cadastral information is available electronically from Landonline, but only by licence-holders and at prohibitive expense. Members of the public, therefore, cannot easily and cheaply obtain authoritative information on the location of public roads, marginal strips, and other public reserves.

In July 2003, Public Access New Zealand (PANZ) proposed that LINZ provide a free-to-the-public simplified version of Landonline. PANZ made detailed suggestions on what cadastral information this cut-down Landonline ought to deliver.³

Then in August 2003, on the lack of cadastral information showing public roads and Queen’s Chain reserves, the Acland report expressed a clear concern: ‘It is not satisfactory for major sections of the community to be excluded from being able to access public information conveniently and at minimal cost.’⁴

I do not know whether LINZ has yet responded, either favourably or unfavourably, to the PANZ proposal or to the less specific Acland-report observation. Unquestionably LINZ is not meeting the cadastral-information needs of track-users. If we judge from publicly available documents, LINZ does not seem to acknowledge any duty to provide the cadastral information directly to the public, either on paper or electronically. (The reality behind the scenes might be different. The sooner we – the public – know about any proposed solutions, the better.)

For the time being, then, Landonline remains inaccessible to the general public. A partial local exception to this situation occurs in the area administered by Dunedin City Council. The city council provides the City of Dunedin WebMap, available at http://www.dunedincity.govt.nz/city/?page=searchtools_gis. One of the view-options on this web-map produces coloured aerial photographs overlaid with property boundaries (see page 8). But to transform the screen displays into useful 'photo-maps' requires a laborious process of printing many coloured pages and then assembling these into a mosaic.

Cadastral information for the whole of New Zealand is also available on commercial CD-ROMs. For example, a pair of TUMONZ CDs containing topographic data and property boundaries allows you to view topographic maps overlaid with public roads – but at a price. The pair of CDs costs \$185.00. Knowing the whereabouts of public roads has become an elitist luxury. This should not be so. See 'Cadastral Information: What Is To Be Done?' (page 17).

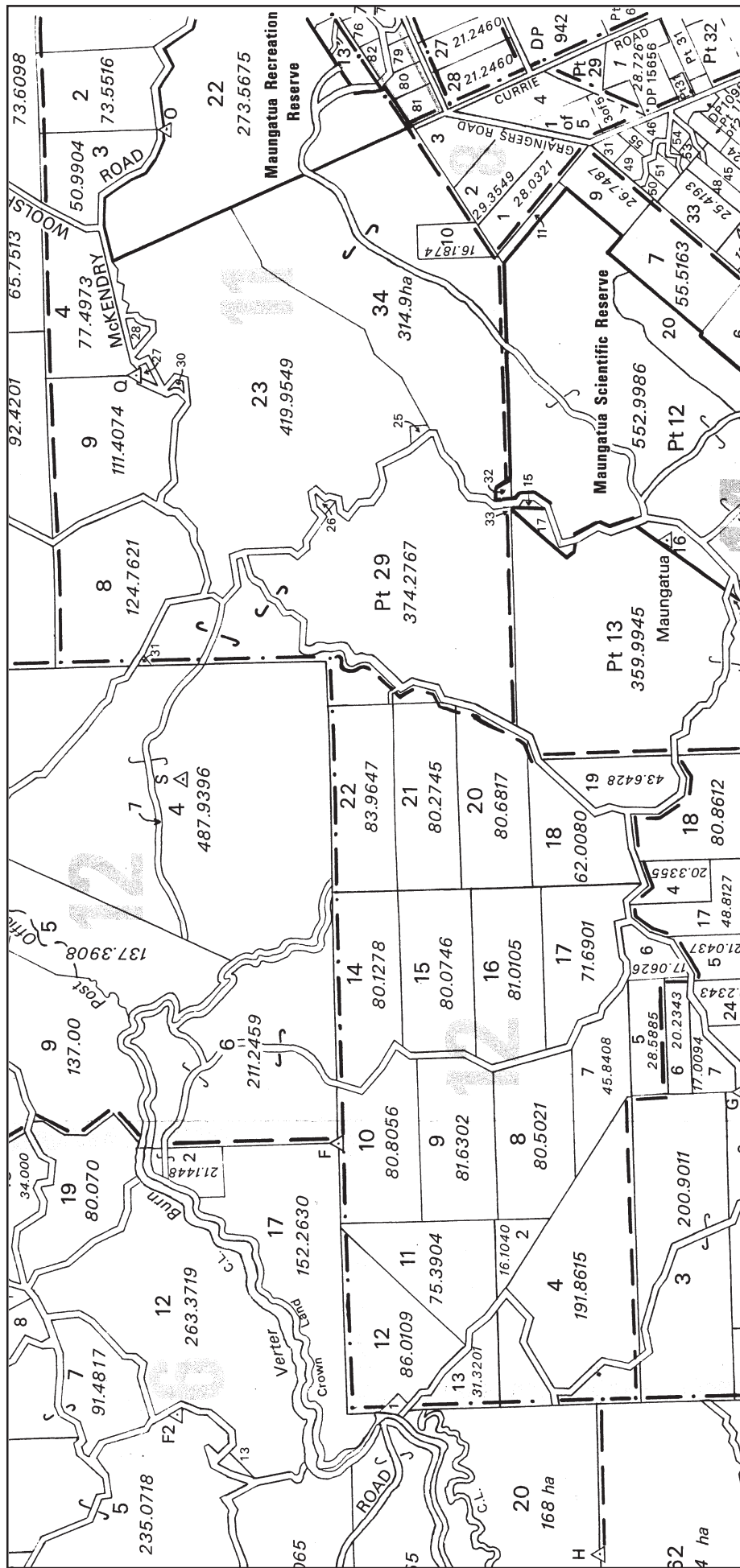
'Knowing the whereabouts of public roads has become an elitist luxury.'



TUMONZ

The TUMONZ electronic map of New Zealand offers about seven data sets, called modules. The Standard TUMONZ module provides the TUMONZ engine and a topographic map of New Zealand on one CD-ROM, for \$95.00. The add-on Property Boundaries module provides legal property boundaries, including title and owner information and road definition, for \$90.00.

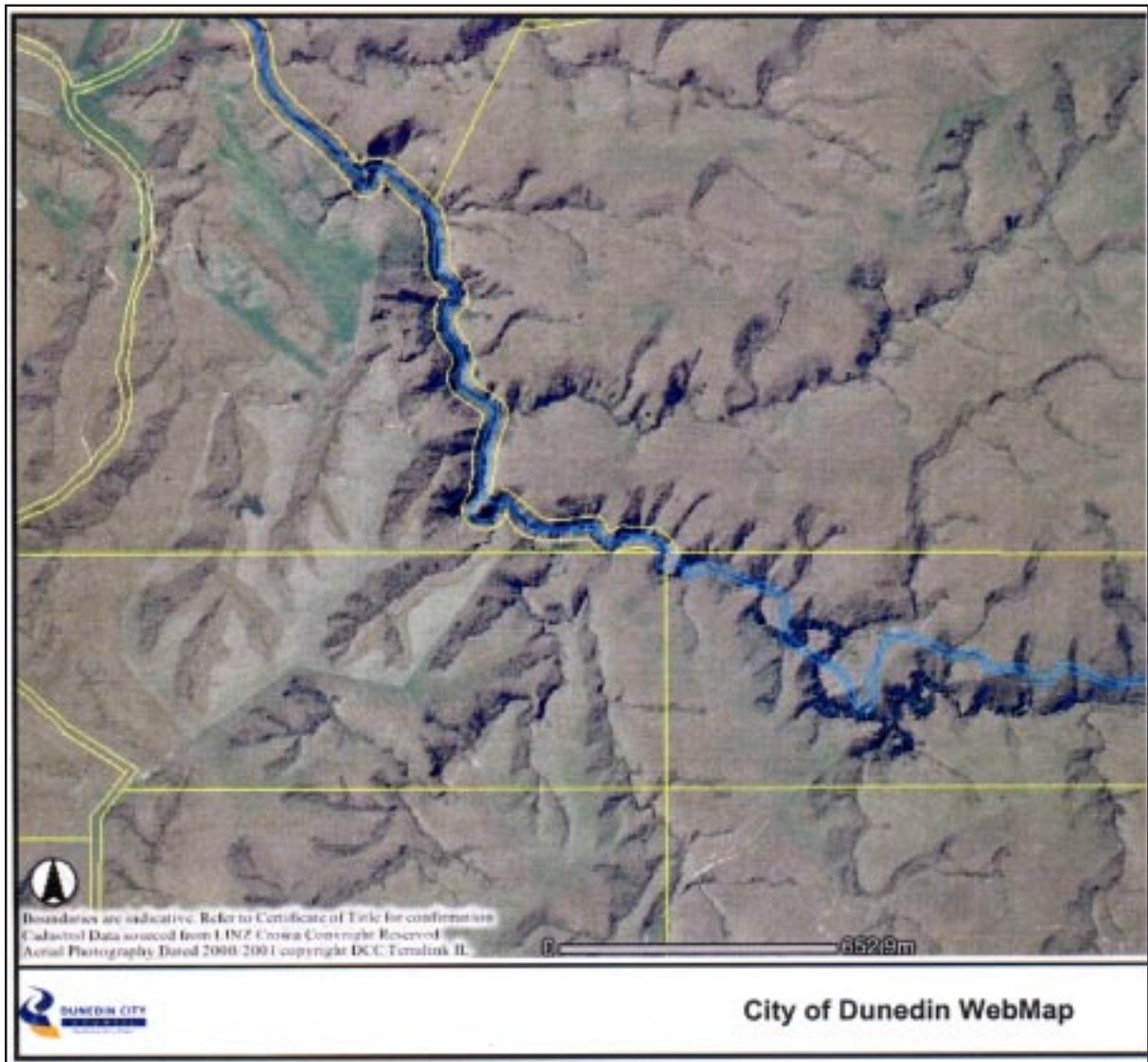
You can keep your property boundaries up to date for an annual subscription of \$240 (one CD every three months).



DEPARTMENT OF LANDS AND SURVEY

An extract from Lawrence, Cadastral Map 261-H44 (2nd edition, 1982). The scale is 1:50,000. The extract shows the hill country to the north of Maungatua. The runholders and their sheep reached this high pastureland in the 1840s and 1850s. Then in 1861 during the gold-rush to Gabriels Gully, many gold-miners took a route across this country. By using some of the public roads (the 'tramlines' on this map), modern-day walkers and mountain-bikers could roughly retrace the steps of the miners. This is assuming that the public roads still legally exist, ie that they have not been legally stopped.

To walk or cycle along a public road, you do not need anyone's permission. But you do need to be able to follow the road without straying accidentally onto the private land on either side. Some of the public roads shown on the above extract are physically obvious. But others, necessary for a through route or a circuit, are not. When the roads are not evident on the ground, the tramlines on the map are unlikely to become practical, clear, unobstructed routes – waymarked where necessary – without the willing cooperation of both Dunedin City Council and the proposed government access agency.



DUNEDIN CITY COUNCIL

A printout from the City of Dunedin WebMap. The scale of this extract is large, roughly 1:16,000. The extract covers a small area to the northwest of Maungatua. (The old cadastral map reproduced on page 7 includes the same area.) The yellow lines are property boundaries. The double blue line shows part of Verter Burn. The northern section of this river on the extract appears to have a marginal strip, but this does not necessarily mean that there is a practical walking route along the riverbank. The southern section appears not to have any marginal strip. The southern section also displays a wide discrepancy between the indicated position of the river and its actual position – a striking example of ‘garbage in, garbage out’.

By a painstaking process of printing many extracts, identical in scale, and then pasting them together, it is possible to construct a sort of cadastral ‘map’. But this procedure is too time-consuming and awkward to be considered an effective way of providing cadastral information for a largish area. For example, to use extracts like the above example (1:16,000) to assemble a mosaic that covers a ten-kilometre square would require about eighteen printouts. For researching possible walking routes across rural land, the paper cadastral maps of twenty-five years ago were far more practical.

The LINZ 1:50,000 Topographic Maps Do Not Meet the Needs of Outdoor Recreators

The Need for Improved Topographic Maps

The Acland report contained twenty-two occurrences of the words 'map(s)' or 'mapping'. Eighteen of these instances referred to cadastral maps or legal record maps. The other four referred briefly to such things as 'printed access maps' and to the UK's 'comprehensive mapping of access areas'. But the report contained no direct references to LINZ's 1:50,000 topographic maps. The report did not identify the limitations and failings of these maps. Nor did it emphasise the pre-eminent potential of topographic maps for showing crucial access information.

In part these omissions were slightly surprising. In July 2003, the PANZ submission to the Land Access Ministerial Reference Group had floated the idea of a public-access topographic map series, which would show – among other things – the boundaries of public land.⁵ On the other hand, the Acland report's omission of the topographic-map issues may have reflected a lack of prominence given to topographic maps in most of the submissions to the Reference Group.

After the publication of the Acland report, the focus on topographic maps began gradually to intensify, although it remained a bee in the bonnet of a few individuals rather than a collective concern. One man at one of the land-access public meetings (at Invercargill on 15 October 2003) offered his blunt opinion:

Englishman Joe Sheriff said he would like more information about where public access was and who to contact to obtain permission. 'Your topographical maps are dreadful. They are not even accurate.'⁶

Joe Sheriff was probably referring to particular aspects of the mapping, rather than to the entire cartography. It is possible that some aspects of LINZ's topographic maps, such as the rivers, hill-shading and contours, are adequate for many purposes, while other aspects, such as the up-to-dateness of foot-tracks, may be unsatisfactory. So in April 2005 I looked at the showing of foot-tracks on the LINZ topographic maps of the Dunedin area.⁷ This work added some facts about some of our topographic maps, details of inadequacy that were not so clearly available two years ago.

Shortcomings of the LINZ 1:50,000 Topographic Maps, and Possible Remedies

From a walker's viewpoint, the LINZ 1:50,000 topographic maps have three basic weaknesses that hamper their usefulness and which frustrate recreational map-users.

1. Missing, Incomplete, and Inaccurate Foot-tracks

My recent study, 'Buskin Track (80114) and Others', examined the recording of accessways, walking tracks and tramping routes on the LINZ topographic maps of the area administered by Dunedin City Council. The study found that at least 49 of the 178 tracks listed in the Dunedin City Council *Track Policy and Strategy* (1998) were plotable at 1:50,000 but were not shown or were only partly shown on the 1:50,000 maps of the Dunedin area (in April 2005).⁸

The study went on to ask a crucial question: why did the 2002 edition of *Dunedin Topographic Map 260-I44 & J44* fail to acquire many well-established tracks that are officially recognised and promoted.⁹ I do not know whether LINZ has yet answered that question. Yet we can speculate on a possible specific reason why the revising did not add the unmapped tracks. The *Land Information New Zealand Guide for Field Checking NZTopo Data: TH Specification 117 v1.2* directs the way in which contractors should update the NZTopo database. This guide points out that field-checkers may need to obtain information on foot-tracks from the Department of Conservation or from local or regional councils.¹⁰ It seems unlikely that field-checkers approached DOC or Dunedin City Council for this information on foot-tracks while preparing the 2002 *Dunedin* map. Dunedin City Council's 1998 *Track Policy and Strategy* had listed all the city's foot-tracks.

Unmapped Foot-tracks: Remedies

In a narrow sense, there seems to be a straightforward procedural solution to the problem of maps with missing, incomplete, and inaccurate foot-tracks. When field-checking NZTopo data, LINZ's contractors should check foot-tracks more rigorously than has been the case. In particular the contractors should liaise more efficiently and thoroughly with DOC and local authorities.

In a wider sense, however, this apparent solution may not be as straightforward as it sounds. There may be questions of costs. And there is a basic question about LINZ's preoccupation with 'core maps for defence and emergency services'. I will return to this issue later (page 17).

2. The LINZ Maps Do Not Show the Boundaries of Public Lands

New Zealand has spent 118 years establishing national parks, conservation parks and other reserves, but its national 1:50,000 topographic maps lack a conventional symbol for the boundaries of such parks and reserves. The reason for the long absence of such a symbol is at best perplexing and at worst incomprehensible. Even now, nearly three years into the MAF examination of walking access, this mapping issue has received relatively little express comment. (The PANZ submission to the Land Access Ministerial Reference Group being an exception.¹¹)

Unshown Boundaries: Remedies

The boundaries of many of our parks and reserves could be shown on 1:50,000 topographic maps, provided that the design of the map series allowed for it. (But very narrow strips of public land, such as public roads and marginal strips, could probably not be shown satisfactorily at 1:50,000. If depicted exactly to scale, a twenty-metre strip at 1:50,000 would be a tiny 'tramline' only 0.4 millimetres across.)

An example of an improved map that does show the boundaries of national parks, conservation parks, scenic reserves, and other public lands is *Queenstown & Cromwell: Recreation Areas* (Terralink, 2003).



An extract from Terralink's *Queenstown & Cromwell Recreation Areas*. The scale is 1:55,000. The Terralink recreational maps use a broad purple line to show the boundary of a 'recreation / conservation reserve'. Eg, a national park, conservation park, conservation area, scenic reserve, recreation reserve, or historic reserve.

This extract shows part of the Bendigo Conservation Area in the Dunstan Mountains. Sometimes the Terralink recreational maps clearly label the public access routes that lead across private land to reach the public reserves. But often, as in this extract, the map-user cannot tell whether the vehicle tracks or foot-tracks leading to the conservation area are open to the public.

3. The LINZ Maps Do Not Distinguish between Foot-tracks Open to the Public and Foot-tracks Not Open to the Public

In my submission on the Acland report, I highlighted the desirability of producing topographic maps that distinguish between public foot-tracks and private ones.¹² I also stressed the complex difficulties of doing so. There is no such thing in New Zealand as a public foot-track, in the sense of a single defined legal status. What has developed is a multi-status assortment of walking tracks that includes ungazetted walkways resting on a variety of formal and informal arrangements.

We face, therefore, a tough dilemma. In my opinion, it is one that we must solve. On the one hand, the benefits of maps that show foot-track statuses are immense. Such maps often use a

two-colour approach, typically red for public, black for private. On the other hand, the complications – legal and cartographic – of showing foot-track statuses on New Zealand maps are sometimes tortuous and challenging. A classic example is where a foot-track theoretically follows a public road but actually deviates slightly from the legally-correct position of the road. A different example, more a cartographic problem than a legal one, is where a public walkway follows a private vehicle track.

Showing Track Statuses: Existing New Zealand Solutions

Despite the complications of showing track statuses on New Zealand maps, some of our map-makers have already achieved solutions or partial solutions. An example of an improved map that does differentiate between public and private tracks is *Lake Sumner: Forest Park* (Department of Survey and Land Information, 1993). This map uses a two-colour convention: foot-tracks are shown in either red ('providing public access') or black ('access restricted; permission required, private property').

DEPARTMENT OF SURVEY AND LAND INFORMATION

	Road, track or route providing public access		Access restricted; permission required, private property
	sealed	unsealed	
State Highway			
Other road			
Vehicle track			
Walking track			
Tramping track			
Route			

Track symbols from Parkmap 274-16, *Lake Sumner: Forest Park*, 2nd edition (Wellington: Department of Survey and Land Information, 1993).

The Parkmaps and Trackmaps were designed for walkers, trampers, mountaineers, hunters, anglers, and other track-users. The symbols distinguish between tracks and roads open to the public and tracks and roads that are private.

DEPARTMENT OF SURVEY AND LAND INFORMATION



An extract from Parkmap 274-16, *Lake Sumner: Forest Park*, 2nd edition (Wellington: Department of Survey and Land Information, 1993).

The three foot-track types match DOC's track classifications of Walking Track, Tramping Track, and Route. Each type is shown in either red ('providing public access') or black ('access restricted; permission required, private property'). Similarly, vehicle tracks are shown in red or black.

Maps for the People

The two-colour method is not the only way to set apart public and private tracks. An alternative way to present the information is to leave all the tracks in black but to add written notes beside particular tracks. The Terralink *Queenstown & Cromwell: Recreation Areas* map uses this approach. For example, the Carricktown Track carries the following advice:

ATTENTION: Permission from the landowner is required for the Carricktown Track between Young Australian Historic Reserve and Nevis Road. Please respect private property. Stay on the track.

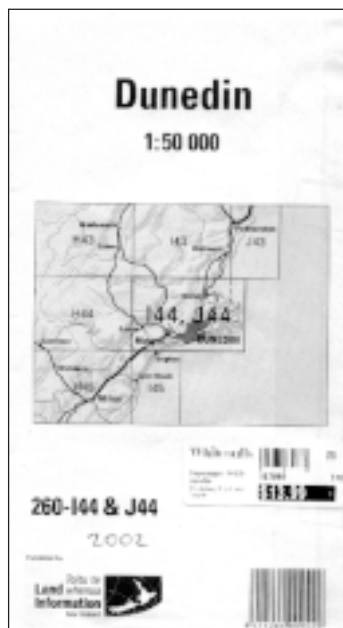
The advisory notes vary. Some foot-tracks or vehicle tracks, such as some in the Cairnmuir Mountains, are labelled as private:

ATTENTION: No access on this track (private land).

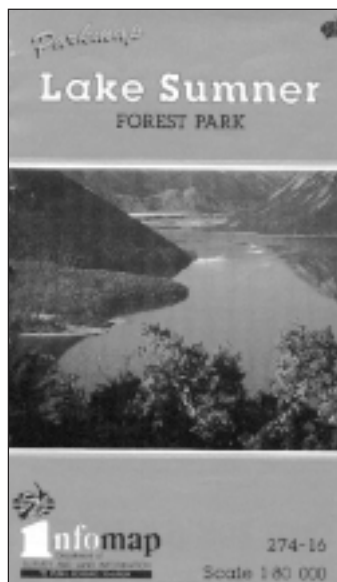
Before Terralink published this recreational map, track-users had to search for the access information from other sources, such as friends, landowners, and DOC rangers. Now, the notes on this Terralink recreational map make this access information much more accessible and widely known, and so the map represents an obvious improvement. This enhancement, though, is fragmentary. Many tracks on the map carry no notes. The majority of these unlabelled tracks lie in private land. The map-user, therefore, cannot tell from the map whether these unlabelled tracks are open to the public.

What are we to make of this Terralink solution? As I see it, a map that is partially covered with little notes may be a highly useful interim measure; but in the longer term, adding notes to maps is an inefficient and unsatisfactory way to show track statuses.

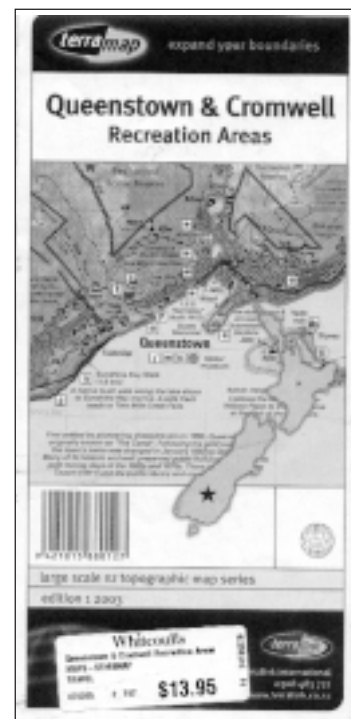
‘a map that is partially covered with little notes may be a highly useful interim measure; but in the longer term, adding notes to maps is an inefficient and unsatisfactory way to show track statuses.’



LINZ publishes nearly 300 1:50,000 topographic maps, to cover the whole of New Zealand.



DOC publishes about thirty-one Parkmaps and Trackmaps for national parks and popular recreational areas.



Terralink Int. publishes about ten recreational maps.

The Unclear Role of LINZ as a Provider of Information to the Public

The failure of LINZ to meet adequately the information needs of outdoor recreators has raised a question about LINZ's role: are recreational map-users and tourist map-users prominent enough in LINZ's objectives? The answer, as I see it, is no. In June 2004, the MAF analysis of submissions listed this issue as one on which both sides of the access debate agreed:

Both categories [landholder submitters and outdoor-recreator submitters] feel that there is a lack of responsibility for the provision of reliable, accessible and useful access information to the public and that the Government should address this issue and review the order of priorities for Land Information New Zealand.¹³

If we are to judge from LINZ's official documents and its website, there are only minimal or vague signs so far (September 2005) of any adjustments to LINZ's priorities.

LINZ's Primary Customers

The *LINZ Statement of Intent 2005/06* says why LINZ exists and it sets out LINZ's plans for the next three years.¹⁴ The intent sparkles with management excellence, e-delivery, quality-assurance audits, and business objectives. There are full-page photographs of LINZ officers or of its primary customers: a LINZ property-rights analyst, an Auckland solicitor, a Christchurch legal executive, the mayor of Napier City Council, the general manager of the Maritime Safety Authority's Marine Pollution Response Service, etc. If you scrutinise this *Statement of Intent* you can find a few brief references to the public as users of topographic information (pages 3, 11, and 23). But the list of Primary Customers (page 19) omits the public as map-users.

Another recently released LINZ document, *Topographic Information Strategy 2005-2010*, has on its cover a picture of a tramper.¹⁵ Promising! I was pleased also to see that this plan (page 11) recognises the need to improve 'currency, accuracy and detail'. But - hold on! - this Goal 2 Objective confines itself to the requirements of 'primary customers'. Who are these privileged patrons? Page 5 lists the Primary Customers in the topographic area: defence forces, emergency services, local authorities, and Civil Defence and Emergency Management. The overwhelming emphasis throughout the fourteen pages of the *Topographic Information Strategy* lies on the needs of these primary customers, on communicating with them, on consulting them, and on maintaining relationships with them. The *Strategy* does not recognise recreational map-users as primary customers.

Determined scrutiny of the *Topographic Information Strategy* does reveal a glimmer of hope: the plan does briefly mention 'major user groups'. Yet, despite the Acland report's unanimous conclu-

sions regarding the need for improved maps and for information on public roads, the strategy fails to identify the recreational public as a major user group. What was needed was a specific and convincing recognition of public map-users; what we got were vague and brief mentions.

LINZ's website firmly reproduces the priorities of the *Statement of Intent* and of the *Topographic Information Strategy*. The 'Map Users' web page states that 'LINZ produces topographic information ... to meet the needs of New Zealand Defence and Emergency Services.' You have to scrutinise the LINZ website minutely to find any explicit acknowledgment of the needs of recreational map-users and outdoor-tourist map-users.

The Officials' Committee for Geospatial Information

To many people, the phrase 'geospatial information' connotes an incomprehensible speciality peopled by a mysterious race of computer buffs who talk about digital meta data. So we tend not to realise that the dashed line on a map, depicting a foot-track, is geospatial information.

LINZ has a number of formal advisory groups, from whom it seeks advice on standards and programme priorities. One of these groups is the Officials' Committee for Geospatial Information (OCGI). This group advises LINZ on the development of technical strategies, the setting of standards, and the development of work programmes to ensure nationally consistent geographical information.

OCGI comprises representatives from: Ambulance NZ; Antarctica NZ; Association of Crown Research Institutes; Civil Aviation Authority; Department of Conservation; Maritime Safety Authority; Ministry for Agriculture and Forestry; Ministry for Civil Defence and Emergency Management; Ministry for the Environment; NZ Fire Service; NZ Police; NZ Defence; State Services Commission – E-Government Unit; and Transfund New Zealand.

This advisory group seems to lack a direct representative of recreational map-users. If we judge from the membership of this committee, outdoor recreators seem to have no voice where it matters at LINZ. One wonders whether LINZ, in its intense drive to develop Landonline, has forgotten that foot-tracks are important geospatial information. Without a recreators' voice on OCGI, there may be no-one to remind LINZ of that fact.

'The "Map Users" web page states that "LINZ produces topographic information ... to meet the needs of New Zealand Defence and Emergency Services."'

'One wonders whether LINZ, in its intense drive to develop Landonline, has forgotten that foot-tracks are important geospatial information.'

The Role of LINZ as a Provider of Information to the Public

The present-day LINZ partly originates from the Survey Act 1986 and the Survey Amendment Act 1996.* These acts (below) appear to allow for the provision of cadastral and topographic information to the public, to enable the public to enjoy New Zealand's outdoors. To what extent the acts actually expect or demand this provision, though, is another matter. LINZ's lists of primary customers exclude the recreational public.

Survey Act 1986

4. Purpose of Act

4.(d) To ensure the provisions of topographic, cadastral, and other land data bases to adequate standards for the efficient administration, **enjoyment**, and development of the resources of New Zealand. [My bold.]

(The Survey Act 1986 set up the Department of Survey and Land Information, the predecessor to LINZ.)

Survey Amendment Act 1996

3. Functions and duties of Surveyor-General

11. (1) (h) [...] to receive, hold, and arrange for the distribution, reproduction, and sale of topographic and cadastral maps, aerial photographs, and other survey and mapping documents resulting from activities under this Act and required for government or **public** use. [My bold.]

(The Survey Amendment Act 1996 changed the name of the Department of Survey and Land Information to Land Information New Zealand.)

Public Access to Land

Private Land ... Making better information available about which areas are available to the public for access could only be achieved at considerable cost to the taxpayer.

From *Briefing for the Incoming Minister 2002: Section 1: Policy Issues* (Wellington: Land Information New Zealand, 2002).

PRIMARY CUSTOMERS

Primary customers are those for whom LINZ has responsibilities mandated by statute or by Cabinet. They are (in alphabetical order):

- Cadastral surveyors
- Conveyancers
- Crown lessees
- Defence forces
- Emergency services, including Civil Defence & Emergency Management
- Local authorities
- Mariners
- Port Companies
- Prospective overseas investors and their agents

From *Land Information New Zealand: Statement of Intent: 2005/06* (Wellington: Land Information New Zealand, April 2005).

Environmental overview

LINZ maps are used for a great variety of work or leisure purposes, by businesses, trampers, tourists and many others.

LINZ's primary customers in the topographic area (for whom we have Cabinet mandated responsibilities) are:

- defence forces
- emergency services
- local authorities
- Civil Defence and Emergency Management

From *Topographic Information Strategy 2005–2010* (Wellington: Land Information New Zealand, June 2005).

*Update, October 2005. LINZ has informed me that the Survey Act 1986 and the Survey Amendment Act 1996 were repealed in 2002.

Future Provision of Information to Outdoor Recreators

In my submission on the Acland report, I anticipated that the proposed access agency would need very close links with LINZ, and I suggested that the agency could possibly even work out of adjacent offices to LINZ.¹⁶ Such is the central importance of LINZ in many matters connected with walking access. I hope that the Walking Access Consultation Panel will re-emphasise this importance.

Cadastral Information: What Is To Be Done?

The Consultation Panel and MAF, with help from LINZ and DOC, will be looking at the mapping issues. I assume that this looking will include a consideration of how to provide the public with easily available, authoritative information on the location of public roads and Queen's Chain pieces. Furnishing such information directly to the public at little or no cost would inevitably involve LINZ in a major way. The recreational public would become a significant user of this LINZ information. I hope that the Consultation Panel will agree that this is the direction in which cadastral information should be heading, rather than towards commercial CD-ROMs that cost hundreds of dollars.

To sum up. First the government needs to agree in principle that cadastral information should not be an elitist luxury. Then the government should require LINZ to report on the possible technical solutions.

Topographic Maps: Core Maps for Defence or Maps for the People?

In 'Buskin Track (80114) and Others' I asked the question: does LINZ intend our national 1:50,000 maps, both paper and online, to be the primary sources of information on walking tracks? Yes or no?

The question remains crucial. The answer is not clear. The LINZ policy statements contradict each other.

On the one hand, we have Dave Mole (manager, National Topographic/Hydrographic Authority) reportedly stating that LINZ policy is to show all features that exist on the ground.¹⁷ Furthermore, 'Government policy requires that LINZ make topographical information available "easily, widely and equitably to the people of New Zealand"'.¹⁸

On the other hand, this government policy - which sounds favourable - does not guide LINZ specifically on all the main features that make a useful map for walking access. Moreover we have official statements that seem to limit the topographic-mapping function of the NTHA to the job of ensuring the availability of 'core maps for defence and emergency purposes'.¹⁹

'The LINZ policy statements contradict each other.'

How useful to walkers are these core maps? Terralink International is able to produce and sell recreational maps partly because – perhaps mainly because – the existing core maps (ie, LINZ's 260 Series maps) are out of date, inaccurate and insufficiently detailed. Similarly, Geoff Aitken has recently published his *Wellington Walks* map. Aitken said: 'As a walker and trumper I use maps a lot, and I was dissatisfied with the ones that were available.'²⁰

There remain several related and unanswered questions. Can LINZ prioritise and accelerate the adding of 'new' foot-tracks to the NZTopo database? What exactly will the proposed land-access strategy say about topographic maps? Will the strategy produce changes at LINZ so that the new LINZ 1:50,000 paper maps, NZTopo50, meet the needs of walkers? Surely there is no alternative? Surely New Zealand cannot afford two national series of 1:50,000 topographic maps?

The DOC Parkmaps and Trackmaps and the commercial products, such as the Terralink recreation maps, will probably only ever cover less than a quarter of New Zealand. At present there are about thirty-one Parkmaps and Trackmaps, about ten Terralink recreation maps, and two NewTopo (NZ) maps: fifty-three sheets altogether if you take into account that the Terralink maps are double-sided. Yet to cover the whole of New Zealand at 1:50,000 requires nearly 300 sheets.

Quite a few contributors to the walking-access debate have argued that we should be focusing on more readily accessible rural tracks close to, but just beyond, our centres of population. But the countryside around our cities and our country towns is – with just a few exceptions – precisely the area that is not covered by DOC maps or by Terralink recreation maps.

I hope that the Consultation Panel will seek answers to the questions I have asked about topographic maps. Without those answers, it will be impossible to clarify whether or not LINZ will design NZTopo50 to meet the needs of walkers.

The government's examination of walking access has coincided with one of those rare occasions when a new series of topographic maps is being contemplated. At present we (the public users) do not know how different NZTopo50 will be from the Topographic Map 260 series. NZTopo50 might form just a minor evolution, with small and inconspicuous changes, plus the change from NZMG (the New Zealand Map Grid projection) to NZTM (the New Zealand Transverse Mercator projection). Or it could be a basic redesign, with evident improvements such as more colours, different sorts of foot-tracks, and boundaries of public land. Apparently the series will be accompanied by comprehensive communications to map-users. But will this dialogue occur before or after the main design decisions? Can walkers sufficiently influence the basic design of NZTopo50 if LINZ does not even view them as notable customers?

'The government's examination of walking access has coincided with one of those rare occasions when a new series of topographic maps is being contemplated.'

Possible Adjustments to LINZ's *Statement of Intent* and *Topographic Information Strategy*

The sixty-six pages of the present (2005/06) LINZ *Statement of Intent* contain one brief paragraph on public access, on page 23. I hope that the Walking Access Consultation Panel will recommend that the next LINZ *Statement of Intent* contain a much enlarged section on public access. The Consultation Panel might also want to comment on the necessity or otherwise of adding the recreational public to the LINZ list of primary customers.

I argued earlier that the *Topographic Information Strategy 20005–2010* does not adequately recognise recreational map-users as important customers. The government could ask LINZ to revise the *Strategy* to include a more specific and weighty reference to the needs of recreational map-users. LINZ would then be in a better position to take into account the needs of outdoor recreators during its planning of NZTopo50.

It may be instructive to compare the topographic half of our National Topographic/Hydrographic Authority with Britain's Ordnance Survey. The Ordnance Survey (OS) is responsible both for providing topographic data for business and for producing maps that meet the specific needs of walkers and tourists. The immensely popular OS Landranger and OS Explorer maps, which show rights of way (for England and Wales), enable the British public to fully use the UK's vast network of public footpaths and bridleways. The new OS Explorer maps depict the areas of access land defined by the Countryside and Rights of Way Act 2000. Such is the importance that the Ordnance Survey places on the needs of outdoor recreators that it recently sponsored both The Ordnance Survey Outdoors Show and the first ever National Outdoor Week.²¹

Ordnance Survey Explorer Map Series

Every part of England, Scotland and Wales – however remote – is covered by 402 maps specially designed for walkers, off-road cyclists, horse riders and all involved in outdoor activities.

From the Map Shop web page of the Ordnance Survey's website, <<http://www.ordnancesurvey.co.uk/oswebsite/mapshop/>>.

The Potential of Technological Advances

Recent developments are revolutionary. Colour LaserJet printouts from NZTopoOnline are little short of sensational. LINZ has – with some good reason – advised the minister for land information that NZTopoOnline 'is an improvement on the traditional approach of amending and reissuing new editions of paper maps'.²² Yet this technological miracle may be of little use if the underlying data – from the NZTopo database – is twenty years out of date, inaccurate, and lacking in detail. If we judge from the Dunedin area (in April

2005), and if we look at the completeness of the foot-tracks, the results from NZTopo*Online* provide a luminous example of 'garbage in, garbage out'.

New technology, however, could make it cheaper to survey tracks accurately and to hence update the NZTopo database. Already, private individuals are surveying foot-tracks by GPS and are drawing maps showing those tracks. Hand-held GPS devices usable by the general public can yield a horizontal accuracy of plus or minus five metres.

I understand that professional users of GPS instruments, such as land-surveyors, can even obtain far greater accuracy than this. Also, GPSing has the potential to increase efficiency and reduce costs. The recent annual report of Britain's Ordnance Survey announced that 'the widespread use of more advanced real-time GPS receivers in our data collection activities has already achieved an impressive 40% increase in our field staffs' effectiveness.'²³

New cartographic software and advanced databases, combined with modern map-production techniques, should make it very feasible to design a multi-purpose 1:50,000 topographic map series that fully meets the needs of walkers while still satisfying all the demands of defence and emergency services and national constitutional purposes.

Update, November 2005

The Role of LINZ, as Laid Down by the Cabinet

I completed and circulated this paper in September 2005. Since then, Kevin Kelly, LINZ's general manager of policy, has written to me clarifying some of the matters raised on pages 14 to 20. His letter spells out the present responsibilities of LINZ. In particular it makes clear that LINZ's role in responding to outdoor recreators' map needs is more limited than that of past state-owned mapping bodies:

LINZ no longer has a mandate to provide mapping information directly to the public. Instead LINZ is responsible for core government land-related regulatory and purchase functions, including providing for the land information needs of government agencies.

... In your paper ['Maps for the People'] you identify how the former Department of Survey and Land Information (DOSLI) produced a range of recreational and cadastral maps to identify public access ways. As you are aware the government restructured DOSLI in mid-1996. Cabinet agreed that LINZ should be responsible for the following core outcomes:

- delivering a regulatory framework that regulated land rights and land data;
- establishing land property rights and records for New Zealand's economic activity;
- managing New Zealand's surplus land assets and liabilities;
- overseeing or managing crown land purchase and disposal regulatory instruments; and
- maintaining core geographic information.

To achieve this the government decided that LINZ would only undertake core topographic mapping, i.e. that required for defence and emergency services and constitutional purposes. Where appropriate, recreational mapping was transferred to the Department of Conservation, and value-added mapping was outsourced to Terralink (formerly a State Owned Enterprise and now a private company) and the private sector in general.

As a result LINZ is currently restricted to producing topographic and cadastral information in accordance with the collective business needs of government. The private sector, which can be far more market responsive, is left to meet the value-added needs of individual sections of the community.

It is now bluntly clear, then, that LINZ is not obliged – under its present cabinet mandate – to design and produce topographic maps that meet the particular needs of walkers, as I specified on pages 10 to 13. Putting this another way and in plain English, LINZ is not required to care very much about the forty-nine well-established tracks in the Dunedin area that are not shown on the LINZ 1:50,000 maps. (Unless, of course, the defence forces or the

emergency services or another government department complains about the out-of-date maps.) But, hey, no problem: the private sector will respond to this need, for the Dunedin area and for all the other areas in New Zealand that are not covered by DOC Parkmaps and Trackmaps.

I have discussed this newly-clarified limited role of LINZ with several representatives of national recreational organisations; most of them have expressed surprise and dismay. The present situation does seem like a major turnaround in the public-service traditions of previous New Zealand state map-makers – and one that outdoor recreators have been slow to fully appreciate. One correspondent wrote: ‘I remain appalled that a department of state could so thoroughly and neatly abrogate its functions (and so legally too) by judicious changes in law enacted late last decade.’ Another commented: ‘The issue probably wasn’t recognised by the recreational NGOs for what it was at the time, ie we were asleep.’

More on the Officials’ Committee for Geospatial Information

On page 15 I pointed out that the Officials’ Committee for Geospatial Information seems to lack a direct representative of recreational map-users. Kevin Kelly’s letter to me confirms that this is the case and explains why: ‘This group limits its membership to reflect the requirements of LINZ’s primary customers and therefore does not have membership from recreational outdoor user groups’.

The Continuing Government Work on the Mapping Issues of Walking Access to the Outdoors

MAF and LINZ are now working together with the Walking Access Consultation Panel, examining the mapping issues, both cadastral and topographic. The indications are that these issues will receive a thorough airing. I am confident that MAF is absolutely aware of the undeveloped potential of topographic maps as information tools to show access rights.

As I see it, LINZ’s proposed new 1:50,000 maps can and should be designed to serve the needs of outdoor recreators. Achieving influential input into the design of the proposed new 1:50,000 series will be immensely important for walkers. A map series designed with the qualities I have listed could future-proof some of the government’s walking-access policies in a way which an act of parliament would not necessarily do. The resulting maps would still satisfy defence and emergency requirements. But without a change to its cabinet-mandated responsibilities, LINZ’s freedom to respond to walkers’ needs might remain limited or even minimal. If we cannot persuade the government to broaden LINZ’s mandate, to better serve the needs of the recreational public, then who *will* produce a map of the Otago Peninsula that does include all its tracks? (And I’m sure many readers could quote other places where accessways and other foot-tracks are missing off the LINZ maps.)

There still remain, in LINZ's statements, opposing signals on the extent to which LINZ will heed the views of public map-users. On the one hand, LINZ has promised that 'considerable planning and consultation, supported with education and communication, will be undertaken in the lead-up to [the introduction of the new map series in 2008-9]'. On the other hand, the LINZ letter to me stated explicitly that recreational mapping is a job for the private sector.

Everywhere you look, there are good-news and bad-news contradictions. For example, MAF and LINZ are now working together to investigate ways to identify the location and extent of existing public access rights. But Kevin Kelly's letter seems to say that outdoor recreators must look to the private sector to provide topographic maps showing these rights, such as foot-tracks open to the public.

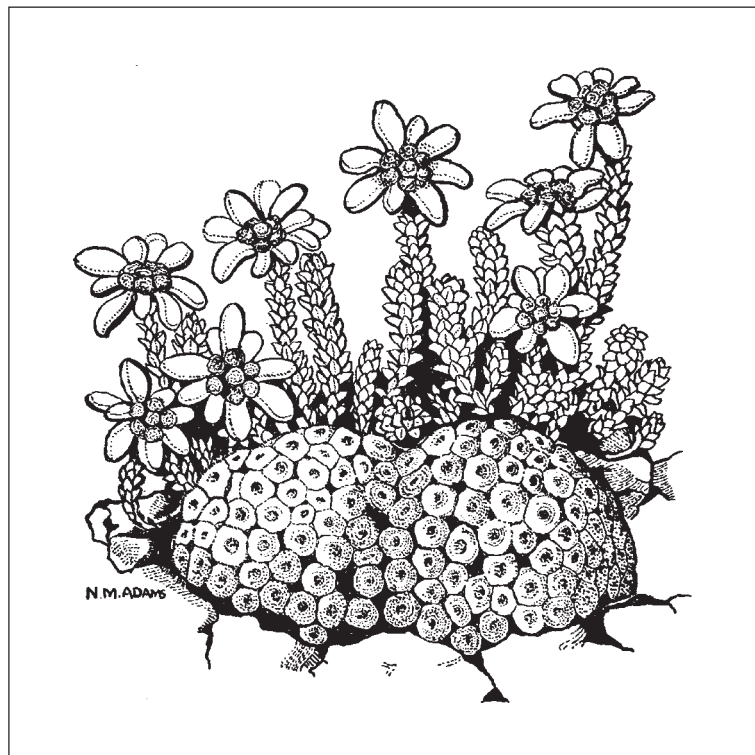
The government's proposed walking-access policy will prioritise the provision of accurate, sufficiently detailed, up-to-date information. The most efficient way to provide that information is on topographic maps. Yet we are to leave the provision of such maps to the market-responsiveness of the private sector.

Endnotes

The first occurrence of a source gives the reference in full. Repeat occurrences use the author and title or author and shortened title.

- 1 Jim Sutton, Hon, Associate Minister for Rural Affairs, 'News Release: New Panel Formed To Consult on Walking Access' (4 Aug 2005) <<http://www.beehive.govt.nz/ViewDocument.aspx?DocumentID=23904>> [accessed 22 Aug 2005].
- 2 Federated Farmers of New Zealand, *Submission on 'Walking Access in the New Zealand Outdoors: A Report by the Land Access Ministerial Reference Group'* (Wellington, NZ: Federated Farmers of New Zealand, Nov 2003), p. 6.
- 3 Public Access New Zealand, 'Improving Public Access to the Outdoors: A Strategy for Implementing Government's Election Policies' (10 July 2003) <http://www.publicaccessnewzealand.org/files/access_strategy_version_1.pdf> [accessed 1 Sept 2004], p. 7.
- 4 Land Access Ministerial Reference Group, *Walking Access in the New Zealand Outdoors: A Report by the Land Access Ministerial Reference Group* (Wellington, NZ: Ministry of Agriculture and Forestry, 2003), p. 77-78.
- 5 Public Access New Zealand, 'Improving Public Access ...' p. 8.
- 6 Julie Asher, 'Land Access Talks Draw 80', *Southland Times*, 16 Oct 2003.
- 7 Pete McDonald, 'Buskin Track (80114) and Others' (April 2005) <<http://homepages.paradise.net.nz/petemcd/bt/bt.htm>> [accessed 16 May 2005].
- 8 McDonald, 'Buskin Track ...' p. 44.
- 9 McDonald, 'Buskin Track ...' p. 35.
- 10 National Topographic/Hydrographic Authority, *Land Information New Zealand Guide for Field Checking NZTopo Data: TH Specification 117 Version 1.2* (Wellington, NZ: Land Information New Zealand, 2003), p. 7.
- 11 Public Access New Zealand, 'Improving Public Access ...' p. 8.
- 12 Pete McDonald, 'High-quality Access: A Response to the Feedback Questions That Were Attached to the Report, *Walking Access in the New Zealand Outdoors*' (Oct 2003) <<http://homepages.paradise.net.nz/petemcd/hqa/hqa.htm>> [accessed 8 Aug 2004], p. 13-15, 48-50.
- 13 Ministry of Agriculture and Forestry, *Analysis of Written Submissions on the Report 'Walking Access in the New Zealand Outdoors'* (Wellington, NZ: Ministry of Agriculture and Forestry, 2004), p. 3.
- 14 Land Information New Zealand, 'Land Information New Zealand Statement of Intent 2005/06' (26 Apr 2005) <http://www.linz.govt.nz/docs/supporting_info/aims_objectives/soi_2005.pdf> [accessed 5 June 2005].
- 15 Land Information New Zealand, 'Topographic Information Strategy 2005-2010' (June 2005) <http://www.linz.govt.nz/docs/topography/topo_info_strategy_2005_2010.pdf> [accessed 25 July 2005].
- 16 McDonald, 'High-quality Access: A Response to the Feedback Questions That Were Attached to the Report, *Walking Access in the New Zealand Outdoors*' p. 12.
- 17 Rochelle Warrander, 'Trampers Warned Off Using Hunting Tracks on New Map', *Taranaki Daily News*, 22 May 1999, p. 5.
- 18 Land Information New Zealand, 'Briefing for the Incoming Minister 2002: Section 1: Policy Issues' (2002) <http://www.linz.govt.nz/rcs/linz/25955/briefing_incoming_minister_policy_issues_20020826_final.pdf> [accessed 29 Aug 2005], p. 29.
- 19 Directory of Official Information, 'Land Information New Zealand: Toitu te Whenua' (1999) <http://www.justice.govt.nz/pubs/reports/1999/dir_of_info/list_1/land_info.html> [accessed 25 Aug 2005].

- 20 John Rhodes, 'Walking in the Wellington Region: New Maps for Walkers' (May 2005) <<http://www.gw.govt.nz/story9575.cfm?print=yes>> [accessed 22 Aug 2005].
- 21 Ordnance Survey, 'Ordnance Survey: Annual Report and Accounts 2004-05' (23 June 2005) <<http://www.ordnancesurvey.co.uk/oswebsite/aboutus/reports/annualreport/index.html>> [accessed 30 Aug 2005], p. 8.
- 22 Land Information New Zealand, 'Briefing for ...' p. 29.
- 23 Ordnance Survey, 'Ordnance Survey: Annual Report ...' p. 7.



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Edelweiss and vegetable sheep.

Bibliography

- Acland report, see Land Access Ministerial Reference Group.
- Directory of Official Information, 'Land Information New Zealand: Toitu te Whenua' (1999) <http://www.justice.govt.nz/pubs/reports/1999/dir_of_info/list_1/land_info.html> [accessed 25 Aug 2005].
- Federated Farmers of New Zealand, *Submission on 'Walking Access in the New Zealand Outdoors: A Report by the Land Access Ministerial Reference Group'* (Wellington, NZ: Federated Farmers of New Zealand, Nov 2003).
- Land Access Ministerial Reference Group, *Walking Access in the New Zealand Outdoors: A Report by the Land Access Ministerial Reference Group* (Wellington, NZ: Ministry of Agriculture and Forestry, 2003).
- Land Information New Zealand, 'Briefing for the Incoming Minister 2002: Section 1: Policy Issues' (2002) <http://www.linz.govt.nz/rcs/linz/25955/briefing_incoming_minister_policy_issues_20020826_final.pdf> [accessed 29 Aug 2005].
- Land Information New Zealand, 'Land Information New Zealand Statement of Intent 2005/06' (26 Apr 2005) <http://www.linz.govt.nz/docs/supporting_info/aims_objectives/soi_2005.pdf> [accessed 5 June 2005].
- Land Information New Zealand, 'Topographic Information Strategy 2005-2010' (June 2005) <http://www.linz.govt.nz/docs/topography/topo_info_strategy_2005_2010.pdf> [accessed 25 July 2005].
- McDonald, Pete, 'High-quality Access: A Response to the Feedback Questions That Were Attached to the Report, *Walking Access in the New Zealand Outdoors*' (Oct 2003) <<http://homepages.paradise.net.nz/petemcd/hqa/hqa.htm>> [accessed 8 Aug 2004].
- McDonald, Pete, 'Buskin Track (80114) and Others' (April 2005) <<http://homepages.paradise.net.nz/petemcd/bt/bt.htm>> [accessed 16 May 2005].
- Ministry of Agriculture and Forestry, *Analysis of Written Submissions on the Report 'Walking Access in the New Zealand Outdoors'* (Wellington, NZ: Ministry of Agriculture and Forestry, 2004).
- National Topographic/Hydrographic Authority, *Land Information New Zealand Guide for Field Checking NZTopo Data: TH Specification 117 Version 1.2* (Wellington, NZ: Land Information New Zealand, 2003).
- Ordnance Survey, 'Ordnance Survey: Annual Report and Accounts 2004-05' (23 June 2005) <<http://www.ordnancesurvey.co.uk/oswebsite/aboutus/reports/annualreport/index.html>> [accessed 30 Aug 2005].
- Public Access New Zealand, 'Improving Public Access to the Outdoors: A Strategy for Implementing Government's Election Policies' (10 July 2003) <http://www.publicaccessnewzealand.org/files/access_strategy_version_1.pdf> [accessed 1 Sept 2004].