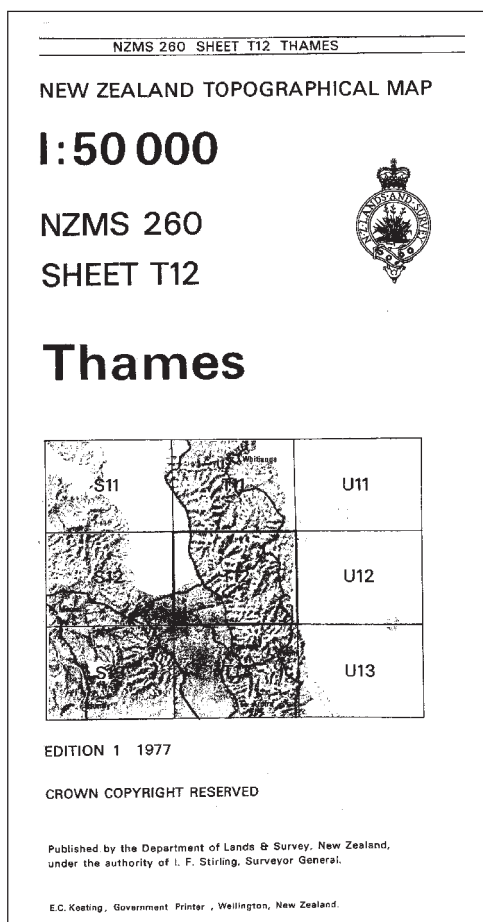


Recreational Map-users in New Zealand: The Haves and the Have-nots



The Department of Lands and Survey published its first 1:50,000 topographic sheet in the NZMS 260 series in 1977 (sheet T12, Thames). Land Information New Zealand is now designing a new series of paper 1:50,000 maps, to be called NZTopo50.

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<http://homepages.paradise.net.nz/petemcd/hhn/hhn.htm>

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Introduction

On 4–6 September 2006, GeoCart'2006, the national cartographic conference, will take place at the University of Auckland. Two of the papers to be presented will deal specifically with the design of topographic maps that meet the needs of walkers, trampers and other nonmotorised outdoor recreators. Another paper will discuss New Zealand's planned new national map series, NZTopo50. Other papers or deliberations may touch upon these areas and developments.

Meanwhile, while New Zealand's cartographic aristocracy chews over convergence, data attributes, interoperability and the geospatial cyber world, the government's Walking Access Consultation Panel will continue its work looking at, among other things, walkers' cadastral and topographic mapping needs. Before the Panel began its recent consultations, it proposed several principles covering five main areas. One of these principles dealt with mapping:

Information and Maps

The public and landholders should be able to access information, including maps, about land that is open to recreational use by the public. This information should be easy to obtain and useful. Land open to the public includes esplanade and other reserves administered by local authorities, Crown land in respect of which the Crown has no reason to exclude the public, and unformed legal roads (paper roads).¹

Many unformed legal roads are not, of course, physically evident. So we need both cadastral information and information on physically evident tracks and waymarked tramping routes. This paper concentrates mainly on the issue of mapping physically evident tracks and waymarked tramping routes. Other papers, submissions and writings during the walking-access debate have discussed the need for easily available cadastral information.

The Panel will report its findings to the Minister for Rural Affairs in late 2006. The Panel's suggestions or recommendations will be important for walkers, trampers, mountain-bikers, hunters, anglers, kayakers and even ordinary family beach-goers. The Panel's report is likely to contain a substantial section on mapping. It will probably discuss what information should be included in a mapping database, whether to provide maps on paper or online, and what map scale is necessary. It is in some ways unfortunate that the Panel will not be reporting *before* GeoCart'2006. We may need a mini cartographic conference after the government decides what to do about walkers' mapping needs. In the meantime I offer the following fact-sheet and comments on New Zealand's present recreational topographic mapping, followed by a proposal on its future.

'The Panel's report is likely to contain a substantial section on mapping.'

Fact-sheet – August 2006

What Is wrong with the Topographic Map 260 Maps?

Anecdotal evidence suggests that problems of completeness and currency of foot-track data may affect the Topographic Map 260 sheets of many areas of New Zealand. As far as I know, nobody has yet looked quantitatively at the foot-tracks on a large number of sheets covering representative areas of the country. But some facts are available from a systematic examination of the 1:50,000 sheets for Dunedin City Council's administrative area.

The showing of foot-tracks on the LINZ maps of the Dunedin area is very incomplete and very out of date.² Since the publication of the paper that examined this problem, further evidence has accumulated suggesting that some of the tracks that are shown on the LINZ maps of the Dunedin area are shown inaccurately.³

How has LINZ responded to the need for improved mapping of foot-tracks?

Delay in acting upon map-users' feedback

On 1 March 2003 I wrote to LINZ, drawing attention to twelve of the Otago Peninsula's unmapped tracks. John Spittal, the chief topographer/hydrographer, replied:

Dunedin City Council has been asked to identify the location of the tracks so they can be added to our NZTopo Database. It will be some years before they filter through to the next edition of the paper map but an electronic version with the additions will be available on NZTopoOnline in approximately 3 months.

Maybe he meant three years. At the time of writing, August 2006, we are still waiting for these tracks to appear on NZTopoOnline. But we southerners are patient. These Otago Peninsula tracks have been officially recognised, and have awaited mapping, for fifteen years. All of them appeared on the A3 sketch-map 'Otago Peninsula Plan for Public Access', approved by the full Dunedin City Council on 4 November 1991.⁴

On 14 March 2006, Pete Hodgson, the then minister for land information, wrote to the New Zealand Deerstalkers' Association about LINZ's topographic maps. Regarding the processes available for map-users to notify LINZ of errors, he wrote:

The department welcomes feedback from recreational groups if errors or omissions are discovered ... When feedback regarding map errors is received, it is forwarded to the appropriate person for response and action. You will appreciate that the key issue for LINZ is validating the error or omission before any alterations are made to the topographic database.

Nobody would argue with this key issue. But it's not the only key issue around. The dominant issue for Dunedin's map-users is why it is taking fifteen years to add Buskin Track and other unmapped tracks to this topographic database. Bear in mind that these tracks are officially promoted tracks in an area of high recreational importance, on the outskirts of a city of 114,000 people.

It's the local authorities' fault!

According to LINZ, part of the cause of the incomplete and out-of-date mapping of foot-tracks lies with the local authorities. On 5 May 2006 I wrote to David Parker, the new minister for land information, drawing his attention to the now widely recognised mapping issues. His reply included the clearest acknowledgment I have yet seen from LINZ – via the minister – that there is a national problem in the mapping of foot-tracks:

LINZ receives track information from the Department of Conservation (DOC), and is in the process of developing an agreement with DOC to ensure that it receives reliable, up-to-date information for its new map editions. However, there are many walking tracks that are not on DOC estate. LINZ has data maintenance contractors who are tasked with obtaining this information from local authorities and others. However, these parties [the local authorities] have no legislative obligation to provide this information to LINZ. As a result LINZ experiences problems in obtaining access to comprehensive up-to-date inputs for its mapping programme.⁵

There is a reason why Parliament has never legislated to oblige local authorities to survey and map their own foot-tracks. It is because most people thought, perhaps mistakenly, that this was LINZ's job. Yet the coming of hand-held GPS receivers might mean that this strange idea – that local authorities survey their own foot-tracks and supply the data to LINZ's contractors – is now a practical proposition.

Will NZTopo50 improve the mapping of foot-tracks?

LINZ is planning to replace the Topographic Map 260 series with a new series of paper 1:50,000 topographic maps, to be called NZTopo50. LINZ has stated that 'considerable planning and consultation, supported with education and communication, will be undertaken in the lead-up to this event'.⁶ But LINZ has emphasised that it is not mandated by the Cabinet to design and produce topographic maps that meet the needs of walkers. LINZ has further argued that recreational map-users must look to the private sector to meet their particular mapping needs.⁷ LINZ has identified particular groups as being its 'primary customers'. Its list of primary customers in the topographic area excludes recreational map-users.⁸ In other words, in the fashionable jargon, we – the public – are not stakeholders in NZTopo50.

In October 2005 I wrote to Pete Hodgson, the then minister for land information, discussing the design of the proposed new topographic maps. I repeated some of the points that I had made in

'In other words, in the fashionable jargon, we – the public – are not stakeholders in NZTopo50.'

'Maps for the People', such as the urgent need for a map symbol demarcating foot-tracks that are open to the public. In his reply he explained that

the first edition of the new maps [expected in 2008–9] is not currently intended to include any more information than that depicted on the current NZMS 260 series maps. A subsequent review of primary customer core data requirements ... may result in subsequent inclusions or exclusions of mapping information.

As we already know, ordinary walkers like me are not primary customers. The conclusion that we must draw from these contradictory signals is that, in the absence of any change to LINZ's cabinet-defined role, any consultation with recreational map-users on the design of NZTopo50 would be a pretence. It would be a fruitless exercise for those users. One wonders whether the general public of New Zealand will ever gain a respect for and a pride in a map series from whose major design decisions they are so firmly excluded.

What is the government doing about recreational mapping?

Somewhat in contradiction to the rigid indifference described in the above paragraph, officials from the Ministry of Agriculture and Forestry (supporting the Ministry of Rural Affairs) have been investigating – with LINZ's help – methods to produce topographic maps that show lands and foot-tracks that are open to the public. It seems, then, that LINZ can respond helpfully to a need expressed by a government ministry but cannot respond directly to a need expressed by the general public.

So the minister for rural affairs, perhaps, has LINZ's backdoor key. The minister for land information, also, has been available as a conduit bearing messages from the public into the private sanctum of LINZ. In February 2006, Pete Hodgson told me that he had 'asked LINZ to advise [him] on the possibility of including information such as the boundaries of public conservation land on its map series'. (In a parallel development at the same time, Chris Carter, the minister of conservation, 'asked [his] department to seek to improve the representation of the areas it manages on published topographical maps'.⁹)

As I understand it, MAF's pilot project has tested the marrying of cadastral and topographic data to produce topographic maps that show unformed public roads, marginal strips and the boundaries of reserves, conservation parks and national parks. Matching cadastral and topographic data presents problems of scale and accuracy, yet apparently these problems can to some extent be overcome. One thing that seems to be conspicuous by its apparent absence from the GeoCart'2006 programme is a paper from MAF reporting on its mapping pilot project. Perhaps there is still time to arrange some sort of report or summary.

There is no indication at present, as far as I know, that the Cabinet will reconsider LINZ's mandate, to extend the interpretation of 'primary customers' to include recreational map-users and

'in the absence of any change to LINZ's cabinet-defined role, any consultation with recreational map-users on the design of NZTopo50 would be a pretence'

to broaden the meaning of ‘core mapping’. So two questions arise. Will the access agency (if established) automatically become a primary customer in the topographic area? At present that category comprises defence forces, emergency services, local authorities, and Civil Defence and Emergency Management.¹⁰ If not, will steps be taken to ensure that the access agency does become a primary customer? If this does not happen, recreational map-users will still have no direct influential voice at LINZ.

What recreational topographic maps are presently available?

There are about thirty-one Department of Conservation Parkmaps and Trackmaps, about ten Terralink International recreational maps¹¹, and two NewTopo (NZ) maps¹²: 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.

Terralink’s recreational maps represent a significant advance. I have previously taken pains to acknowledge Terralink’s considerable contribution to the evolution of our recreational topographic maps.¹³ Fanny LaRiviere of Terralink is fully justified in stating that ‘the ever-increasing popularity of the maps amongst outdoor enthusiasts is highlighting an increasing reliance [on] the content of the maps compared with the established national topographic series produced by the New Zealand Government.’¹⁴

The Terralink maps show that it is absolutely achievable to depict the boundaries of public land at 1:50,000 (except for narrow strips such as unformed legal roads). But the method that these maps use to indicate tracks open or closed to the public – notes in writing – is in some respects hardly at the leading edge of cartographic art. For example, in several places on the *Queens-town and Cromwell Recreation Areas* map, there appears a warning in red letters: ‘ATTENTION. No access on these tracks (private land)’. These warnings are positioned over a track or are vaguely plonked over a few intersecting tracks. On the one hand, this approach represents an important improvement compared to the information contained on a Topographic Map 260 sheet. On the other hand, the device is a crude, partial and inefficient way to show access information.

There may be differences of opinion on this cartographic matter. Hugh Barr, the national advocate for the New Zealand Deerstalkers’ Association, has cited the Terralink *Kaweka and Kaimanawa* recreational map as an example of exactly what outdoor recreators need. He has pointed out that ‘many access messages can readily be shown on a paper map’.¹⁵ While I agree with this statement, I hate my maps being covered with text-boxes. All right, New Zealand’s cumbersome mix of many different legal foot-track statuses, and its absurdly unnecessary lambing breaks, might make it difficult to avoid some text-boxes. Even so, the more text-boxes we can replace with track symbols or boundary lines, the better.

The objective of the NewTopo (NZ) maps is ‘to encourage walking excursions by presenting a design emphasis that shows the positions of the foot tracks and routes, and how to get to them,

‘the more text-boxes we can replace with track symbols or boundary lines, the better’

on an informative topographic background'.¹⁶ The two maps, *Wellington Walks* and *Tararua Tramps*, are at a scale of 1:75,000. They are printed incredibly clearly on Polyart synthetic paper. My immediate reaction, on first examining *Wellington Walks*, was that it looked like the product of a team of experts backed by the financial resources of a large company. That it had come, on the contrary, from the efforts of one 'retired' cartographer, astonished me. If one guy can do this, what could a team do? If you can show such fine detail at 1:75,000, what could you show at 1:50,000? And at 1:25,000? If you can shift vehicle tracks into the family of roading symbols – as Geoff Aitken has very logically done – might that create more scope for differentiating between public and private foot-tracks? And between pedestrian-only tracks (which could be shown by pecks) and multi-use tracks (which could be shown by dashes)? (By 'multi-use' I mean tracks open to both walkers and cyclists.)

The Terralink recreational maps and the NewTopo (NZ) maps serve as up-to-date sources of information. Thousands of outdoor recreators are already using them and commending them. These inspirational maps also give us the visionaries' look into the future. Our recreational maps must still evolve very considerably. The Terralink and NewTopo (NZ) examples show that we have the know-how, the brain power and the creativity to develop a public-access map series.

Why do we need recreational maps for places other than DOC-managed lands?

Some 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. Researchers in recreation management have been saying this for twenty years. As long ago as 1985, a national policy statement on outdoor recreation emphasised the high value of outdoor-recreation opportunities near where people live:

While scenic quality and grandeur are important attributes, areas around population centres, whether or not of great scenic attraction, may have high recreation value because of their proximity and ease of access ... It must be asked if provision is adequate where it is needed most, particularly within easy reach of population centres.¹⁷

It is very likely that a similar policy statement, if it were to be written today, would reiterate this need. Yet the countryside around our cities and our country towns is, with some exceptions, precisely the area that is not covered by Department of Conservation (DOC) maps or by Terralink recreational maps. The surrounds of Dunedin, including the Otago Peninsula, are a prime example.

New Zealand's 80,000¹⁸ livestock farms cover 11.7 million hectares of grazing, arable, fodder and fallow land (2004 area figure).¹⁹ This is 44 per cent of our land area. Much of this pastoral land is privately owned. A small proportion of it is publicly owned. Roughly two million hectares of Crown pastoral leasehold land

'The Terralink and NewTopo (NZ) examples show that we have the know-how, the brain power and the creativity to develop a public-access map series.'

remain (February 2006). In the years ahead, it is likely that new foot-tracks will gradually appear, albeit very slowly, across this 11.7 million hectares. In particular we can expect new walking tracks to and along water margins, along some unformed public roads, and across the countryside in peri-urban areas where there is a high demand for walking access.

Why are foot-tracks so important?

I want now briefly to discuss the relative importance of linear and area access, in the context of private land. In 2003-5 the opponents of the government's walking-access plans kicked up a rural kerfuffle at the heart of which lay allegations that the government was planning to implement area access to private land. Phrases such as 'roaming at large' and 'having free rein' circulated constantly in newspaper accounts of landholders' concerns. It was often clear that the landholders were using these phrases contemptuously. Landholders knew that Britain had recently created statutory area access, and they assumed that New Zealand's outdoor fraternity would want the same.

Looking back on that rural furore, it is hard to imagine a worse-informed public debate or one with greater ironies. The Land Access Ministerial Reference Group had quickly rejected the idea of a right to roam.²⁰ The Acland report had repeated this rejection.²¹ An update brochure from Jim Sutton, the minister for rural affairs, had stated that 'the right to roam anywhere at all over open country, which is the tradition of some countries, is not appropriate in New Zealand'.²² Very few New Zealanders were asking for statutory area access to private land. Many, though, were asking for certain and enduring linear access across private farmland, either as an end in itself (to enjoy the pastoral landscape, while sticking to the track) or to reach riversides and other public lands.

A further illuminating twist to this story appears if we look at the relative importance of Britain's linear and area access. The perhaps surprising truth is that many ordinary Britons most value linear access:

Whilst the enduring battles for public access over the preceding 200 years in England may appear to have been won, even at the admission of the Countryside Agency (2000) such rights are unlikely to lead to any noticeable increases in the use of this land for public enjoyment. The right is won, but probably not wanted. In part, this is because public surveys indicate a preference for the statutory rights of way system.²³ This system [the network of public footpaths and bridleways] is understood by the public, they know where it is and, importantly, it goes somewhere specific and is clearly defined on a map. It is a system of certainty that can be used with confidence and knowledge for quiet enjoyment. Open country, on the other hand, is less well defined, less known about and people do express a nervousness about simply getting lost.²⁴ Importantly too, the right of access to open country is unlikely to be used widely because the leisure patterns of the public in respect of countryside recreation have been changing

considerably over the past 20 years. There simply may be little demand for this kind of access within people's broader leisure portfolios in the 21st Century.²⁵

In other words, in the context of crossing private farmland, many Britons, much of the time, *want* to stick to the footpaths. They don't *want* to roam. As I see it, again talking about crossing private farmland, many New Zealand walkers similarly want to follow tracks. Britons have accurate maps that show all the tracks. We do not. The sooner we do, the better.

Public Access New Zealand (PANZ) has recently re-emphasised the importance of the mapping of public accessways across private land:

The greatest single obstacle to increased public enjoyment of the outdoors is the lack of readily available information on the exact location of public lands and public accessways. We believe it critical that for the achievement of the Government's aim to improve public access to the outdoors the earliest possible preparation and publication of a Public Access map series is completed.

It is not surprising that the current lack of such information is responsible for many misunderstandings and confrontations between landholders and outdoor recreationalists and both parties will greatly benefit from a credible mapping series. In spite of claims to the contrary most recreationalists respect private property and will hesitate to cross land where they are uncertain of their access rights. Accurate publication of legal accessways will provide every incentive for recreationalists to stick to those accessways rather than risk confrontation by wandering across private land.

From the landholders point of view accurate publication of public accessways will allow better management of farming practice where unformed legal roads exist and in general will provide a much more certain understanding of what public access rights exist in their area.

At the present time all parties suffer from a complete confusion as to their rights and responsibilities and a Public Access map series will be a major step forward in addressing that.²⁶

In previous papers I have emphasised that designing a public-access map series for New Zealand is easier said than done.²⁷ This is especially so since the coming of mountain-biking; we lack Britain's clear and simple distinction between, what are called in the UK, public footpaths and bridleways. Showing access information on maps will challenge New Zealand's cartographers for many years to come.

A nation of haves and have-nots

Some New Zealanders live in areas adequately covered by modern topographic maps showing all physically evident foot-tracks. Many do not. We are, in the matter of recreational topographic maps, a nation of haves and have-nots.

The haves are enjoying the fruits of 'the latest automated GIS software and tools for styling, label creation, editing and updating'.²⁸ They benefit from the existence of maps whose 'quality and currency of topographical and recreational data has earned international recognition' for their publisher. The Wellingtonian haves can take pleasure in products influenced by Bertin's semiology and created on *LorikCartographer*.²⁹ In about a dozen areas of New Zealand, the haves are lapping up maps printed on water-resistant materials. The haves do not face any barriers of officialdom, because the private sector has responded to their needs.

The have-nots remain somewhere in the 1970s or even earlier. I used more accurate and complete topographic maps while growing up in Britain in the 1950s than are available to me for the Otago Peninsula today. Those were the days when cartographers scribed lines onto wax-covered glass plates. The British maps of the 1950s showed all physically evident foot-tracks, using black dashes. In 1959 the first inch-to-the-mile map to show rights of way was published. Then gradually the 1:50,000 maps of England and Wales acquired their rights of way, shown by long magenta dashes and magenta pecks; they hence gained the x-factor. Here in the Dunedin area in 2006, the LINZ Topographic Map 260 sheets haven't yet reached the a-factor, the 1950s stage: they lack perhaps a third of the necessary black dashes.

The have-nots would like to look ahead optimistically at NZTopo50, but very little justifies this optimism. In the LINZ direction, the have-nots can see only rigid limitations and primitive thinking. So they are looking hopefully ahead instead at the proposed access agency, which might become a national mapping organisation, subsidised by the taxpayer. But haven't we got one of those already, called Land Information New Zealand? Surely having one state mapping body would be more economical and efficient than having two?

In pointing out the deficiencies of the present LINZ 1:50,000 topographic maps, I am not denigrating the skills and labours of New Zealand's past cartographers. The Topographic Map 260 maps and their forerunners may have been among the finest available anywhere in the world, especially for a sizeable alpine country with a small population. Still today, for tramping in our alpine areas, these maps may meet most needs. On the other hand, for walking or mountain-biking in areas like the Otago Peninsula, these maps are inadequate and impoverished. They hinder rather than assist the government policies that promote a physically active nation. They do nothing to help the diversification of New Zealand's outdoor tourism. We should regard them as a national embarrassment.

In a letter to me in October 2005, Kevin Kelly, LINZ's general manager for policy, explained that 'the information standard for geographic data that LINZ collects and provides is based primarily on international best practice and the information demands of New Zealand emergency services ... As far as possible all tracks are recorded on topographic maps'. The delegates to GeoCart'2006 will be far better informed than I am to comment on what is the international best practice for depicting foot-tracks. Dunedin City Council is presently updating its tracks database. This revision has revealed that there are even more foot-tracks missing from the area's Topographic Map 260 sheets than we had previously thought. Those previous results showed 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).³⁰

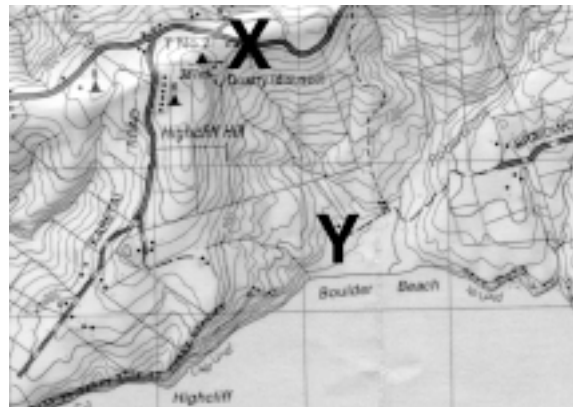
Blank on the Map

In 1989 Bruce Mason of the Otago Peninsula Walkers rediscovered and publicised Buskin Road and a number of other unformed or partly formed public roads on the Otago Peninsula. All of them appeared as tracks on the A3 sketch-map 'Otago Peninsula Plan for Public Access', approved by the full Dunedin City Council on 4 November 1991. They have remained in regular use ever since.

A study* in April 2005 found that Buskin Road and sixteen other well-established and officially recognised foot-tracks on the Otago Peninsula were missing off the LINZ 1:50,000 *Dunedin* topographic map. They were also missing off NZTopoOnline. At the time of writing (August 2006), they have not yet appeared on NZTopoOnline.

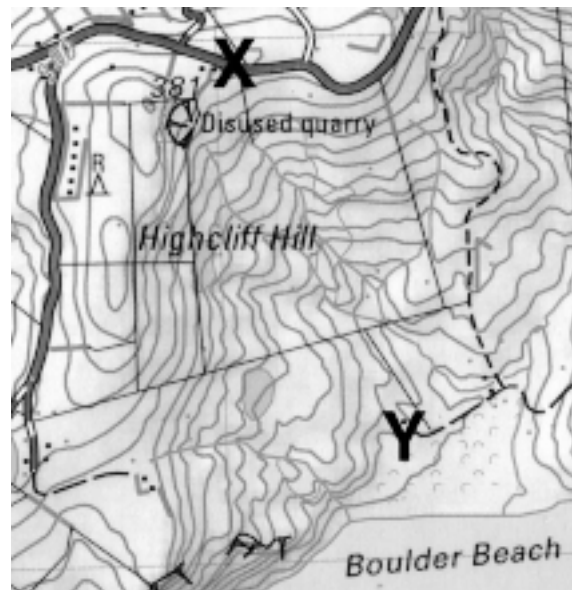
* Pete McDonald, 'Buskin Track (80114) and Others', April 2005, pp. 17, 44–46.

Buskin Track is well defined on the ground. See photographs, page 17.



LINZ

An extract from 1:50,000 *Dunedin* Topographic Map 260-I44 & J44, 2002 edition. The unmapped Buskin Track descends the hillside from X to Y.



LINZ

An extract from NZTopoOnline (Beta Release 2.0), downloaded at a nominal 1:25,000, April 2005. The unmapped Buskin Track descends the hillside from X to Y.

The cost of surveying physically evident foot-tracks

At several of the public and stakeholder consultations held by the Walking Access Consultation Panel, some people have argued that the showing of foot-tracks on our topographic maps could not be improved in completeness, accuracy and up-to-dateness because surveying all physically evident tracks would cost too much. But expert comment from a land-surveyor has suggested that, while the cost of surveying might have been prohibitive in the past, it should in the future be lower:

Barriers to Access Surveying

In the past, certainty about rights has usually required a clear surveyed definition, Crown ownership and some compensation for land taken. The clear and unambiguous spatial definition of land parcels is the ideal upon which our property law is based. This usually means surveyors' pegs in the ground. The costs of surveys of tracks, easements and boundaries can impose a financial barrier to the development of more countryside tracks. Cadastral survey regulations and standards have been strictly adhered to in keeping with the law's emphasis on clear and distinct property rights. It would appear that such strict compliance is not really necessary for what could easily be promoted as a casual or informal establishment of relatively nonintrusive foot traffic. High levels of survey accuracy are redundant in such a situation when all that is really required could be a line showing a public walkway marked on an aerial photo' – a visual representation that is clear and simple enough for public recognition. Just as some land boundaries may be defined by the ambulatory boundary of an adjoining watercourse, so too can strips of land be defined by reference to a bank, a ridge, a fence, a track and a set width beyond that feature. It is therefore possible to remove the impediments of intensive survey definition and high survey costs from the equation.³¹

Two professional cartographers have commented to me on this issue of costs. Both said that hand-held GPS devices give an accuracy that is acceptable for mapping foot-tracks at 1:50,000. The results, according to them, would be fine for the NZTopo database. One of these cartographers suggested that teams of volunteers could use GPS devices to survey existing tracks. The work would require some local quality control and audit. Some overall management would be necessary to facilitate and coordinate the work.

LINZ and other map-makers, therefore, should not necessarily need to use registered surveyors for mapping physically evident tracks. The challenge will be how to harness volunteers or minimally trained technicians to survey physically evident tracks by GPS in an organised way that meets whatever standards of

accuracy are required for 1:25,000 or 1:50,000 output. (Except in gullies and depressions in thick bush, where GPS devices may not work.) The technology is still new and improving all the time. Who knows how things might develop?

Some continuing developments in Dunedin indicate one way in which foot-track data may become available in the future. Antony Hamel is working on a new guidebook to the tracks of the Dunedin area. Each time he has gone out walking in the last two years he has used a high-quality hand-held GPS to record a track and waypoint file. He now has over thirty of these files. Most of them are for tracks that were included in his earlier guidebooks of 1993 and 1997. The current LINZ 1:50,000 Dunedin map (2002 'full' revision) does not show most of these tracks. Some that are shown on the LINZ map are shown inaccurately. We have noticed some places where the tracks on the LINZ maps are several hundred metres out, 400 metres in one case. When Antony Hamel publishes his new guidebook, in about a year's time, he will probably also make available his track files. He will probably put them on a website.

This particular development calls for two comments. Firstly, being realistic, most people's primary tool for navigation will remain a map. GPS devices need to become cheaper, consume fewer batteries, and offer bigger screens before they can match a piece of paper. Secondly, and more importantly, will we tolerate a situation in which LINZ continues to produce maps whose tracks are incomplete and inaccurate when the accurate data is freely available on the web?

'will we tolerate a situation in which LINZ continues to produce maps whose tracks are incomplete and inaccurate when the accurate data is freely available on the web?'



Hand-held Global Positioning System (GPS) Devices

There are two main types of hand-held GPS devices: mapping and nonmapping. The Garmin GPSMAP 76CSx is an example of the mapping sort. It achieves a DGPS (differential GPS) accuracy of typically below five metres. Its manufacturers claim that its highly sensitive receiver will receive the satellite signals in heavy tree cover and around tall buildings. It can store 1000 user waypoints with name and graphic symbols. It automatically creates a 10,000-point track log and will store twenty saved tracks (500 points each). Two AA alkaline batteries will power the device for eighteen hours in typical use. The instrument weighs eight ounces and meets IPX7 water-resistant standards.

A national topographic map series that meets the needs of walkers and other recreators

In my view, it would be unfair, misguided and short-sighted to accept the present very incomplete coverage of recreational maps as a permanent feature of New Zealand's topographic mapping. The *whole* of New Zealand, except for the brick and concrete of the towns and cities, is an area of importance for outdoor recreation. But it is extremely unlikely that DOC and the commercial firms will produce recreational maps to cover the whole country. The only fair and equitable solution would be a national topographic maps series, or two series, designed to meet the needs of recreational map-users. At a minimum, such maps would accurately show all physically evident foot-tracks. They would also depict waymarked tramping routes that meet yet-to-be defined criteria.

Why did I write, in the above paragraph, 'or two series'? 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.³²

Other submitters to the Panel, too, have pointed out the advantages of 1:25,000 mapping for showing foot-tracks and boundaries. To show crowded clusters of tracks and to show tracks in urban-fringe areas, the larger scale is essential. Similarly, to show all unformed public roads and marginal strips, overlaid onto a topographic base, might require a scale of at least 1:25,000. (It would be far easier to comment on this cadastral-topographic blend – perhaps a unique New Zealand mapping challenge – if 1:50,000 and 1:25,000 trial maps were available.)

It seems unlikely that New Zealand will ever be able to afford a national paper 1:25,000 series, which would require perhaps 1,200 sheets. Yet if we could make 1:25,000 mapping available on the internet, it would immensely improve the quality of information available to walkers and outdoor recreators in general, provided that the source data was complete and accurate and provided that we adopted procedures to keep this data up to date.

This discussion of scale seems to be leading us towards a dual system. Perhaps the much-talked-about public-access map series should actually consist of two series: NZTop50 on paper and 1:25,000 maps online.

Which brings me to the crucial question that is still unanswered: who will design and produce the necessary national series of topographic maps that meet the needs of walkers and other

'It would be far easier to comment on this cadastral-topographic blend ... if 1:50,000 and 1:25,000 trial maps were available.'

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recreational users? I remain convinced that the primary source of information on foot-tracks ought to be the national series – whether one series or two series – of topographic maps. New Zealand's state mapping organisation is Land Information New Zealand. It will forever remain to me one of life's deepest mysteries why a Labour-led government has not broadened LINZ's mandate to require LINZ to design and produce maps that meet the needs of the recreational map-user. For goodness sake, I thought that walking was the most basic part of our outdoor ethos, and yet we do not require our national mapping body to consider the special information needs of walkers. How on earth did the Ministry for Rural Affairs end up with this map-making job, a ministry that I presume serves primarily the needs of farmers and rural dwellers?

The fact that LINZ contracts out many of its topographic chores is immaterial. LINZ develops the topographic-map specifications as a prerequisite to the outsourcing of topographic work. It is LINZ, not the contractor, that is responsible for all the basic design decisions. And it is the government, or more precisely the Cabinet, that has the power – and must surely now see the need – to widen the meaning of the much-quoted term 'core mapping'.

LINZ has carried out a major GPS control survey in the Ross Sea.³³ It has completed survey work for the Continental Shelf Project.³⁴ It has digitised millions of cadastral records. But it has not – and seemingly cannot – map Buskin Track, a track just a few miles from where I live, impeccably based on an unformed public road and first publicised by Bruce Mason in 1989.³⁵

The Department of Lands and Survey published its first 1:50,000 topographic sheet in the NZMS 260 series (sheet T12, Thames) in 1977.³⁶ Land Information New Zealand is now designing a new series, perhaps to last for the next thirty years. Recreational patterns are changing. Map-users' expectations are rising. Technology is improving. It will be a tragedy if bureau-centric priorities and 19th-century thinking deny New Zealanders the topographic mapping that they need and deserve.

I love maps. I like them for the secrets they open up. They lead us up to hidden waterfalls and down to lonely beaches. They take us into sunny glades and onto windy ridges. Years ago I relied on them to help me find my way up and down alpine peaks. Now I expect the maps to show me where I can ride on my mountain-bike, which might sometimes be on singletrack through native bush, and might at other times be on unformed public roads across well-crafted pasturelands. I spent many years working full time in outdoor education. Nearly every day included some teaching of map-reading to children or young people. The obvious place for children to first use topographic maps is in the countryside near where they live. In one week, if taught well using accurate and up-to-date maps, children can gain a respect for topographic maps and an appreciation of their usefulness that will last a lifetime. But it is difficult to build children's confidence in their map-reading skills and a pride in the maps if the showing of foot-tracks on the maps is incomplete and unreliable.

We have a national mapping agency that has no mandate, and little intention, to respond directly to the widely expressed needs of the general public. This is surely wrong and unsustainable,

even in the short term. It says to the public, 'Topographic maps are nothing to do with you lot! Leave that sort of thing to the experts. They know best.'

There's a sense in which you can judge the maturity of a country from the quality of its maps. New Zealand is still a teenager. We need to acquire a few more qualities. We still have some growing-up to do.

Buskin Track, Otago Peninsula (see page 12)



The upper part of Buskin Track follows a partly formed public road.



Buskin Track is waymarked clearly. Here, where a fence-line crosses the public road, there is a stile and a marker pole.



Buskin Track is well waymarked. Here use has worn an obvious narrow track.

Endnotes

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

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