

# Kahurangi National Park Mountain bike trial 2011-2013



RESOURCE DOCUMENT

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*photo: ©Stephen Roberts*

<b>1. EXECUTIVE SUMMARY .....</b>	<b>2</b>
<b>2. THE HEAPHY TRACK .....</b>	<b>6</b>
2.1. <i>Setting the scene .....</i>	<i>6</i>
2.2. <i>The Department of Conservation Intermediate outcomes .....</i>	<i>8</i>
2.3. <i>Visitors on the Heaphy Track .....</i>	<i>8</i>
2.4. <i>Visitor feedback on the mountain bike trial .....</i>	<i>15</i>
2.5. <i>Track conditions and facilities .....</i>	<i>15</i>
2.6. <i>Media .....</i>	<i>15</i>
2.7. <i>Physical Track impacts .....</i>	<i>16</i>
2.8. <i>Riding off the track .....</i>	<i>16</i>
2.9. <i>Compliance with National Park Bylaws and Mountain Bikers Code .....</i>	<i>16</i>
2.10. <i>Damage to signs .....</i>	<i>17</i>
2.11. <i>Conflict between walkers and mountain bikers and the mountain bikers code .....</i>	<i>17</i>
2.12. <i>Flora and Fauna Impact .....</i>	<i>18</i>
2.13. <i>Damage to Historical and Cultural Heritage .....</i>	<i>19</i>
2.14. <i>Economic impact .....</i>	<i>19</i>
<b>3. FLORA TO BARRON SADDLE AND KILL DEVIL TRACKS .....</b>	<b>22</b>
3.1. <i>Setting the scene .....</i>	<i>22</i>
3.2. <i>Visitors to the Barron Saddle and Kill Devil tracks .....</i>	<i>23</i>
3.3. <i>Visitor experiences .....</i>	<i>23</i>
3.4. <i>Off track riding .....</i>	<i>24</i>
3.5. <i>Physical Track impacts .....</i>	<i>24</i>
3.6. <i>Trial enforcement issues .....</i>	<i>24</i>
3.7. <i>Sign Damage .....</i>	<i>24</i>
3.8. <i>Conflict between walkers and mountain bikers .....</i>	<i>24</i>
3.9. <i>Fauna and Flora Impact .....</i>	<i>24</i>
3.10. <i>Mountain bikers code compliance .....</i>	<i>24</i>
3.11. <i>Helicopter Downhill biking on Kill Devil Track .....</i>	<i>24</i>
3.12. <i>Economic impact .....</i>	<i>25</i>
<b>4. RECOMMENDATIONS .....</b>	<b>26</b>
<b>5. APPENDIX 1 – AUSTRALIAN GEOGRAPHIC OUTDOOR – HEAPHY ADVENTURE .....</b>	<b>27</b>
<b>6. APPENDIX 2 – TRACK PHYSICAL IMPACT – PHOTO MONITORING REPORTS .....</b>	<b>28</b>
<b>7. APPENDIX 3 – POWELLIPHANTA SNAIL MONITORING REPORT .....</b>	<b>29</b>

## 1. EXECUTIVE SUMMARY

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In December 2010 the Department of Conservation carried out a partial review of the Kahurangi National Park Management Plan to allow for a three year trial of mountain biking on the Heaphy Track (on a seasonal basis between 1 May and 30 September), the Kill Devil Track and the Flora Saddle to Barron Flat Track (all year round) in the Upper Takaka Valley.

The management plan calls for the trial to be reviewed by the Department. This will determine whether mountain biking on all or some of the identified tracks should continue.

### The Heaphy Track

The Heaphy Track is managed as a Great Walk and a 'Gateway' destination and is valued as an important recreation and tourism destination in the Buller and Nelson regions. The Heaphy Track provides an introductory backcountry experience suitable for a wide range of people, and an opportunity to learn about our history and conservation through multi-day walking and mountain biking.

The introduction of seasonal mountain bike use on the Heaphy Track was expected to attract new visitors and Mountain Bike New Zealand anticipated that up to 3000<sup>1</sup> people would ride the track each year.

On average 1,919 people mountain biked or walked the Heaphy Track each year during the trial period. Feedback from mountain bikers, local community and concessionaires has been overwhelmingly positive with few reports of conflict occurring.

Overall the use (mountain bikers and walkers) of the Heaphy Track has increased from 4,992 in 2009 to 6,118 in 2013. This is a 22.5% increase in annual visitor numbers over this period. However, the increase in use of the Heaphy Track during the mountain bike season (1 May to 30 September) has been significant. In 2010, 581 people walked the track during this period. By the end of the third year of the mountain bike season this had increased to 2,223 people walking or biking the track. This was an increase of 282.6%.

During the period of the mountain biking season the economic benefit to the Regions is estimated to be \$ 756,000<sup>2</sup>. Overall the total number of people mountain biking and walking the Heaphy Track contribute an estimated \$2,312,604.00 per annum to the Regions.

While overall use on the Heaphy Track has steadily increased since the trial began, there has been a decrease in the numbers of walkers using the track. While this could be attributed to the introduction of mountain bikers to the track, it is more likely due to two significant weather events resulting in the closure of the track over the summer period of 2010 and 2011. This directly affected the number of people able to walk the track during the peak of the season at a time when mountain bikers were not on the track.

Over the trial period, visitors (walkers and mountain bikers) were invited to provide feedback to the Department on their experiences and provide any suggestions or general comments on the trial. The Department received over 144 responses with a large number of positive comments and six negative comments.

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<sup>1</sup> Mountain Bike New Zealand Guardian newspaper 9 December 2010

<sup>2</sup> <sup>2</sup> Assumption based on average expenditure per trip of \$378.00 for each mountain bikers refer New Zealand Cycleway – Market Research September 2009 page iii

Conflict between walkers and mountain bikers has been minimal. It was commented that *“it was great to see all the users, walkers and mountain bikers, sharing the track and enjoying the experience together”*.

Overall the compliance of mountain bikers adhering to the mountain bike care code has been high. The Kahurangi National Park Bylaws were amended in April 2011 to allow mountain biking on the Heaphy Track. These bylaws made it possible to enforce the rules. Over the trial period there were no major issues that required enforcement.

It is difficult to fully gauge the effect of mountain bikers upon walkers due to the fact that there were few walkers on the track during the mountain biking trial, however the limited number of instances of conflict reflects that both the mountain bikers and walkers are sharing the track with consideration for each other.

Physical impact monitoring was undertaken at five locations. Analysis of monitoring data suggests few impacts as a result of the track being opened up for mountain bike use:

- Monitoring results show that where the track is well formed and constructed, and has the ability to drain freely, the 3 year trial of mountain bike use appears to have had no significant negative impact.
- Certain sections of track are subject to regular flooding and/or being submerged by high tide. They can become muddy when wet and as a result show evidence of use from bikers and walkers.
- Certain sections of the Heaphy Track between Blueshirt Creek and James Mackay Hut, and between James Mackay Hut and Lewis Hut, are poorly formed, wet, and muddy, and require upgrade in order to meet the needs of both mountain bikers and trampers. This work is programmed to occur in 2013/14.
- High rainfall events, such as those that occurred in 2010 and 2011, can severely damage the track and infrastructure. Reports from hut wardens, track workers, and users comment these storm events have had considerably more negative impact on the track than mountain bikers and walkers.
- The Heaphy Track has a well defined track corridor and there have been no reports of people mountain biking off the track.
- There have been no reports of damage from mountain bikers to historical features on the track.
- There have been no reports of damage or vandalism to signs on the track.

Much feedback was received about the apparent differences in the standard of the track between Golden Bay and the West Coast. Comments were not necessarily negative, however, some sections of the track from beyond Saxon hut and Lewis Hut were muddy, rough and uneven. A programme of work has commenced to upgrade some of the severely eroded sections of the track and this work will continue.

During the trial period the Department replaced the Perry Saddle Hut and the Heaphy Hut. Four of the older style six wire Forest Service swing bridges were replaced with suspension bridges more suitable for mountain bike use and walkers on a Great Walk. Feedback regarding the new facilities has been very positive.

Mountain bikers, much like walkers have a clear preference for the warmer months of the season. During the mountain bike trial there was a strong preference for visitors to use the track in the months of September and May, with June, July and early August the least favoured.

There is high number of walkers using the track throughout the summer period (December – March) with a notable spike in April due to New Zealander's traditionally tramping over the

Easter weekend. At other times of the year there is capacity to increase use of the Heaphy Track. One way to achieve this is to allow for mountain bike use to continue and consider extending the mountain bike season from 1 March to 30 November each year excluding the four days of the Easter holiday weekend.

It is estimated that an extension to the mountain bike season could result in up to 4,000 visitors mountain biking the Heaphy Track each year and increase the total number of people using the track to 9,000 per annum. The dates for the extended mountain bike season will be consistent with the season for mountain biking on the Queen Charlotte Track, however the proposal is to exclude mountain biking over the four days of the Easter holiday which is not the case on the Queen Charlotte Track.

### Flora Saddle to Barron Flat Track and the Kill Devil tracks

The Flora to Barron Saddle and Kill Devil tracks are managed as backcountry destinations and are valued as local recreation opportunities.

In 2010, prior to the introduction of mountain biking approximately, 2,300 people walked the Flora to Barron Saddle track. Staff report that visitor use on this track has remained unchanged since the introduction of mountain biking. In 2011, 2,200 walkers and mountain bikers used the track. The counter malfunctioned in the 2012, resulting in incomplete and unreliable data.

There is no visitor counter on the Kill Devil Track. Staff have not noticed any change in visitor numbers since the introduction of mountain biking. Staff and concessionaires estimate that use is low with 400 people using this track each year.

There has been no report of conflict between walkers and mountain bikers.

There have been no reports of mountain bikers failing to adhere to the mountain bikers code.

Over the period of the trial there were no major issues that required enforcement.

Physical impact monitoring on the Flora to Barron Saddle and Kill Devil Tracks was undertaken during the mountain biking trial. Analysis of the monitoring data of the sites on each track resulted in the following findings:

- The three sites monitored on the Flora to Barron Saddle Track show minor changes to the track surface that occurred during the mountain bike trial period. However, it is difficult to determine whether these occurred solely because of mountain bike use. The impacts are more likely attributed to high rainfall and the lack of adequate track drainage.
- The two sites monitored on the Kill Devil Track show no effects from the introduction of mountain biking.
- There have been no reports of damage or vandalism to signs on the track.

### The Kahurangi National Park Management Plan

The Kahurangi National Park Management Plan states in section 4.1.1.2:

At the time Kahurangi National Park was formed the General Policy for National Parks (1983) prohibited the use of any motorised or non-motorised vehicles anywhere in a national park except on formed roads (Policy 19.6). This meant that although there were submissions (on the 1997 notified draft management plan) in support of some mountain biking to continue in the Park, it could not be allowed.

General Policy for National Parks 2005 allows the use of specified types of non-powered vehicles on routes specifically identified in a management plan, and where track management measures would ensure that adverse effects on national park values can be minimised, track standards are suitable and the benefit, use and enjoyment of other people can be protected.

Following the public suggestion process and consultation with key stakeholders, the Department identified three routes which were considered appropriate for mountain biking activity on a trial basis. They were:

- the Heaphy Track (seasonal access)
- the Kill Devil Track
- the Flora to Barron Flat Track

The Heaphy Track, Flora Saddle to Barron Flat Track and Kill Devil Track were considered appropriate because they have low levels of use by walkers during the periods mountain biking is provided for, the construction and quality of the tracks are generally of a suitable standard for mountain biking and the adverse effects to the national park values are more easily managed.

The three identified routes also provide a range of mountain bike experiences in the Park. The Heaphy Track is a multi day ride which requires a good level of fitness, an advanced (Grade 4) level of skills to ride in a backcountry environment across a variety of landscapes and requires a moderate degree of self reliance. The Flora Saddle to Gridiron Junction section of the Flora to Barron Flat Track provides an entry level ride on a fairly flat, smooth, wide 4WD track suitable for families and beginners.

The remainder of the Flora Saddle to Barron Flat Track and the Kill Devil Track are one day rides for advanced and expert riders. They are technically challenging, on rough, remote terrain which require the rider to walk or carry their bikes at various points.

The management plan calls for the trial to be reviewed by the Department. This will determine whether mountain biking on all or some of the identified tracks should continue.

The Nelson Marlborough Conservation Board will review this report and make a further recommendation to the New Zealand Conservation Authority. The management plan called for the following monitoring:

- Social impact monitoring
- Physical impact monitoring
- Ecological impact monitoring

For this to be supported by measuring the effects of mountain biking on the Park values by:

- Compliance with the bylaws
- Compliance with the “Mountain Bikers Code”
- Recording of all enforcement incidents and outcomes
- Keeping a register for departmental staff to record field observations regarding mountain bike activity
- Recording feedback from all user groups

Visitor use, feedback and impact data was collected over the trial period from hut and intention books, staff and visitor comments, and physical impact monitoring.

This document outlines the monitoring programme and requirements. It presents and discusses results and makes recommendations about the continuation of mountain biking on the three selected trial sites within the Kahurangi National Park.

## 2. THE HEAPHY TRACK

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This section of the report describes the key components of the monitoring programme and discusses the results.

### 2.1. Setting the scene

The Heaphy Track goes from Golden Bay to the West Coast. The Heaphy Track traverses a diverse range of landscapes from the mountains to the sea. Figure 1.0 shows the location of the track and the associated facilities. Figure 1.1 shows the topography elevations of the track.

The Heaphy Track is the longest of the Department's 9 Great Walks. The provision for the mountain biking trial during period 1 May – 30 September from 2011-2013 has generated interest from mountain bikers, the local community, media, politicians and the Department.

Mountain Bikers describe the Heaphy Track as *“a multi-day backcountry ride with no equal in New Zealand – 78 outrageous kilometres of benched single track snaking its way across the top of the South Island”*.

*“Fit parties can ride the Heaphy Track in a couple of days, over-nighting at James Mackay or Saxon Huts, however it is worth taking the time to ride the sublime and ever changing stunning landscape. The trip is equally rewarding travelling in either direction, with options to stay at Heaphy Hut or Perry saddle Hut. However, the logistics of arranging transport can be challenging. The easiest and most cost effective option is to pair up with a team travelling in the reverse direction and swap keys halfway. Alternatives involve a long bus trip or speedier and pricier shuttles by plane or chopper”*.

*“The terrain is mostly advanced Grade 4. It becomes trickier in the wet or cold, so it is quite a step up from say the Queen Charlotte Track”*.<sup>3</sup>

Over the trial period, visitors (walkers and mountain bikers) to the Heaphy Track were invited to provide feedback to the Department on their experiences and provide any suggestions or general comments on the trial. The Department received over 144 responses with a large number of positive comments. This feedback has been used in conjunction with other information collected for this report.

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<sup>3</sup> Guy Wynn-Williams, Underground Newsletter 66, History of the Heaphy, February 2011.

Figure 1.0 – Map of the Heaphy Track

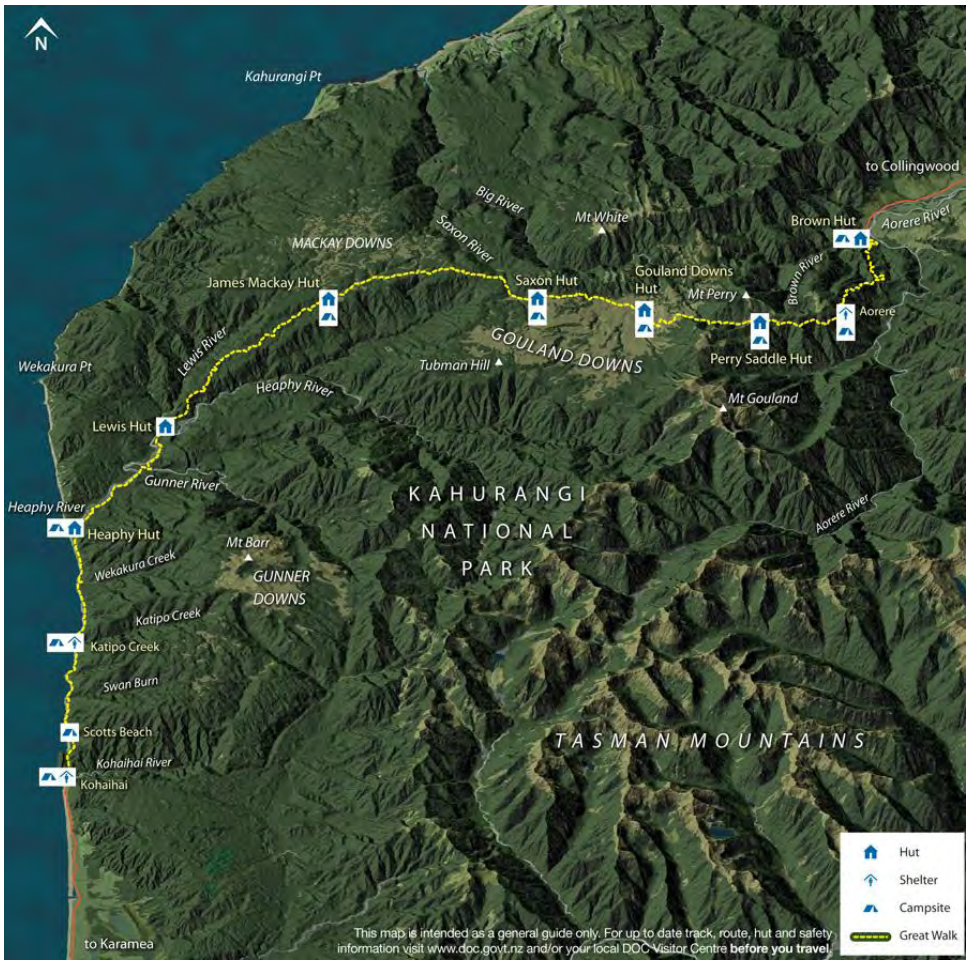


Figure 1.1 – Heaphy Track topography elevations



## 2.2. The Department of Conservation Intermediate outcomes

The proposal to allow for season mountain bike use on the Heaphy Track is strongly aligned with the Intermediate Outcomes 2, 3, 4 and 5 described in the Department's Statement of Intent 2013 -2017.

*Intermediate Outcome 2 – Our history is protected and brought to life.*

Visitors to the Heaphy Track are able to read and enjoy interpretation at the huts that describes early Maori settlement on the West Coast *Tai Poutini*, European exploration, early travel and recreation.

*Intermediate Outcome 3 – More people participate in recreation.*

The Heaphy Track is managed as a 'gateway' site under the Destination Management Framework (DMF). Gateway destinations are developed to introduce new participants and to grow recreation in the outdoors. The mountain bike trial has allowed more New Zealanders and international visitors to undertake a challenging multi day mountain bike trip on a Great Walk.

*Intermediate Outcome 4 - More people engage with conservation and value it's benefits.*

The mountain bike trial has allowed more New Zealanders and international visitors to experience the Heaphy Track and increase their awareness, enjoyment and understanding of conservation and its benefits.

*Intermediate Outcome 5 – More business opportunities delivering increased economic prosperity and conservation gain.*

The mountain bike trial has allowed some concessionaires and businesses to grow their business during what has traditionally been a quiet time of the year. There is potential to further grow concessionaire use on the Heaphy Track.

## 2.3. Visitors on the Heaphy Track

### 2.3.1. Visitor Numbers

Overall the use (mountain bikers and walkers) of the Heaphy Track has increased from 4,992 in 2009 to 6,118 in 2013. This is a 22.5% increase in annual visitor numbers over this period. However, the increase in use of the Heaphy Track during the mountain bike season (1 May to 30 September) has been significant. In 2010, 581 people walked the track during this period. By the end of the third year of the mountain bike season this had increased to 2,223 people walking or biking the track. This was an increase of 282.6% (refer to figure 1.2 and table 1.0).

In the first year of the mountain bike trial 1,992 visitors walked or biked the Heaphy Track. In the second year this decreased to approximately 1,542 people. This is most likely due to the loss of the Lewis swing bridge during a significant flood event in mid July 2012. At the time the Department issued a track warning notice advising that bikers need to ford the Lewis River and not undertake the river crossing during periods of heavy rain. In the final year of the trial, 2,223 walked or mountain biked the Heaphy Track. This season also had both the strongest opening and closing months of the whole trial.

In addition to this overnight booked use, some visitors will have visited the Heaphy Track for a day walk/ride. The majority of this use is likely to have occurred between Kohaihai and Scotts Beach and along the coastal section of the track to Heaphy Hut and from Browns Hut to Perry Saddle Hut. It is estimated that approximately 200 day visitor mountain bikers can be added to the annual mountain biking numbers and

approximately 250-500 day visitor walkers can be added to the annual walking numbers.

Figure 1.2 – Heaphy Track Great Walk Visitor Numbers from National Visitor Booking System

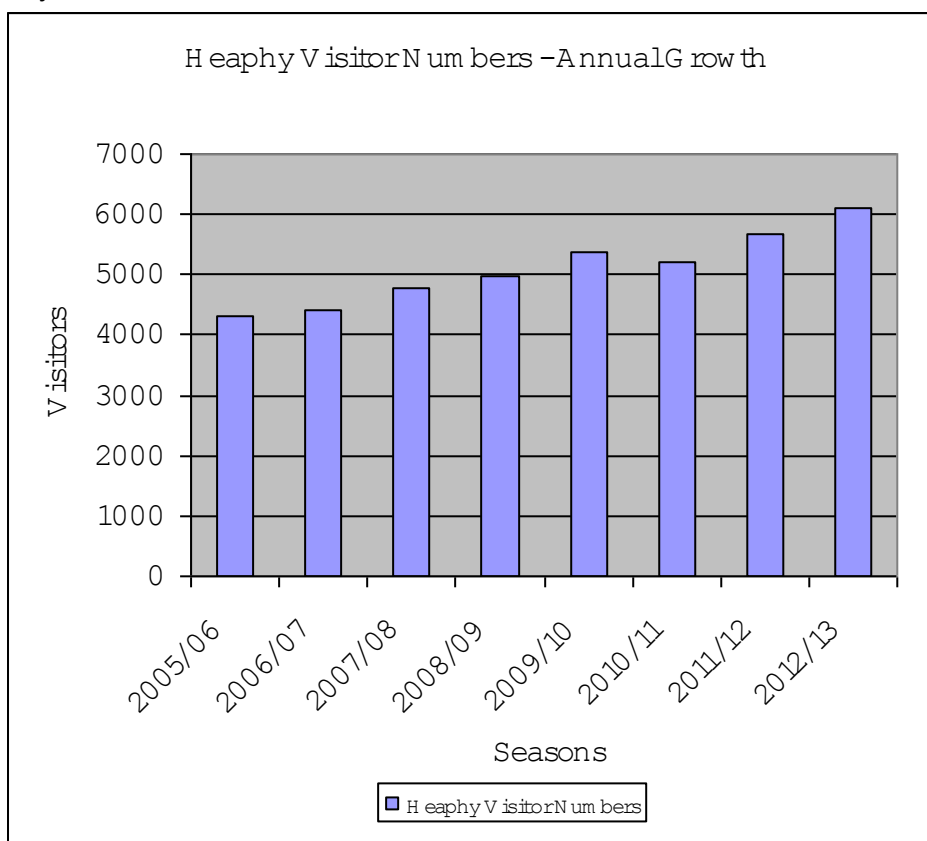
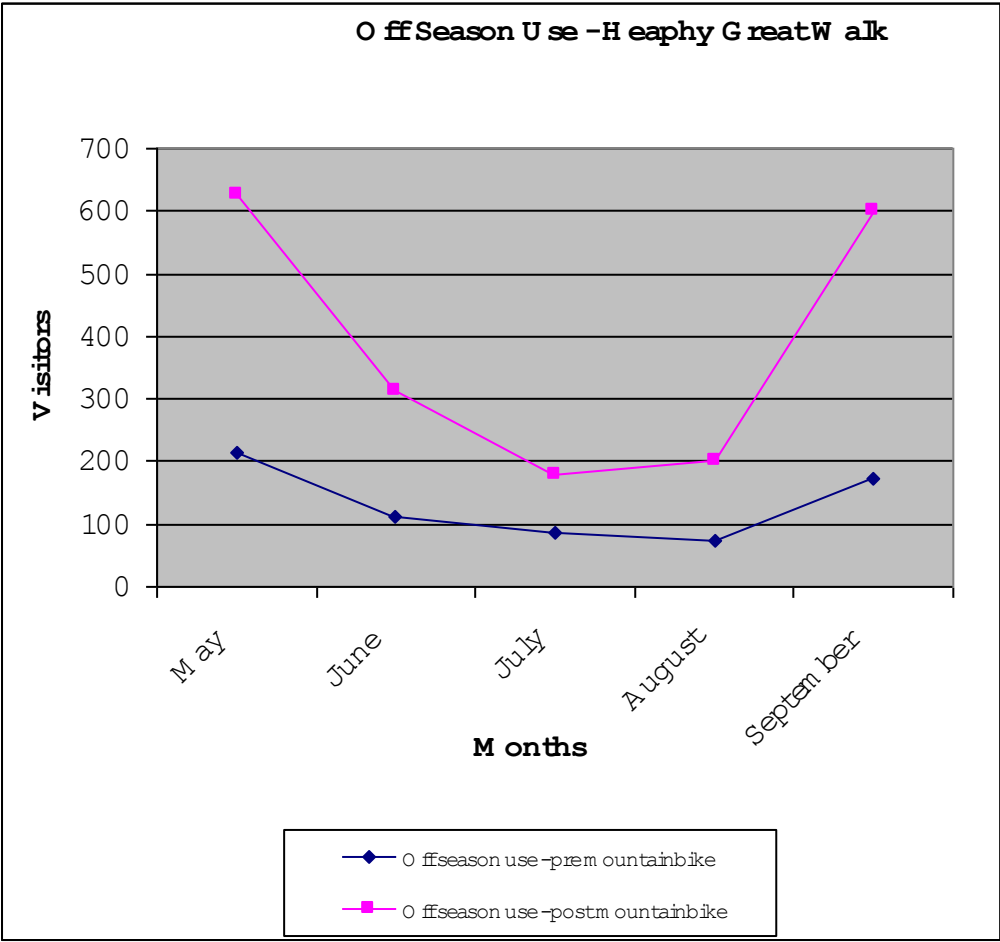


Table 1.0 - Heaphy Track Great Walk Visitor Numbers from National Visitor Booking System

Season	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
July		110	73	80	64	103	220	136	184
August		70	96	85	66	46	221	157	224
September		124	160	215	221	144	564	499	736
October	254	242	246	220	399	313	257	259	
November	363	298	310	341	511	392	310	411	
December	683	742	736	810	852	687	795	808	
January	796	745	750	829	983	728	870	746	
February	648	570	707	632	677	564	536	674	
March	623	581	798	675	687	490	544	733	
April	739	608	586	742	631	739	596	616	
May	136	204	191	270	191	624	553	701	
June	84	129	129	93	97	363	197	378	
Total Visitors for year	4326	4423	4782	4992	5379	5193	5663	6118	408

The overall impact of the mountain bike trial has been significant. It has resulted in a 282.6% increase in use of the track during the months 1 May to 30 September compared to use before the mountain bike trial period (refer figure 1.3). This has resulted in better overall use of the track and the facilities.

Figure 1.3 - Off season use on the Heaphy Track



In comparison, the Queen Charlotte Track has approximately 5,000 mountain bikers per annum from 1 March to 30 November. The track is 71km and can be biked over 2-3 days. It is graded as an intermediate/advanced grade 3/4 track. Mountain bikers do not have to carry their own overnight equipment and therefore the Heaphy Track has been described as quite a step up from the Queen Charlotte experience.

While overall use on the Heaphy Track has steadily increased since the trial began, there has been a decrease in the numbers of walkers using the track. While this could be attributed to the introduction of mountain bikers to the track, it was due to two significant weather events resulting in the closure of the track over the summer period of 2010 and 2011. This directly affected the number of people able to walk the track during the peak of the season when mountain bikers were not on the track.

The Heaphy Track has a very strong domestic market segment and the earthquakes in Canterbury during September 2010 and February 2011 has likely resulted in fewer people from Christchurch walking the track.

It is also worth noting that while the number of people walking the Heaphy Track has declined over the last few years, the number of people walking on the Abel Tasman Great Walk has also declined during this period (refer figure 1.4). This can be attributed to weather events and the decrease in international visitor arrivals to the region<sup>4</sup> due to factors such as the global financial crisis and changing visitor patterns as a result of the Canterbury earthquakes. While the Heaphy Track does not have the

<sup>4</sup> Commercial Accommodation Monitor, Nelson-Tasman, July 2013, Statistics New Zealand.  
Commercial Accommodation Monitor, West Coast, July 2013, Statistics New Zealand.

same level of international visitation as the Abel Tasman Great Walk, it is this wider trend combined with specific weather events on the Heaphy Track that gives us confidence that the decline in the number of walkers is not due to a perceived conflict with mountain bike use. It is positive to see that with the introduction of the mountain bike trial over the winter period of the past three years, the overall number of visitors to the Heaphy Track have steadily increased (see figure 1.5).

Figure 1.4 - Walking trends on the Heaphy Track compared to the Abel Tasman Great Walk

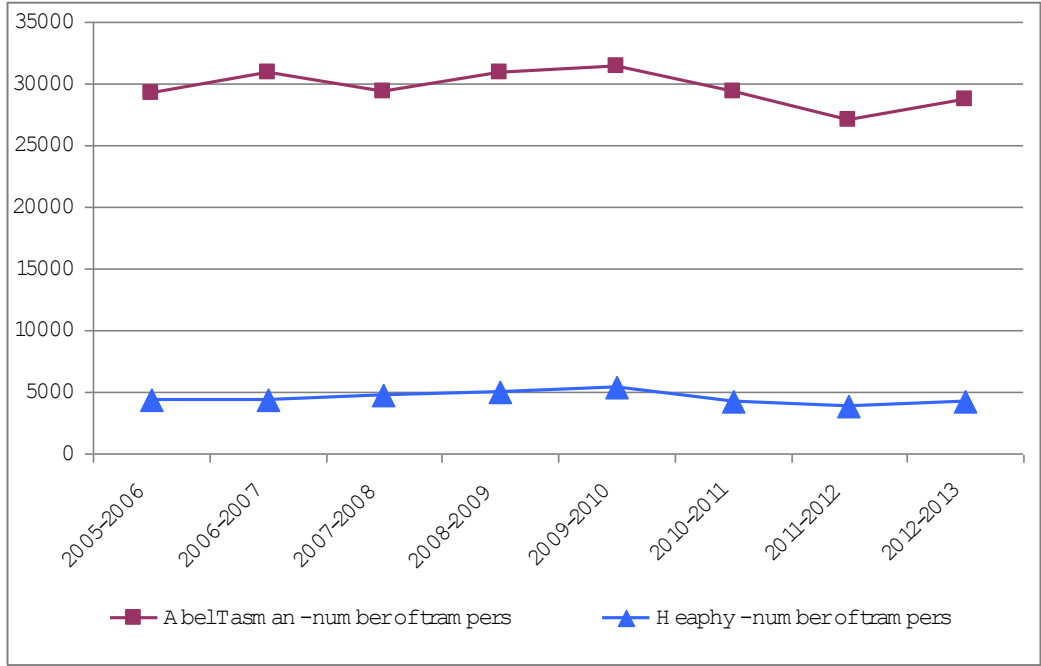


Figure 1.5 – Walking and mountain biking use trends on the Heaphy Track

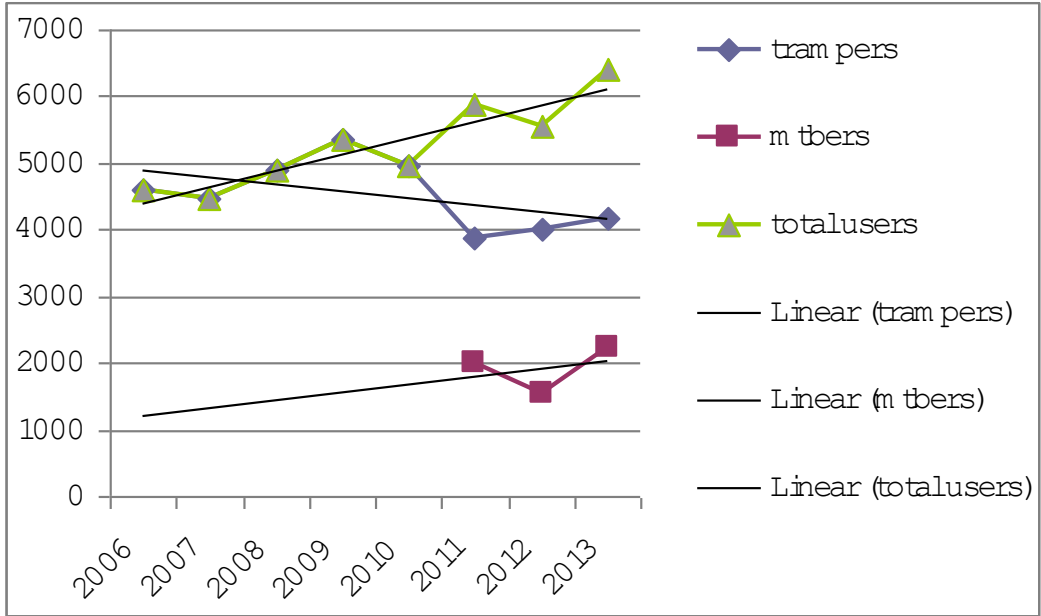
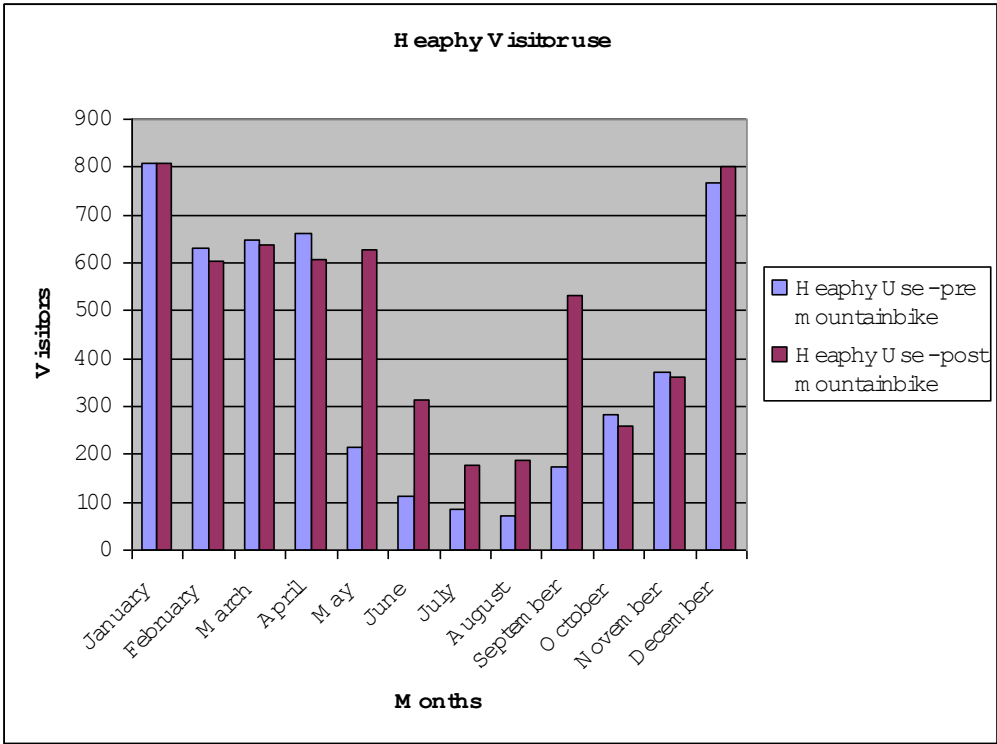


Figure 1.6 shows the average pattern of use on the Heaphy Track prior to the mountain bike trial. Since the start of trial, there has been noticeable increase in the number of visitors (particularly mountain bikers) during the period 1 May to 30 September in what has traditionally been termed the 'off-season' for the Heaphy

Track. The data shows that there is a decrease in use of the track by both mountain bikers and walkers during the colder winter months of June, July and August.

Figure 1.6 – Average patterns of use pre and post Heaphy Track mountain bike trial



Feedback from mountain bikers has been that the cold winter months are a deterrent to riding the track. Throughout the trial there was a strong preference for visitors to use the track in the months of September and May, with June, July and early August the least favoured.

There are safety issues associated with mountain bikers riding the Heaphy Track over the winter period. Mountain bikers like walkers need to carry equipment however, biking with equipment is much more difficult than walking. In most cases mountain bikers will carry approximately half the amount of clothing, safety and cooking equipment as walkers. Day light hours are reduced over the winter period meaning the time in which visitors have to reach their destination is reduced. These risks would be decreased by extending the season into the warmer months.

The daily carrying capacity for the Heaphy Track is approximately 110 people per day moving through the track. There is capacity to increase use of the Heaphy Track particularly during the months of October, November and early December. While March and April are higher use months there is still an opportunity to increase use. It is proposed that the season be extended to 1 March to 30 November, excluding the four days of the Easter holiday weekend. The Easter holiday weekend (Friday, Saturday, Sunday and Monday) is popular time to walk and the track is at capacity during this period.

An extension to the mountain bike season would ensure that mountain bikers have a reasonable opportunity to use the track during the warmer months of the year. This would also minimise safety issues associated with mountain bikers riding the track over the winter period. West Coast spring rains can dominate in September and October, however the likelihood of strong cold fronts, with snow fall to low levels and short days have passed. It is estimated that an extension to the mountain bike season

could result in up to 4,000 visitors mountain biking the Heaphy Track each year and increase the total number of people using the track 9,000 per annum.

It is considered that extending the season will not impact on walkers, however, this matter will need to be considered through a review of the Kahurangi National Park Management Plan.

The dates for the extended mountain bike season will be consistent with the season for mountain biking on the Queen Charlotte Track, however the proposal is to exclude mountain biking over the four days of the Easter holiday which is not the case on the Queen Charlotte Track.

2.3.2. Country of origin

71% of visitors to the Heaphy Track are New Zealanders and this increased to 86% during the mountain bike trial (refer figure 1.7 and 1.8). The next highest group of visitors by country of origin are from Europe and Australia. This is in contrast to the Abel Tasman, Routeburn, Kepler and Milford Great Walks where over 58% or more of the visitors are from overseas.

Figure 1.7 – Visitors to the Heaphy Track by country of origin

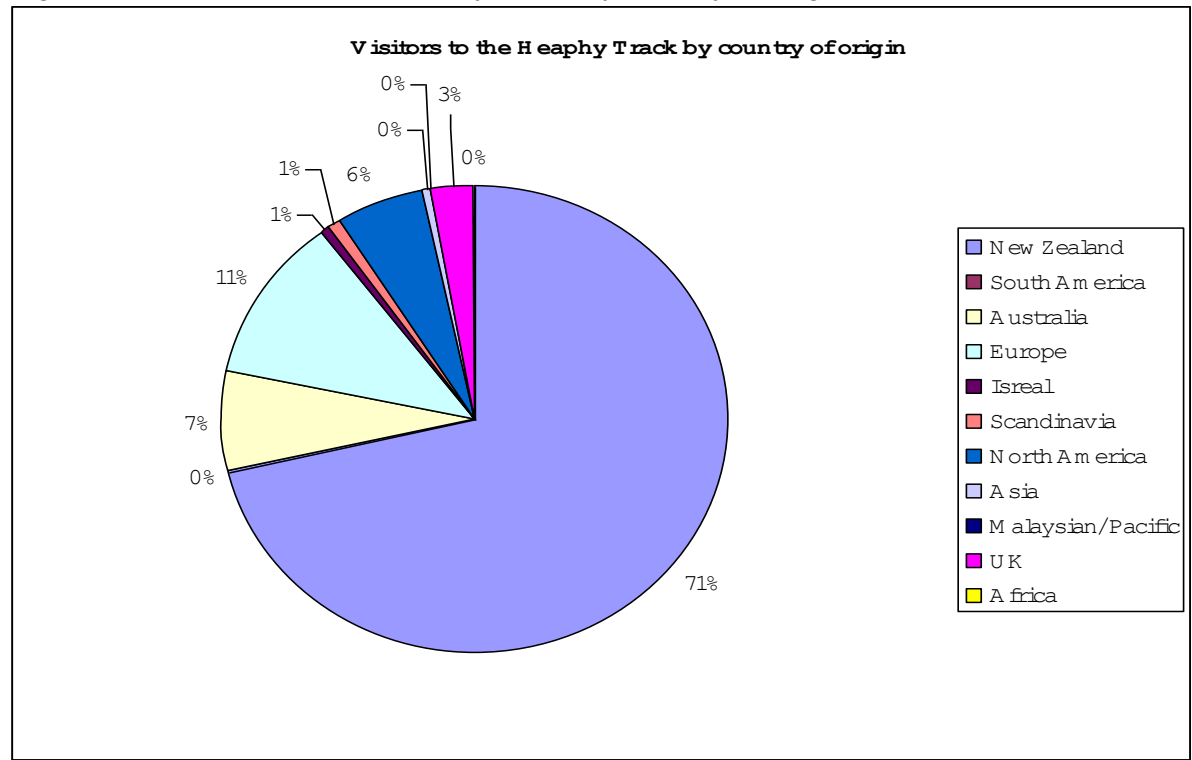
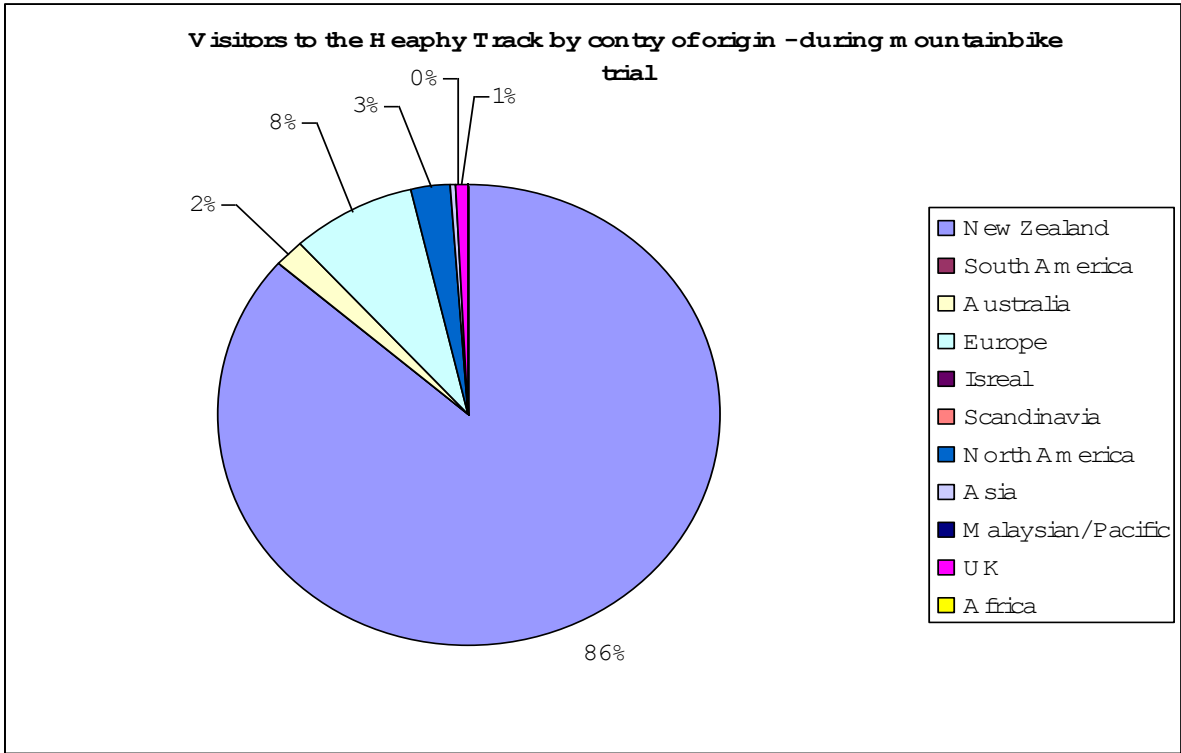


Figure 1.8 – Visitors to the Heaphy Track by country of origin over the mountain bike trial.



### 2.3.3. Age demographics

Mountain biking is a popular sport and recreation activity for New Zealanders. An estimated 202,237 New Zealand adults (6.1% of adult population) took part in mountain biking in 2007/08<sup>5</sup>. The largest proportion of cyclists is in the 35 -49 year old group. This market segment was reflected in those who mountain biked the Heaphy Track.

The predominant Heaphy Track user is a New Zealander over the age of 36. The Heaphy has the highest proportion of users in the 36-50 and 51-65 years old demographic segments of any Great Walk. On average, over the recent seasons, nearly 55% of all users are in the over 36 year old category and nearly a quarter of all users are either in the 51-65 year demographic category or 66 years and older. This is in contrast to other Great Walk's such as the Abel Tasman Coastal Walk where the predominant user is in the 18-35 years old category.

Interestingly, the difference between ages of walkers and mountain bikers does not differ.

### 2.3.4. Length of stay and direction of travel

The length of stay in year one of the mountain bike trial was 1.79 nights, increasing to 2.20 nights in year three of the mountain bike trial. This indicates that most riders are taking their time and enjoying the experience rather than attempting to ride the track in one long day.

At the beginning of the first year of the mountain bike trial some riders attempted to ride the track in a day and/or misjudged the level of difficulty and the time it would

<sup>5</sup> The New Zealand Cycleway Market Research, September 2009

take to reach a hut. As the trial period progressed the length of stay increased because the description of the track was changed from a Grade 3 - 4 Intermediate/Advanced to Grade 4 - 5 advanced/expert when wet. The message to visitors was that by taking 2-3 days to ride the track made for a much more enjoyable and satisfying experience.

The majority of visitors are riding from the Golden Bay to the West Coast. A large number of people start at both end, and ride the track in one direction and then back again. Day ride and overnight options into the Heaphy Hut and Perry Saddle also occur.

#### 2.4. Visitor feedback on the mountain bike trial

The Heaphy Track has been described as “the longest, most scenic, and for many people, the most rewarding mountain bike ride in New Zealand”<sup>6</sup>. There has been overwhelming positive feedback and support from visitors, politicians, the local community, media and staff on the quality of the work undertaken to allow for the continuation of mountain biking on the Heaphy Track.

The majority of visitors described their experience as great and hoped that access to mountain biking on the Heaphy Track would continue. Bryce Buckland said that he still rates *“the Heaphy Track as the best multi-day ride in New Zealand and riders he spoke to were full of praise for it and will be back another day”*.

#### 2.5. Track conditions and facilities

The Department received a lot of feedback about the apparent difference in the standard of the track as they rode from Golden Bay to the West Coast. From beyond Saxon Hut, sections of the track tended to become muddy, rough and uneven and narrow. This was not necessarily negative however, a programme of work commenced to upgrade some of the severely eroded sections of the track. This work will continue.

During the trial period the Department replaced the Perry Saddle Hut and the Heaphy Hut. Four of the older style six wire Forest Service swing bridges were replaced with suspension bridges more suitable for mountain bike use and walkers on a Great Walk. It is also planned to replace the James Mackay Hut.

Feedback regarding the new facilities has been very positive.

#### 2.6. Media

There have been numerous media articles and stories profiling mountain biking on the Heaphy Track resulting in increased awareness of the Great Walk, conservation and its benefits.

A great example of profiling the Heaphy Track was seen in the Australia Geographic magazine<sup>7</sup> and with a corresponding video on their website<sup>8</sup>.

<sup>6</sup> Jonathon Kennet, New Zealand Cycle Trail Project Manager

<sup>7</sup> Refer Appendix 1

<sup>8</sup> <http://www.australiangeographic.com.au/outdoor/heaphy-track-new-zealand.htm>

## 2.7. Physical Track impacts

Physical impact monitoring on the Heaphy Track was undertaken at three locations on the West Coast side and at two locations on the Golden Bay side. These locations were selected to show a representative example of track grade, construction and physical characteristics along the track. Locations were selected where no track upgrade work was scheduled to occur.

The conclusion from the photo monitoring reports, which can be found in Appendix 2, show few impacts as a result of the track being opened up for mountain bike use.

- Monitoring results show that where the track is well formed and constructed and has the ability to drain freely the 3 year trial of mountain bike use appears to have had no significant impact on these sections of track.
- Certain sections of track are subject to regular flooding and/or being submerged by high tide. They can become muddy when wet and as a result show evidence of bikers and walkers.
- Certain sections of the Heaphy Track between Blueshirt Creek and James Mackay Hut and between James Mackay Hut and Lewis hut are poorly formed, wet and muddy and to need be upgraded to meet the needs of both mountain bikers and walkers. This work is programmed to occur in 2013/14.
- High rainfall events such as those that occurred in 2010 and 2011 can severely damage the track and infrastructure. Reports from hut wardens, track maintenance workers and users suggest that these storm events have caused considerably more impacts on the track than both mountain bikers and walkers.
- Overall there are sections of track where the tracks width and rocky geology has meant very little in terms of effects noted.

## 2.8. Riding off the track

The Heaphy Track has a well defined track corridor and there have been no reports of mountain bikers riding off the track. Hut Wardens, track maintenance workers and commercial operators report that they have not seen any evidence to suggest this is occurring.

## 2.9. Compliance with National Park Bylaws and Mountain Bikers Code

The Kahurangi National Park Bylaws were amended in April 2011 to allow mountain biking on the Heaphy Track. These bylaws made it possible to enforce the rules of the trail.

Over the period of the trial, there were no major issues that required enforcement. Some minor issues did occur primarily at the beginning of the trial. These included riding at night, storing bikes in huts and riding without a bell.

At the beginning of the first year of the mountain bike trial some riders attempted to ride the track in a day and/or misjudged the level of difficulty and the time it would take to reach a hut. This was managed by changing the description of the track from a Grade 3 - 4 Intermediate/Advanced to Grade 4 - 5 advanced/expert when wet and promoting that track as being more enjoyable and satisfying when mountain bikers take 2 -3 days.

Some mountain bikers ignored the rules regarding no bikes in huts or on verandas and this issue was addressed by hut wardens.

There were comments received that most mountain bikers did not have bells on their bikes. This was not a statutory requirement with the Mountain Bikers Code stating that mountain bikers should respect others and use a bell or greeting when approaching

others. Feedback has indicated that the majority of mountain bikers complied with the code.

#### 2.10. Damage to signs

Department staff, hut wardens and users have not reported any damage to signs over the mountain biking trial period.

#### 2.11. Conflict between walkers and mountain bikers and the mountain bikers code

Feedback during the trial indicated that conflict between walkers and mountain bikers has been minimal. From 144 comments only 6 were negative while 31 comments were positive; this demonstrates how both walkers and mountain bikers are being courteous to each other.

One person commented that *“it was great to see the all the users, walkers and mountain bikers, sharing the track and enjoying the experience together. It was a very social occasion”*.

The main theme of negative feedback was that mountain bikers were not slowing down enough when approaching blind corners and were surprising walkers.

An example of this was the experiences of one user who stated *“The first group we encountered was the only group I did not enjoy. We were on the way up and they were on the way down. The first rider came at a high speed around a corner and yelled out so my surprise was big and unpleasant. He had no hope in hell to stop within the visible distance. No apology, but he did warn us that another eight riders were coming in his group. Having heard that I went to the inside of the track, clearly the side not normally used by bikers as well as walkers. The next rider came flying down and told me that I should walk on the left side (outside in this case): stupid and inconsiderate. The following riders were slower and appeared to be less skilled and experienced. All other mountain bike riders we met from then on (probably about 20) were courteous and followed the rules/code more or less”*.

This is a valid concern as the behaviour of some riders can cause conflict with walkers. The Department, Mountain Bike New Zealand and stakeholders developed and promote a Mountain Biker Code with three key messages

- Respect others
- Respect the rules
- Respect the track.

In regard to minimising conflict with other users, mountain bikers are asked to: Stay in control, so you can safely avoid others and keep yourself intact.

- Give way to others.
- Use a bell or greeting when approaching others.
- Ride shared use tracks in small groups. A bike train with a dozen riders displaces other users.

As part of this review, concessionaires who used the Heaphy Track, were asked whether they considered that mountain bikers had complied with the Mountain Biker Code and if they identified any conflict between walkers and mountain bikers and if so how often.

The responses were that there were no reports of conflict and comments from concessionaires and/or guides included:

*“I walked through the Heaphy about 20 times and always found mountain bikers to be courteous and considerate.”*

*“There was no conflict, none at all that I am aware of, in fact all I saw and experienced was happy and respectful interactions and this included fantastic up-beat evening conversations in the huts.”*

*“We did not get negative feedback from either parties” (mountain bikers or trampers).*

Overall the compliance of mountain bikers adhering to the mountain bikers code has been high. It is difficult to fully gauge the effect of mountain bikers upon walkers due to the fact that there were few walkers on the track during the mountain biking trial, however, the limited number of instances of conflict reflects that both the mountain bikers and walkers are sharing the track with consideration for each other. It is recommended that the mountain bikers code be retained should mountain biking continue on the Heaphy Track.

## 2.12. Flora and Fauna Impact

### 2.12.1. Weeds

Hut Wardens and track maintenance worker report that there has been no evidence of mountain bikers transferring weeds along the track during the trial.

### 2.12.2. Track side vegetation

The Heaphy Track has a well defined track corridor and there has been no evidence of damage to track side vegetation.

### 2.12.3. *Powelliphanta* Snails

Monitoring was carried out to determine the proportion of crush related deaths of snails on selected sections of the Heaphy track.

Monitoring of *Powelliphanta* land snails was undertaken on 5 June and 5 September 2013. From both inspections a total of 99 snails and shells were found along the sections of track sampled or nearby (96 on the track).

Approximately 64% of these showed signs of predation, 20% of shells were found intact, and assumed to have died naturally, 10% were assessed as having died from crushing, 4% had uncertain cause of death (crushed, but possibly post-death) and 3% of records were live snails.

Overall, predation of *Powelliphanta* is the most significant impact on the species and occurs throughout the whole habitat area. Compared to this, the impact of mountain bikers on the species is considered to be minimal. The percentage of shells where crushing was identified as cause of death was relatively small. In addition, the effect is localised, as the Heaphy Track covers only a small portion of the snails' habitat. The monitoring is not able to determine whether snails have been crushed by foot or bike traffic.

However, as *Powelliphanta* are in serious decline, the Department will continue monitoring, highlight the importance of *Powelliphanta* to visitors and reinforce that riding on the track at night is not permitted.

#### 2.12.4. Kiwi

There have been no reports of impact on Kiwi.

#### 2.13. Damage to Historical and Cultural Heritage

There have been no reports of damage to historical features on the track.

The story of the Heaphy Track has been brought to life through interpretation at the huts and visitors are able to read about early Maori settlement on the West Coast *Tai Poutini*, European exploration and early travel and recreation in the area. An example of this is shown below where the original windows of the Heaphy Hut have been restored and used to tell the stories of the Heaphy Track (see figure 1.9).

Figure 1.9 - Heaphy Hut interpretation window



#### 2.14. Economic impact

During the period of the mountain biking season the economic benefit to the regions is estimated to be \$ 756,000<sup>9</sup> (see table 1.1). Overall the total number of people mountain biking and walking the Heaphy Track contribute an estimated \$2,312,604.00 per annum to the Regions (see table 1.2).

Twelve concessionaires and businesses were asked what effect the decision to allow seasonal mountain bike use of the Heaphy Track had had on their concession or business.

Eight responses were received and comments included;

<sup>9</sup> <sup>9</sup> Assumption based on average expenditure per trip of \$378.00 for each mountain bikers refer New Zealand Cycleway – Market Research September 2009 page iii

- *"I have had a few more clients for my car relocation service... during the quiet winter period".*
- *"It has given us much needed winter time work as at this time of year it is very quiet in Karamea".*
- *"The tourism business in Karamea is very seasonal; opening the Heaphy Track to mountain bikes is very helpful in ironing out the seasonality of business by creating winter trade for the region. To maximise the benefit this initiative provides, Karamea needs to provide riders with a marketable mountain biking activity to encourage more riders to stay in Karamea after completing the Heaphy. I would like to see the opening of the Oparara/Fenian Track to mountain biking if not all year round at least to coincide with the Heaphy. The great majority of bikers (perhaps up to 80%) chose to arrange transport out of Karamea immediately upon completing the track".*
- *"The seasonal use of mountain bikes on the Heaphy has affected my business but only in a small way. Regardless of what bikers say, for walkers there is a huge deterioration in the enjoyment when they are forever scared of a biker coming up behind then or rushing toward them around a blind bend. I have had a number of enquiries that have been turned off when I pointed out that mountain biking season was still on".*
- *The Karamea Information Centre commented that "it is the only outlet in Karamea selling fuel. During the first year of trials we stayed open longer hours into the winter season and had only one sale to a biker. We were out of pocket because of wages, and did not continue the service the following two seasons. Mountain bikers begin the track at the Golden bay end, and have all their transport, plus minimal accommodation already pre organised".*
- *However; a mountain biker in September 2013 commented that "there were 93 hut spaces booked for the weekend and only 5 walkers and said that we would have stopped for lunch at Karamea but there were no visible roadside signs advertising food or Cafe snacks and Coffee. We expected to see something at Last Resort, (where we would previously stop) but no, all quiet, so maybe they continue to financially miss out on passing visitor trade and need to get themselves organized, so all the way to Gibbys cafe in Westport was our next stop (yummy food !). I hope the people at Karamea do not complain that they don't make much from passing mountain bikers during the winter. They better get themselves sorted".*
- *"Mountain biking on the Heaphy Track gave us the opportunity to expand our business to include the Heaphy Track and in doing so develop a new part of our business which is multi day mountain biking tours. Being a winter only season it has also had the effect of bring extra business in what is normally the very quiet winter months, not only for guided tours but also with bike hire, transport and support for mountain bikers. It has helped us give extra winter work to our guides and also offer work to summer season guides and drivers in their quiet season. The downside is that very few people want to bike the track in June and July so having a longer season would help to fill in what is currently very quiet shoulder seasons".*
- *One concessionaire commented that they "did not believe that fits with our philosophy of walking through the track at ones own pace, being educated about flora and fauna and conservation issues. We carry magnifying glasses, and when our clients stopped on the track looking through this, it isn't conducive with speeding mountain bikes. After years of surveying our clients of whether or not they would walk the track with*

*mountain bikes, almost 100% said they wouldn't. Many of them have expressed their opinion that walking on a Great Walk for a wilderness experience, which is what the Heaphy is renowned as, the experience is compromised by mountain bikes being present. Because of this we made the decision not to guide people over the Heaphy during the mountain biking season, May 1 to September 30. Although we don't get a lot of clients over winter, it has meant the loss of many thousands of dollars in lost revenue".*

Table 1.1 – Annual economic contribution during the period of the mountain bike season (1 May – 30 September)

	Year 1	Year 2	Year 3
No of visitors x \$378 per trip <sup>10</sup>	\$752,976	\$582,876	\$840,294
Annual economic contribution from the total of all visitors to the Heaphy Track <sup>11</sup>	\$2,232,090	\$2,060,100	\$2,445,660

Table 1.2 - Forecast increase in the annual economic impact of the next 5 to 10 ten years

	...over next 5 years	...over next 10 years
Target total visitors	40,000	80,000
Target visitor gain	10,000	20,000
Annual economic contribution (total) <sup>12</sup>	\$2,676,800	\$3,402,000
Annual economic contribution (gain) <sup>13</sup>	\$756,000	\$756,000

The economic benefit from the Heaphy Track on the Buller and Nelson Regions is estimated to increase to \$2,676,800 per annum over the next five years.

<sup>10</sup> New Zealand Cycleway – Market Research September 2009 page iii. Average expenditure per trip of \$378.00 This is based on annual predicted increase of 2000 visitors resulting and achieving 9000 visitors per annum in year 5. Further, this calculation is based on the statistic that the average visitor (domestic visitors spends and international) spends. Assumption based on average expenditure per trip of \$378.00 for both walkers and mountain bikers (refer New Zealand Cycleway – Market Research September 2009 page iii) for the period 1 May - 30 September.

<sup>11</sup> Assumption based on average expenditure per trip of \$378.00 for both walkers and mountain bikers for the year ending 30 September.

<sup>12</sup> This is based on annual visitor numbers rising to 7000 in the first year of development, 7500 in the second year, and 8000 in the third year, 8500 in the fourth year, and 9000 in the fifth and five following years of the 10 year period.

<sup>13</sup> This is based on annual predicted increase of 2000 visitors resulting and achieving 9000 visitors per annum in year 5. Further, this calculation is based on the statistic that the average visitor (domestic visitors spends and international) spends. Assumption based on average expenditure per trip of \$378.00 for both walkers and mountain bikers (refer New Zealand Cycleway – Market Research September 2009 page iii)

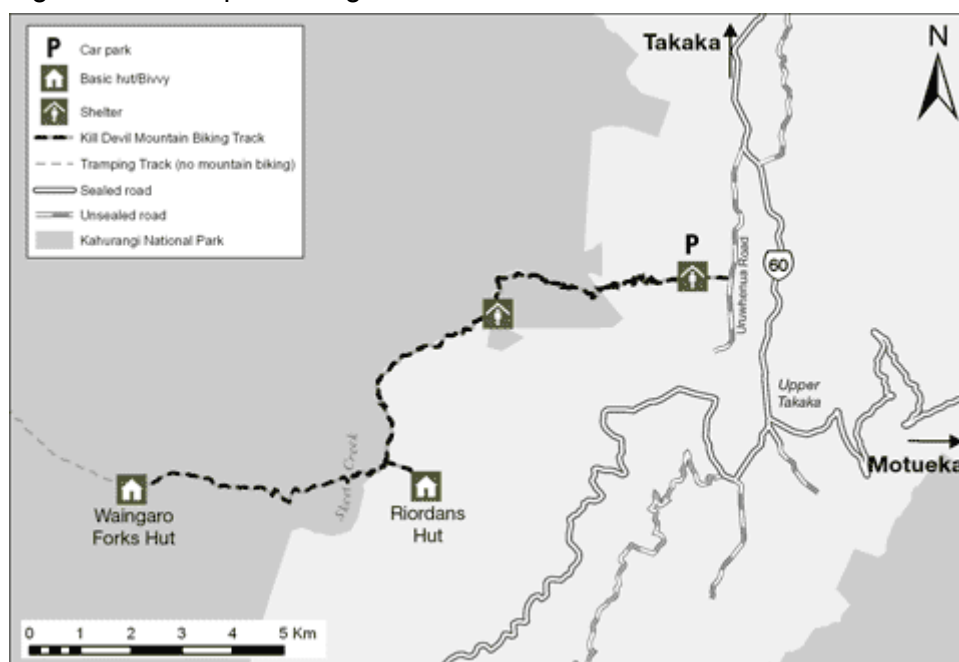
### 3. FLORA TO BARRON SADDLE AND KILL DEVIL TRACKS

This section of the report describes the key components of the monitoring programme and discusses the results.

#### 3.1. Setting the scene

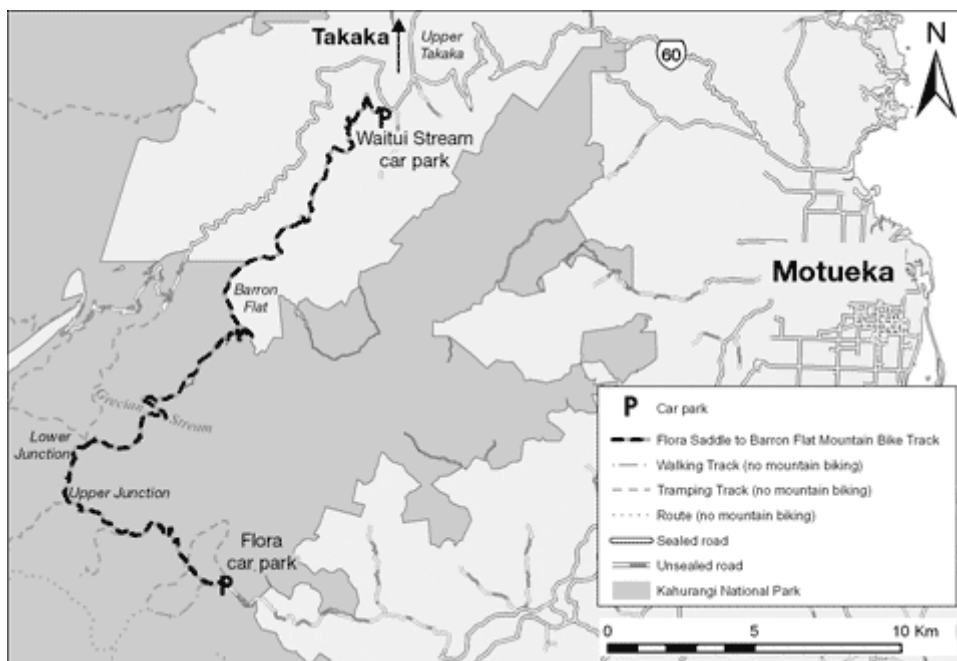
The Kill Devil track located in the Kahurangi National Park is a "there-and-back" one day or overnight ride for advanced (Grade 4) and expert (Grade 5) riders, starting and finishing in Upper Takaka, Golden Bay. It is technically challenging, on rough, remote terrain, and visitors may need to walk or carry their bikes at various points (see figure 2.0).

Figure 2.0 – Map showing the Kill Devil Track



The Flora Saddle to Barron Flat mountain biking track is a one day backcountry ride that traverses through a variety of landscapes and terrains. It follows a historic pack track, connecting the Flora car park (Graham Valley Road end, Motueka River valley) with Barron Flat (Upper Takaka, Golden Bay). The full trip offers a challenging ride in a backcountry environment for riders of intermediate skill level (Grade 3), with a mixture of technical, single track and cross country riding experiences (the track is mostly downhill and so less difficult if you start at the Flora Saddle end) (see figure 2.1).

Figure 2.1 – Map showing the Flora to Barron Saddle Track



### 3.2. Visitors to the Barron Saddle and Kill Devil tracks

In 2010, prior to the introduction of mountain biking approximately, 2,300 people walked the Flora to Barron Saddle track. Staff report that visitor use on this track has remained unchanged since the introduction of mountain biking. In 2011, 2,200 walkers and mountain bikers used the track. The counter malfunctioned in the 2012, resulting in incomplete and unreliable data.

There is no visitor counter on the Kill Devil Track. Staff have not noticed any change in visitor numbers since the introduction of mountain biking. Staff and concessionaires estimate that use is low with 400 people using this track each year.

### 3.3. Visitor experiences

The Department received few comments relating to these tracks highlighting the small amount of use they have received over the trial period.

One party commented that *“the Barron’s Flat track was awesome – great idea to let bikers in – and likely could link up with some other tracks down that way that I hear are now opened. This track was suggested by the shuttle driver after it was too wet to ride the Heaphy”*.

### 3.4. Off track riding

There have been no reports of mountain bikers riding off the track. DOC staff, track maintenance workers and users report that they have not seen any evidence to suggest this is occurring. Mountain bikers are not venturing further into side trails nor onto the Cobb Valley or Salisbury Track.

### 3.5. Physical Track impacts

Physical impact monitoring on the Flora to Barron Saddle and Kill Devil Tracks was undertaken during the mountain biking trial. Analysis of the monitoring data of the sites on each track resulted in the following findings:

- The three sites monitored on the Flora to Barron Saddle Track show minor changes to the track surface that occurred during the mountain bike trial period. However, it is difficult to determine whether these occurred solely because of mountain bike use. The impacts are more likely attributed to high rainfall and the lack of adequate track drainage.
- The two sites monitored on the Kill Devil Track show no effects from the introduction of mountain biking.
- There have been no reports of damage or vandalism to signs on the track.

### 3.6. Trial enforcement issues

Over the period of the trial there, there were no major issues that required enforcement.

### 3.7. Sign Damage

Department staff, hut wardens and users have not reported any damage to signs over the mountain biking trial period.

### 3.8. Conflict between walkers and mountain bikers

There were no reports of conflict between walkers and mountain bikers.

### 3.9. Fauna and Flora Impact

#### 3.9.1. Weeds

There was no evidence of mountain bikers transferring weeds along these two tracks during the trial.

#### 3.9.2. Track side vegetation

Both tracks have well defined track corridors and there has been no evidence of damage to track side vegetation.

### 3.10. Mountain bikers code compliance

There have been no reports of non-compliance with the mountain bikers code.

### 3.11. Helicopter Downhill biking on Kill Devil Track

There have been no reports of heli-biking on the Kill Devil Track.

### 3.12. Economic impact

As part of the review the Department asked twelve concessionaires and businesses what effect the decision to allow seasonal use of the Kill Devil Track or Flora Saddle to Barron Saddle Track had had on their concession or business. Of the eight responses no one commented that mountain bikers had an effect on their business.

## 4. RECOMMENDATIONS

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Based on the findings of the review, this report makes the following recommendations in regards to the future of mountain biking on the Heaphy Track:

### Heaphy Track

1. Allow mountain biking to continue on the Heaphy Track.
2. Extend the mountain bike season to 1 March to 30 November excluding the four days of the Easter holiday weekend.
3. Social monitoring should continue to assess conflict between mountain bikers and walkers.
4. There has been sufficient physical monitoring to conclude that no further impact monitoring is necessary.
5. The monitoring of *Powelliphanta* land snails should continue and the Department will highlight the importance of *Powelliphanta* to visitors and reinforce that riding on the track at night is not permitted.
6. All other previous conditions set for the mountain bike trial should be maintained.

### Flora to Barron Saddle & Kill Devil tracks

1. Allow mountain biking to continue on the Flora to Barron Saddle and Kill Devil tracks.
2. There has been sufficient social, physical and ecological monitoring to conclude that no further monitoring is necessary.
3. All other previous conditions set for the mountain bike trial should be maintained.

## 5. APPENDIX 1 – AUSTRALIAN GEOGRAPHIC OUTDOOR – HEAPHY ADVENTURE


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ADVENTURE | HEAPHY TRACK, NZ



WORDS DALLAS HEWETT PHOTOS DEREK MORRISON

# savouring



In a streak of blue Mandy drops down  
through the tussock toward Goulard Downs.

# the ride

A trial to allow mountain bikers access to one of New Zealand's great walks sounded to good to be true for Dallas Hewett and Derek Morrison. Rolling out under heavy skies, the lads are joined by local lass Mandy Richards to savour this unique opportunity - a ride on the iconic Heaphy Track.

**M**ANDY IS THE Heaphy Track's self-proclaimed number one fan. Having already ridden the track several times this season, she is leaving husband John and four-year-old son Kier behind to join Derek and I for another traverse. "Because I can!" she exclaims, flashing a cheeky grin.

John and Mandy operate Escape Adventures from their bike store in the quirky township of Takaka, nestled in New Zealand's stunning Golden Bay region. They have sorted bikes for the ride and, although we are keen to ride without a guide, Mandy's enthusiasm to join us is infectious.

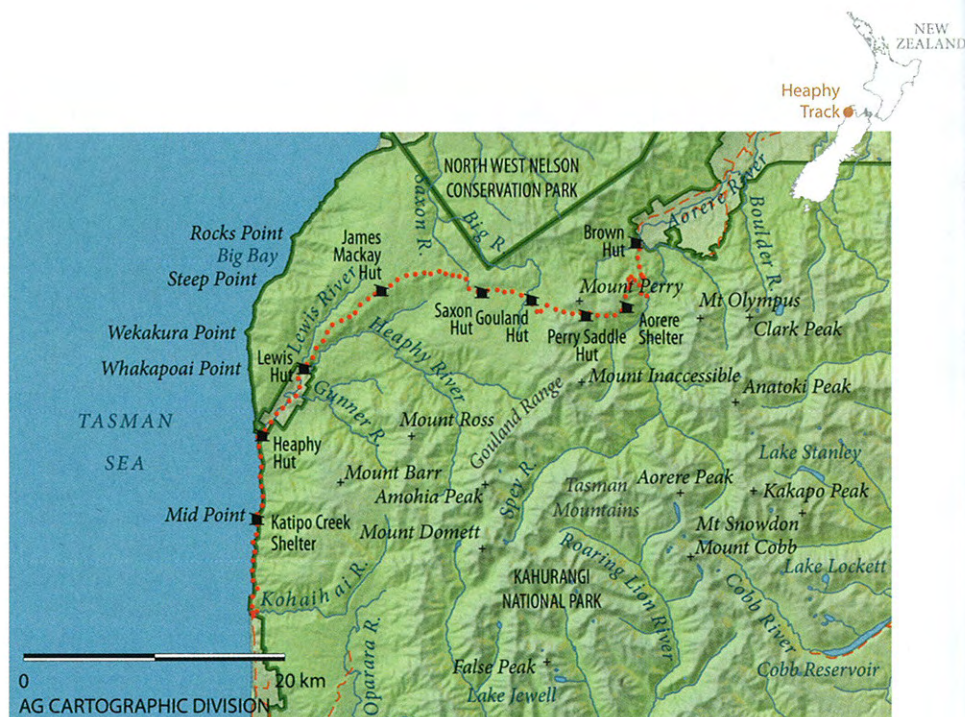
The opening of the Heaphy - as the track is affectionately known - to mountain bikes during the winter months is part of a three-year Department of Conservation (DOC) trial.

The Heaphy has long drawn the interest of bikers; as far back as 1936 Wilf Broughton and Noel Pope completed the first known Heaphy cycle trip as part of a 21-day tour around the top of the South Island. Originally built for packhorses, the track has a hard surface and is mostly well-drained, enticing bikers during the '80s and '90s when mountain biking really took off. The track was closed in 1996 and legislation precluded bikes on the Heaphy since - so began a lengthy campaign to regain access. It took nearly 15 years before, in May 2010, the Department of Conservation commenced the three-year trial.

Early Polynesians were drawn to the environs that flank the Heaphy River at the western end of the track, not only as crossroads for tracks north, south and inland, but the lush, sheltered subtropical areas that provided abundant food from land and sea.

In recent history, many attempts were made to make 'good' the Heaphy's harsh environment. A combination of surveyors, prospectors, farmers, pioneers and adventure seekers litter the pages of historical journals with tales of exploration and hardship.

In modern times the Heaphy has claimed numerous lives and seen many a tale of trampers losing their way, spending days and nights roaming lost as search parties scour vast inhospitable expanses. In 1980 three walkers actually died when they were swept into treacherous seas while crossing the rocky promontory at Crayfish Point between the Heaphy Hut and Kohaihai. "Don't underestimate the Heaphy," writes author Gerard Hindmarsh, "It's a powerful and elemental environment".



### A WEKA WELCOME

We sign the DOC intention book at Brown Hut, the eastern end of the track. Under ominous skies Mandy, Derek and I roll over the bridge, which crosses the Brown River, to begin the long climb toward Perry Saddle.

Perched above sits the Goulund Range and the beginning of the Kahurangi Wilderness. Running 144km north to south and up to 60km wide, Kahurangi National Park is a vast, remote wild area. The 455,000ha of wilderness fills the South Island's north-west corner and is the second largest stretch of unadulterated wilderness left in NZ.

The track meanders from the rain-soaked podocarps quickly lifting us into mature forest dominated by tall red beech, hard beech, rimu and miro. The air in the valley is humid and still and Mandy warns it's a long gradual climb, "that can feel like it's never going to end".

We portage our bikes around a huge landslip of logs, rocks and debris. Massive trees and tonnes of earth have slipped down the steep ridge wall after a torrent of rain hit the region only weeks earlier. Perry Saddle, which sits atop the climb, had recorded 1200mm in a matter of weeks. Mandy tells us a swing bridge on the Aorere River that stood untouched for a century has been completely 'taken out' by swollen waters.

The 18km stretch from Brown Hut to Perry Saddle rises from near sea level to a little more than 900m. We climb without break, intent on pushing through to Goulund Downs Hut. Mandy leads us up a sidetrack to Flanagan's Corner; at 915m this is the highest point of the track. The jagged

pillars of the aptly named Dragons Teeth jut high above us; my eyes are drawn along the multitude of rocky ridgelines falling away into the Aorere Valley. The colours that engulf the mountain vista in the soft afternoon light are easy on the eye. I stare, transfixed by the panorama.

My sweat-soaked body is quickly chilled by the bite of mountain wind. A plume of dark-edged clouds begins to swirl about and blanket the farthest ridge tops. "Could be a good option to stay at Perry Saddle Hut, I'd say," says Derek. Mandy and I heed Derek's call, and the sudden drop in temperature.

Five bikes stand against the veranda outside Perry Saddle Hut when we arrive. "Water's just boiled," announces a voice as I swing open the hut door. "Help yourself, eh." Sheltering in the warmth and comfort of the hut are five others; all have arrived by mountain bike.

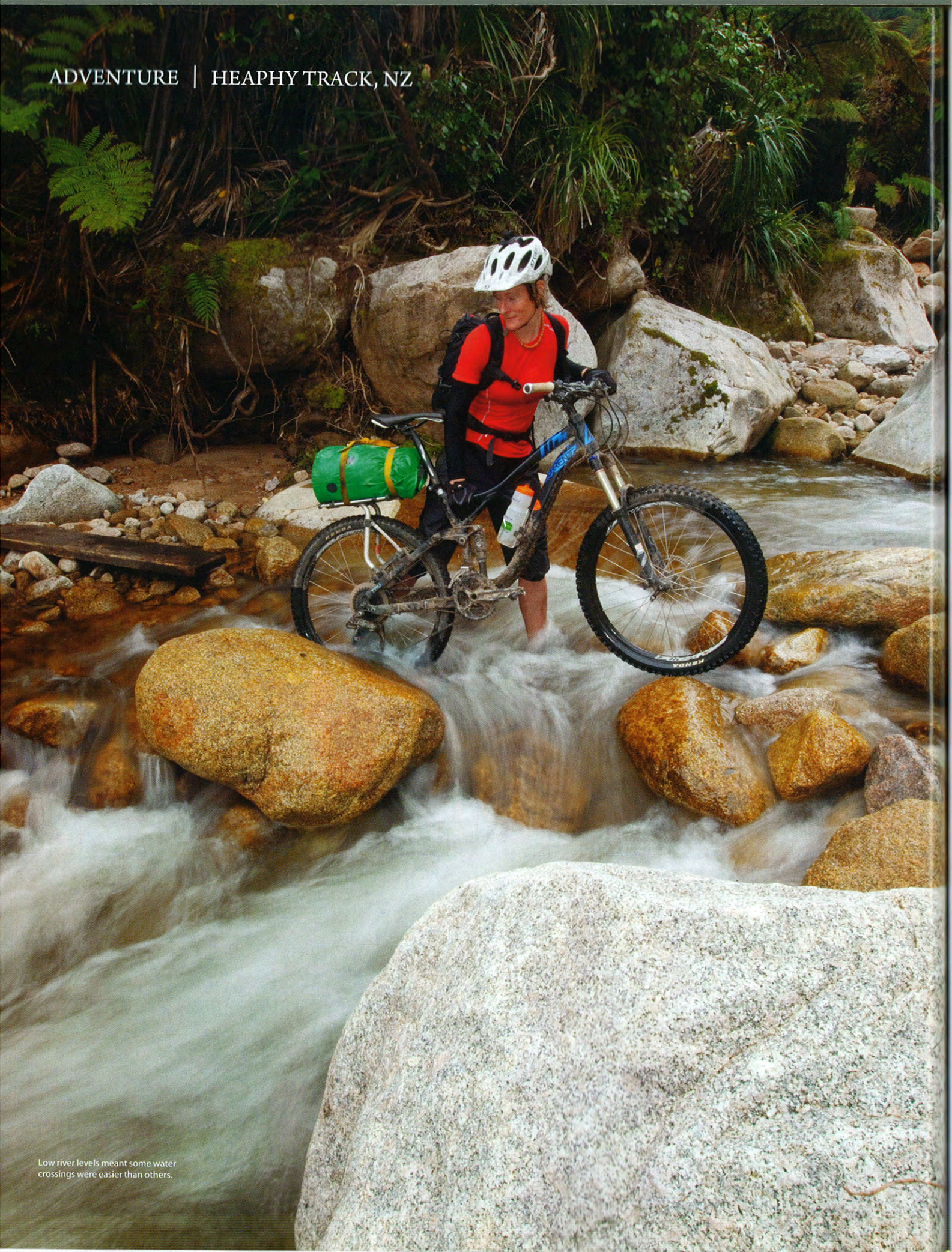
I venture outside with a cuppa, cosily wrapped in every layer of clothing I have. The twilight is a pleasant and spectacular surprise; the sky is laced with luminous stars offering a window into the heavens. The flash of intermittent lightning illuminates the distant ridgelines, but above the hut it is clear - for now.

A strange creature captures my eye in the darkness on the ground beyond the track. A bird strolls toward me with a casual, almost stylish, swagger; it pauses, looks me up and down, and struts by centimetres from my foot. "It's a weka mate," Derek announces. "He weka weka!" "Hey little weka," Mandy chimes in. I quickly see why these flightless birds are a favourite of the locals as three of them



Dallas skips puddles left by the overnight deluge on a beautiful start to day two, just beyond Perry Saddle Hut.

ADVENTURE | HEAPHY TRACK, NZ



Low river levels meant some water crossings were easier than others.

Impressive trail infrastructure includes awesome huts and – sometimes – easy tracks!



Totem pole of shoes. You've got to wonder about the roller blades.

## The Downs are amazing... An array of rivers, creek and heath-covered environs stretch across them.

direction, hemmed in by snow-capped mountains. The red tussock and wire rush, which predominate, create a distinctive and somewhat uniform red-brown appearance.

We descend the rocky track bathed in morning sunlight at full tilt. A little too quickly, I am reminded when my rear tyre pops and I am forced to hit the anchors. "Pinch flat," I call as Derek and Mandy quickly approach down the rocky tussock-lined section.

Not long after, we pass Goulund Downs Hut, the oldest hut on the track. The hut is surrounded by lush, green grass, a legacy of the Forest Service and its packhorses that regularly plodded the track.

Just on from the hut begins a short, winding section of trail that transects a stunning piece of enchanting forest. This little patch of stunted beech is a wonderland, swathed in mosses and lichens giving it an ancient, mythical, feel.

We leave our bikes and explore the labyrinth of limestone outcrops, caves and tunnels that dissect the forest. The only sound is the trickle of unseen watercourses snaking their way underground.

Suddenly the distinctive clatter of chains slapping and derailleurs clicking breaks the solitude. I peer back, and spot three riders wrestling bikes around the twisting track. Three young riders huff and puff as they quiz us for details about the track ahead. They are on a single-day mission to the west coast in hope of making a return flight to Nelson.

The Heaphy is a manageable, single-day prospect for a fit rider in favourable conditions, however this is not encouraged by DOC, in an effort to minimise track damage and ensure an enjoyable experience for all. After a brief chat it is safe to say these young lads have underestimated the Heaphy; enthusiasm and exuberance could quickly prove a dangerous cocktail in these parts.

We return to our slow-paced exploration of the forest and I ponder how much of this stunning environment the lads will miss as they flog themselves against the clock. We agree that there is a certain art to slowing down and truly taking in an experience as unique as the Heaphy. "But I'm sure I didn't smell the flowers when I was 21 either!" Derek quips honestly.

My eyes squint in the glare of the sun as they readjust from the darkness of the forest. Great riding ensues as the flowing track snakes its way onto the western edge of the Goulund Downs.

Thin boardwalks and swing bridges lift riders over the most fragile wetland areas before hard-packed singletrack returns, guiding us into

### BIG DAY OUT

The hut is buffeted by wind and rain for what feels like hours before first light. When morning breaks the view from the hut window reveals a clear and peaceful scene. The front has blown itself north and left in its wake idyllic conditions.

The track levels out after yesterday's arduous climb, ensuring speeds are steady as we splash through the puddles left by the evening's downpour. We ride along Perry Saddle before the track drops onto the beginnings of the Goulund Downs.

The Downs are an amazing expanse of high country suspended between the Goulund Range, the Tubman Range and the Slate Range. An array of rivers, creeks and heath-covered environs stretch across them creating a patchwork of alpine hues. Rolling hills and low ridges stretch off in each

cruise about oblivious to our presence, pausing momentarily to call to each other.

Evening meal preparations are in full swing by the time we leave the wekas to their evening strutting. The chatter is light-hearted and entertaining. Fin and his dad have travelled from Auckland for some father-son bonding, and plan to do a return trip of the track's entire length. Fin is a tall, athletically-built lad in his early 20s - it comes as no surprise when we find out he is a national water polo representative. I make the cheeky assumption they would be the All Blacks in Speedos. I am unsure how seriously to take Fin's admission that they do in fact perform the haka. "The haka performed by a group of skinny white guys in Speedos on the pool deck is a sight to behold," Fin informs us. I ponder such a sight.

## Beyond Saxon Hut the track climbs onto bush-lined ridges, offering glimpses of snow-capped peaks

Saxon Hut. We recall the morning's riding over lunch on the shaded veranda. Clouds swirl around distant peaks; intermittent bursts of sunshine keep us guessing if one or two layers are most comfortable.

Beyond Saxon Hut the track undulates and climbs onto bush-lined ridges, offering glimpses of snow-capped peaks. The track leads westward, skirting the southern edge of Mt Teddy. Surrounded by forests of beech, southern rata and kamahi we each fall into our own riding rhythm on the flowing track.

"West Coast!" shouts Derek excitedly as he steps onto the back deck of Mackay Hut. I grab a handful of scroggin and wander toward Derek, the distinctive blue haze of the ocean-bordered horizon to the west greeting me.

A sign describes the life of the man from whom the hut draws its name. A Maori interpreter, a land holder, and reputedly the first European to walk the Heaphy, James Mackay led a fascinating life before dying in poverty in Auckland. I gaze toward the coastline, reflecting on the hardship dealt by this remote country, and the lives of the men who endured it. Hard men indeed.

### ROLLING WEST

The track begins its descent toward the west coast, dropping steadily into forests of tall trees harbouring undergrowth of bright, green ferns and carpets of iridescent moss. In the mid-afternoon light the forest is dark and ominous. Slippery tree roots mat the floor and rock-strewn water crossings snake across the dimly lit track. Fast sections are quickly broken by hairpin turns and small root-clad drop-offs.

An easily identifiable coal seam cuts across the track and up the bank. "Mate, you're lucky a mining exec hasn't spotted this," I joke. "Not yet," Derek says, "only a matter of time before you Aussies try to claim it, eh."

The long descent continues into the evening. What light remains quickly fades in the eerie undergrowth. I expect a hobbit to appear around any turn. We keep our eyes plastered on the trail ahead in the hope we may spot a powelliphanta. These giant nocturnal snails are a throwback to a bygone era, a creature you would expect to view in a museum cabinet.

Suddenly, Derek halts and leaps off his steed. "Kiwi," he whispers as I approach. "Quiet." Derek squats on the trail, Mandy pulls up behind. "Powelliphanta or kiwi?" she instantly queries.



The Heaphy's many suspension bridges make for a balancing act for riders.



Into the ancient forests – diversity of terrain is the Heaphy Track all over.

The Heaphy is home to the elusive great spotted kiwi and Derek is certain he has spotted one on the straight section of trail ahead. Despite DOC's surveys showing populations are healthy, spotting a kiwi in the wild is a rare treat. We delicately step toward Derek in silence. No sign. We sit and wait in hopeful anticipation. Without any signs, we reluctantly remount and ride into the darkness.

Lewis Hut sits on the banks of the Lewis River just above the junction at which it flows into the Heaphy River. A collective decision is made to spend the night at Lewis rather than push onto the Heaphy Hut and the risk of two river crossings in the dark. I wash my mud-caked legs in the freezing waters of the river. After an amazing day in the saddle, the frigid waters are invigorating. Mandy stokes the coal-fired potbelly quickly knocking

the chill out of the hut air. I drift into an arresting slumber, abuzz on the vibe of a big day out.

### RAW OCEAN POWER

We awake to a cold, overcast morning. I inhale a bowl of porridge and two cups of coffee. The first of the day's challenges sits within 15m of the hut door – a crossing of the freezing Lewis River.

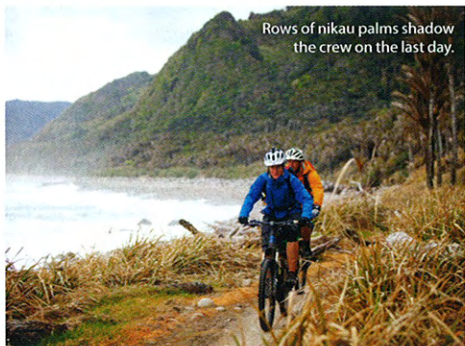
We clamber over large river stones and make our way out of the frigid waters. The amazing nikau, the world's most southern-growing palm, spring up all around, a stark contrast to the mountain environs of the preceding days. The mostly hard-packed, twisting singletrack meanders along the riverbank, allowing us to flick through gears in pursuit of each other, dodging thick nikau trunks.

ADVENTURE | HEAPHY TRACK, NZ



The final day's ride hugs the rugged, raw West Coast, rising over headlands and skirting wave-lashed beaches.

Rows of nikau palms shadow the crew on the last day.



A sunny deck surrounded by wilderness – heaven, some might say!



This coastline is pounded by long pulse swells generated thousands of kilometres south by storms in the southern oceans. It's wild and raw.

The Heaphy River comes into view; we begin to walk our bikes along its banks in search of a ford. The long swing bridge makes for a difficult crossing with a fully laden bike. So with the river at a comfortable level we wade into the cold waters.

I step onto dry land and am forced to lay down under the weight of my increasingly heavy stomach. Not keen to hint at my discomfort until this point, I alert Derek and Mandy to my queasiness. Only one thing for it, I decide; brekky needs to be expelled. So I begin the delightful process of emptying my stomach. Within moments I am feeling better. I guzzle some water and we roll out.

Fine singletrack guides us onto Heaphy Hut's expansive green lawn. The hut is stunningly positioned, looking toward the point at which the Heaphy River empties its mountain waters into the Tasman Sea. This is officially the point the Heaphy Track meets the west coast. A treacherous bar sits at the entrance to the river. As keen surfers, Derek and I can't help but marvel at the left and right peaks reeling across the sandbar.

### LIKE A FINE WINE

The remaining 12km of track roll along the coastal strip perched between foaming surf and palm-fringed forest. Huge piles of driftwood are strewn across beaches, massive boulders sit in precarious positions. This coastline is pounded by long pulse swells generated thousands of kilometres south by storms in the southern oceans. It's wild and raw.

We push our bikes across the beach around Crayfish Point, the place where three walkers were swept to their death in 1980. Even on this relatively calm day, waves push further up the beach than we expect.

The final flowing section of track drops us from the Kohaihai Bluff onto the banks of the Kohaihai River, where John and Kier greet us.

John loads the bikes onto the van for the six-hour drive to Nelson. Derek and Mandy yarn excitedly, recounting track tales, while Kier and I toss his white frisbee in the midday sunshine. John tells us how the young guys who passed us in the forest had missed their flight and spent the night in the nearby township of Karamea. "Would have made more sense to have stayed a night in a hut," I offer. "Mate, I could have spent another night out there for sure," says Derek.

"To explore this track at a leisurely pace is akin to sampling a fine wine," Derek says, in an uncharacteristically sophisticated manner. "This has been a ride I will never forget."

"I'm with you, Derek... being slowed down has been a highlight for me," Mandy says. "I was already in love with this track for how nice the riding was, but this trip gave me time to see how stunning and different every little corner is!"

Kier calls, "You want an apple, Dal?" Kier and I lay in grass munching a crisp apple watching the clouds streak across the blue skies. "Did you like the ride?" Kier asks. "I loved it," I say. "My mum loves it, and my dad," Kier tells me.

I stare skyward musing over my Heaphy experience. I can only hope the three-year trial is deemed a success not only for the region's unique environments and riders alike, but also for my young apple-sharing friend. So he too can savour this unique experience for himself someday.

## THE ESSENTIALS

**Getting there:** Air New Zealand has an extensive network of flights from Sydney, Melbourne and Brisbane to Auckland, Wellington and Christchurch from where connections depart to Nelson. [www.airnewzealand.com.au](http://www.airnewzealand.com.au)

**Getting on the track:** The track can be ridden in either direction, however most popular is departing Collingwood and finishing in Karamea. For guided options or equipment hire have a yarn to John and Mandy at Escape Adventures in Takaka. [www.escapeadventures.co.nz](http://www.escapeadventures.co.nz)

**Getting back:** Escape Adventures will organise pick-ups or, for self-guided riders after the ultimate finish, fly back over the range to various points with Golden Bay Flights. [www.goldenbayflights.co.nz](http://www.goldenbayflights.co.nz)

**Where to stay:** All of the DOC huts on the Heaphy are excellent and fully cater for bikes. [www.doc.govt.nz](http://www.doc.govt.nz). Nelson is the region's airport gateway and has heaps of accommodation options such as the Wheelhouse Inn. [www.wheelhouse.co.nz](http://www.wheelhouse.co.nz). Check out the friendly township of Takaka and treat yourself at the Rotanui Lodge Pohara - great food and biker friendly. [www.ratanuilodge.com](http://www.ratanuilodge.com)

**More info:** Department of Conservation [www.doc.govt.nz](http://www.doc.govt.nz) Nelson Tasman Tourism [www.nelsonnz.com](http://www.nelsonnz.com)

## WHAT WE PACKED

**Freeload:** Platform bike rack system [www.freeload.co.nz](http://www.freeload.co.nz)

**Avanti:** Torrent bike [www.avantibikes.com/](http://www.avantibikes.com/)

**The North Face:** Angstrom 30L Pack, Apex Bionic Jacket and riding apparel [www.thenorthface.com.au](http://www.thenorthface.com.au)

**Sea To Summit:** Dry bags [www.seatosummit.com.au](http://www.seatosummit.com.au)

**Teva:** Itunda waterproof sandals [www.teva.com/au](http://www.teva.com/au)

**Icebreaker:** Base layers [www.icebreaker.com](http://www.icebreaker.com)

**Jetboil:** Stove [www.seatosummit.com.au](http://www.seatosummit.com.au)

**Backcountry Cuisine:** [www.backcountrycuisine.co.nz](http://www.backcountrycuisine.co.nz)

**Maps:** Topo50 Land Information NZ 1:50 000 Goulund Downs BP23, Heaphy Beach BP22



To check out our Heaphy adventure go to [www.australiangeographic.com.au/outdoor/heaphy-track-new-zealand.htm](http://www.australiangeographic.com.au/outdoor/heaphy-track-new-zealand.htm)

## 6. APPENDIX 2 – TRACK PHYSICAL IMPACT – PHOTO MONITORING REPORTS

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## Visitor Monitoring Toolkit

# Track Monitoring

## Report

### Heaphy Track - Golden Bay side – Mountain bike monitoring report 2013

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✓ **Measuring changes to track conditions**



Department of Conservation  
*Te Papa Atawhai*



# Track Monitoring Report

This report presents data from the establishment of track and photo monitoring on two sites on the Heaphy Track in December 2009. Raw data is held in AMIS – 57540.

## 1. Monitoring site establishment data

Site	1. 50m west of Brown Hut
VAMS Monitoring Site Reference Tag Number	211647
Grid Reference or GPS Location	E 1553327 N 5477644
Specific Location including direction of travel	50m west of Brown Hut, monitor west from peg.
Date established	08.12.09
Established by	Gareth Roberts
Monitoring carried out at this site	Track and photo monitoring

Site	2. 30m east of Goulard Hut
VAMS Monitoring Site Reference Tag Number	211651
Grid Reference or GPS Location	E 1545550 N 5473175
Specific Location including direction of travel	30m east of Goulard Hut, monitor east from peg.
Date established	08.12.09
Established by	Gareth Roberts
Monitoring carried out at this site	Track and Photo monitoring

## 2. Description of monitoring

1. As part of the Heaphy Track 3 year mountain bike trial Impact Monitoring and complementary Photopoint Monitoring Sites were established at two locations along the track on the Golden Bay end of the Heaphy.
2. Baseline data was collected in December 2009.
3. Impact Monitoring was replicated by way of photo point monitoring at each of the three seasons of mountain bike use.
4. The monitoring was carried out by DOC Rangers.
5. The weather on most occasions was fine.

## 2.1 Reason for monitoring

This track, along with two others (Flora/Barron Flat & the Kill Devil track) in the Kahurangi National Park have been opened up to mountain biking for a three year trial. The monitoring is to assess any impact that opening up the track to mountain bikes may have had.

This monitoring seeks to answer the following general questions (select applicable):

- ☒ Are their obvious impacts on the track due primarily to mountain bike use?
- ☐ What is the relationship between visitor numbers before and during the mountain bike trial period?
- ☐ Is the rate of change influenced by other site characteristics?

## 3. Summary of results

### 3.1 Site characteristics

Results from track monitoring for the three seasons are presented in the tables below.

Site characteristics were measured and recorded when the site was initially established, and then confirmed at subsequent monitoring interval.

Where there has been **no change** from the previous years result **n/c** (no change) is indicated.

Site characteristics – 50m west of Brown Hut	2010	2011	2012	2013
1. Visitors (no.)	4951	5875	5566	Not complete
2. Dominant type of use (category)	1	n/c	n/c	n/c
3. Track slope (category)	1	n/c	n/c	n/c
4. Track base (category)	6	n/c	n/c	n/c
5. Soil type (category)	5	n/c	n/c	n/c
6. Dominant vegetation (category)	1	n/c	n/c	n/c
7. Dominant vegetation height (category)	2	n/c	n/c	n/c
8. Confinement factor (category)	2	n/c	n/c	n/c
9. Erosion potential (category)	0	n/c	n/c	n/c
10. Boggiess (category)	2	n/c	n/c	n/c

Site characteristics – 30m east of Gouland Hut	2010	2011	2012	2013
1. Visitors (no.)	4951	5875	5566	Not complete
2. Dominant type of use (category)	1	n/c	n/c	n/c
3. Track slope (category)	1	n/c	n/c	n/c

4. Track base (category)	5	n/c	n/c	n/c
5. Soil type (category)	5	n/c	n/c	n/c
6. Dominant vegetation (category)	8	n/c	n/c	n/c
7. Dominant vegetation height (category)	2	n/c	n/c	n/c
8. Confinement factor (category)	2	n/c	n/c	n/c
9. Erosion potential (category)	1	n/c	n/c	n/c
10. Bogginess (category)	2	n/c	n/c	n/c

### 3.2 Track transect data baseline

#### Site 1: Brown hut

Transect No.	Maximum width of visibly impacted ground (cm)	Area visibly impacted ground (squares)	Area of bare ground / free of vegetation (squares)	Number of braids	Depth of mud (category 0 – 6)	Depth of track (cm)	Bare ground (area m <sup>2</sup> )	Visibly impacted ground (m <sup>2</sup> )
1	140	260	260	0	0	0	0.65	0.65
2	140	260	260	0	0	0	0.65	0.65
3	140	260	260	0	0	0	0.65	0.65
4	140	260	260	0	0	0	0.65	0.65
5	140	260	260	0	0	0	0.65	0.65
6	140	260	260	0	0	0	0.65	0.65
	<b>Average</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Max</b>	<b>Average</b>	<b>Total</b>	<b>Total</b>
	140	1560	1560	0	0	0	3.90	3.90

#### Site 2: Goulard hut

Transect No.	Maximum width of visibly impacted ground (cm)	Area visibly impacted ground (squares)	Area of bare ground / free of vegetation (squares)	Number of braids	Depth of mud (category 0 – 6)	Depth of track (cm)	Bare ground (area m <sup>2</sup> )	Visibly impacted ground (m <sup>2</sup> )
1	140	260	248	0	0	0	0.62	0.65
2	140	260	260	0	0	0	0.65	0.65
3	140	260	260	0	0	0	0.65	0.65
4	140	260	260	0	0	0	0.65	0.65
5	140	260	260	0	0	0	0.65	0.65
6	140	260	257	0	0	0	0.64	0.65
	<b>Average</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Max</b>	<b>Average</b>	<b>Total</b>	<b>Total</b>
	140	1560	1545	0	0	0	3.86	3.90

### 3.4 Comparing substantial changes in the monitoring period

The following impact and use indicators changed between the two periods:

- **Essentially no change. The area of bare ground total decreased fractionally e.g. improved. This could have been a simple measurement influence.**

### 3.5 Photopoint monitoring

#### Site 1: Brown hut



**2010 Monitoring Photos**



**2011 Monitoring Photos**



**2012 Monitoring Photos**

## Site 2: Gouland hut



**2010 Monitoring Photos**



**2011 Monitoring Photos**



## 2012 Monitoring Photos

### 4. Discussion

#### 4.1 Site characteristics.

Overall, site characteristics have changed little. In fact the only changes are where track maintenance has added material to the surface. The geology of the area means that the sites are relatively hard and resistant to visitor and staff use. ATV's are used in the sections covered by this monitoring and even with this there have been essentially no discernable effects.

The major effects witnessed on the track in these sections during the period have all been weather related.

#### 4.2 Impact and use indicators

At the fixed monitoring sites there are no visual signs of mountain bike impact.

Overall; most of the monitored sectors of the Heaphy track have held up well to mountain bike use which considering the geology and the fact the track is maintained out to ATV width should be no surprise.

The main damaging effects witnessed throughout the period were storm events.

## **5. Conclusions and recommendations for management**

- 1 The monitoring undertaken at the northern end of the track has shown no effects due to being opened up for mountain bike use.
- 2 Overall the track width and rocky geology on the northern section has meant very little in terms of effects noted.

### **Conclusion:**

There are no effects detected through this track monitoring, therefore there is no reason in terms of track damage that mountain biking should not continue.

Visitor Monitoring Toolkit

# Track Monitoring

Report

## Heaphy Track – West Coast side - Mountain bike monitoring report 2013

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✓ Measuring changes to track conditions



Department of Conservation  
*Te Papa Atawhai*

# Track Monitoring Report

This report presents data results from the establishment of track and photo monitoring on three sites on the Heaphy Track in February 2010.

## 1. Monitoring site establishment data

Site	1. Historic Culvert Mt Teddy		
VAMS Monitoring Site Reference Tag Number	031278		
Grid Reference or GPS Location	NZMS 260 L26 E2449694 N6036575 (NZMT 50 BP22 E1539726 N5474862)		
Specific Location including direction of travel	Culvert located on section of track between Mackay Hut and West Coast boundary, below Mt Teddy		
Date established	3 February 2010		
Established by	Ian Wightwick/Eric de Boer		
Monitoring carried out at this site	Track and photo monitoring		

Site	2. Heaphy Track James Mackay to Lewis Hut		
VAMS Monitoring Site Reference Tag Number	031275		
Grid Reference or GPS Location	NZMS 260 L26 E2442124 N6033642 (NZMT 50 BP22 E1532169 N5471949)		
Specific Location including direction of travel	Section of track located approximately 2 km down from James Mackay Hut elevation 570m		
Date established	4 February 2010		
Established by	Ian Wightwick/Eric de Boer		
Monitoring carried out at this site	Track and Photo monitoring		

Site	3. Heaphy Track Fields Cave to Heaphy Hut		
VAMS Monitoring Site Reference Tag Number	031274		
Grid Reference or GPS Location	NZMS 260 L26 E2435678 N6024993 (NZMT 50 BP22 E1525736 N5463287)		
Specific Location including direction of travel	Section of track located approximately 1 km up the track from Heaphy Hut.		
Date established	4 February 2010		
Established by	Ian Wightwick/Eric de Boer		
Monitoring carried out at this site	Track and Photo Monitoring		

## 2. Description of monitoring

1. As part of the Heaphy Track, 3 year mountain bike trial, Impact Monitoring Site and complementary Photopoint Monitoring Site were initially established at three sites along the track.
2. Baseline data was collected in February 2010
3. Impact Monitoring was replicated by way of photo point monitoring at each of the three seasons of mountain bike use.
4. The monitoring was carried out by DOC Rangers and Hut Wardens.
5. The weather on most occasions was fine.
6. In both the 2010 and 2011 significant storm events hit the Heaphy.

### 2.1 Reason for monitoring

This track, along with two others (Flora/Barron Flat & the Kill Devil track) in the Kahurangi National Park have been opened up to mountain biking for a three year trial. The monitoring is to assess any impact that opening up the track to mountain bikes may have had.

This monitoring seeks to answer the following general questions (select applicable):

- ☒ Are their obvious impacts on the track due primarily to mountain bike use?
- ☐ What is the relationship between visitor numbers before and during the mountain bike trial period?
- ☐ Is the rate of change influenced by other site characteristics?

## 3. Summary of results

### 3.1 Site characteristics

Results from track monitoring for the three seasons are presented in the tables below.

Site characteristics were measured and recorded when the site was initially established, and then confirmed at subsequent monitoring interval.

Where there has been **no change** from the previous years result **n/c** (no change) is indicated.

Site characteristics – Mt Teddy Historic Culvert	2010	2011	2012	2013
1. Visitors (no.)	4951	5875	5566	Not complete
2. Dominant type of use (category)	1	n/c	n/c	n/c
3. Track slope (category)	1	n/c	n/c	n/c
4. Track base (category)	6	n/c	n/c	n/c

5. Soil type (category)	5	n/c	n/c	n/c
6. Dominant vegetation (category)	1	n/c	n/c	n/c
7. Dominant vegetation height (category)	2	n/c	n/c	n/c
8. Confinement factor (category)	3	n/c	n/c	n/c
9. Erosion potential (category)	1	n/c	n/c	n/c
10. Bogginess (category)	2	n/c	n/c	n/c

Site characteristics – James Mackay Hut to Lewis Hut	2010	2011	2012	2013
1. Visitors (no.)	4951	5875	5566	Not complete
2. Dominant type of use (category)	1	n/c	n/c	n/c
3. Track slope (category)	1	n/c	n/c	n/c
4. Track base (category)	8	n/c	n/c	n/c
5. Soil type (category)	6	n/c	n/c	n/c
6. Dominant vegetation (category)	1	n/c	n/c	n/c
7. Dominant vegetation height (category)	3	n/c	n/c	n/c
8. Confinement factor (category)	3	n/c	n/c	n/c
9. Erosion potential (category)	1	n/c	n/c	n/c
10. Bogginess (category)	2	n/c	n/c	n/c

Site characteristics – Fields Cave track	2010	2011	2012	2013
1. Visitors (no.)	4951	5875	5566	Not complete
2. Dominant type of use (category)	1	n/c	n/c	n/c
3. Track slope (category)	1	n/c	n/c	n/c
4. Track base (category)	7	n/c	n/c	n/c
5. Soil type (category)	2	n/c	n/c	n/c
6. Dominant vegetation (category)	1	n/c	n/c	n/c
7. Dominant vegetation height (category)	3	n/c	n/c	n/c
8. Confinement factor (category)	3	n/c	n/c	n/c
9. Erosion potential (category)	2	n/c	n/c	n/c
10. Bogginess (category)	3	n/c	n/c	n/c

### 3.2 Track transect data

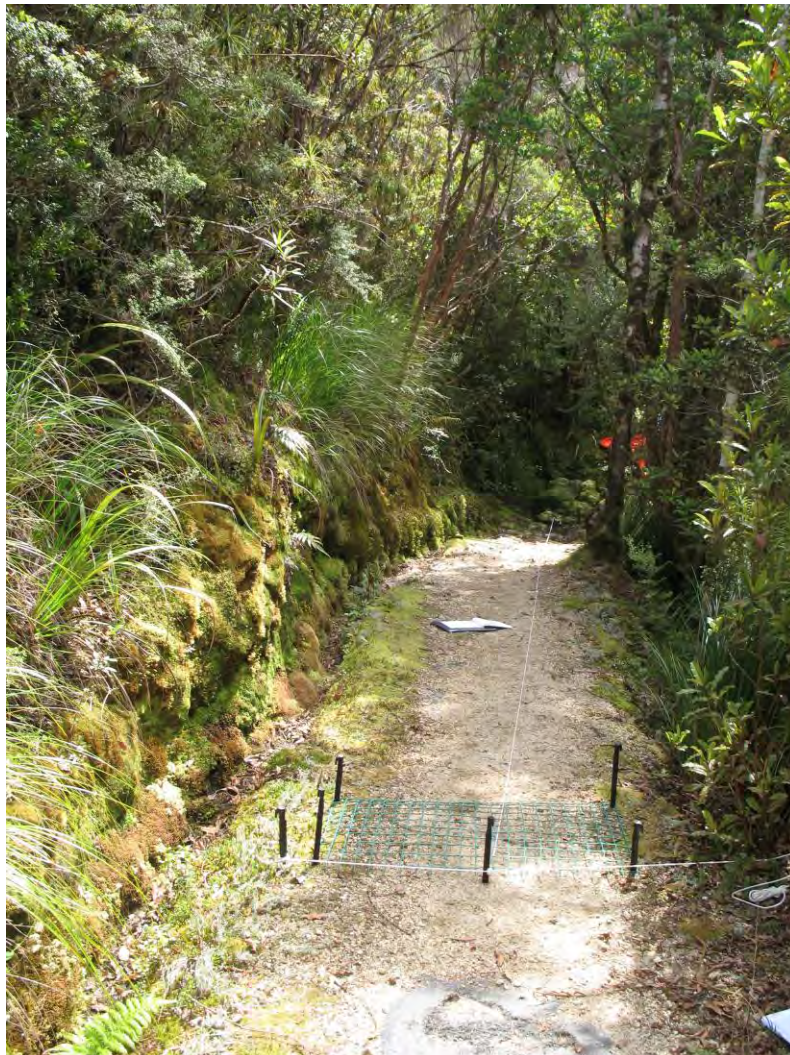
Transect No.	Maximum width of visibly impacted ground (cm)	Area visibly impacted ground (squares)	Area of bare ground / free of vegetation (squares)	Number of braids	Depth of mud (category 0 – 6)	Depth of track (cm)	Bare ground (area m <sup>2</sup> )	Visibly impacted ground (m <sup>2</sup> )
1	81	0	186	0	0	2.4		
2	81	4	183	0	0	1.2		
3	81	0	145	0	0	0.5		
4	81	0	200	0	0	0.4		
5	81	0	196	0	0	12		
	<b>Average</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Max</b>	<b>Average</b>	<b>Total</b>	<b>Total</b>
	81	4	910	0	0	3.3		

### 3.4 Comparing substantial changes in the monitoring period

The following impact and use indicators changed between the two periods:

- None

### 3.5 Photopoint monitoring



Mt Teddy – transect establishment – February 2010



Mt Teddy Historic Culvert – site context photo – February 2010





2012 Monitor – Mt Teddy Historic Culvert



2013 Monitor – Mt Teddy Historic Culvert



Mackay to Lewis Hut – transect establishment – February 2010



2012 Monitor – Mackay to Lewis Hut



2013 Monitor – Mackay to Lewis Hut



2012 Monitor – Fields Cave sector



2013 Monitor – Fields Cave sector

## 4. Discussion

### 4.1 Site characteristics.

Overall, site characteristics have changed little. Weather events and storm damage has been more detrimental to the track at sections than visitor use has been. This is especially noticeable at the Mt Teddy site, where rain and water erosion action has washed the poor granular gravel surface pavement layer away from the geotechnical cloth.

Some areas of the track (outside the monitoring sites) did show rutting and impact from mountain bike wheels, but in many instances this is due to poor water management and control, leading to boggy sections on the track. Trampers footfall equally bogs this type of track up, and these areas can be combated by adequate and timely maintenance and water table control.



Approach to Heaphy Hut – Pitt Creek



Heaphy Valley



Poor draining track depression – Murray Flats, Heaphy Valley

## 4.2 Impact and use indicators

At the fixed monitoring sites there are little or no visual signs of mountain bike impact. The sites were chosen as it was likely to show signs of both direction and speed (braking) change by cyclists. One of the sites was also chosen to indicate impact on the relatively little heritage fabric left along the trail.

Overall; many of the hardened areas have held up well to mountain bike use. Some of the softer areas on the West Coast have shown rutting and increased boggyness, but this equally happens when tramper numbers walk through these track sections.

The main damaging effect on the Heaphy Track surface is storm events and water erosion related. Once this controlled, which needs to happen regardless of whether bikers or walkers are using the trail, then the track material and formation can be save guarded and such a well armoured track will withstand use much better.

## 5. Conclusions and recommendations for management

- 1 The track appears not to have changed in light of being opened up for mountain bike use.
- 2 Certain sections along the Heaphy Valley which contain softer sections of trail which are also subject to regular flooding or inundation or being submerged by high tide or flood water, have shown evidence of bike trail marks. However this equally happens with trampers footfall.
- 3 The limited impacts, have not unduly degraded the track. Certain sections of track continues to meet the Departments service standards for this facility or site, while others are in clear need of upgrading and had been even prior to the trial commencing.
- 4 This report concludes that the 3 year trial has been a success.

### Conclusion:

There is no obvious reason, that when the trial period is over that mountain biking should not continue.

# Track Monitoring

## Report

### Killdevil Track – Mountain bike monitoring report 2013

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✓ **Measuring changes to track conditions**



Department of Conservation  
*Te Papa Atawhai*



# Track Monitoring Report

This report presents data from the establishment of track and photo monitoring on two sites on the Killdevil Track in December 2009. Raw data is held in AMIS – 57539.

## 1. Monitoring site establishment data

Site	1. 50m west of Skeet Creek		
VAMS Monitoring Site Reference Tag Number	211641		
Grid Reference or GPS Location	E 1576815 N 5456279		
Specific Location including direction of travel	50m west of Skeet Creek, downhill, monitor on bearing 126° from peg.		
Date established	24.11.09		
Established by	Gareth Roberts		
Monitoring carried out at this site	Track and photo monitoring		

Site	2. Waingaro/Stanley Track		
VAMS Monitoring Site Reference Tag Number	211640		
Grid Reference or GPS Location	E 1580743 N 5460134		
Specific Location including direction of travel	Downhill, monitor on bearing 266° from peg		
Date established	24.11.09		
Established by	Gareth Roberts		
Monitoring carried out at this site	Track and Photo monitoring		

## 2. Description of monitoring

1. As part of the Kahurangi National park partial review a 3 year mountain bike trial was implemented over three sites in Kahurangi. Impact Monitoring and complementary Photopoint Monitoring was established at two sites along the Killdevil track in Golden Bay.
2. Baseline data was collected in November 2009.
3. Impact Monitoring was replicated by way of photo point monitoring at each of the three seasons of mountain bike use. Unfortunately the photos from year 2 have been lost.
4. The monitoring was carried out by DOC Rangers.
5. The weather on most occasions was fine.

## 2.1 Reason for monitoring

This track, along with two others (Flora/Barron Flat & the Heaphy track) in the Kahurangi National Park have been opened up to mountain biking for a three year trial. The monitoring is to assess any impact that opening up the track to mountain bikes may have had.

This monitoring seeks to answer the following general questions (select applicable):

- ☒ Are there obvious impacts on the track due primarily to mountain bike use?
- ☐ What is the relationship between visitor numbers before and during the mountain bike trial period?
- ☐ Is the rate of change influenced by other site characteristics?

## 3. Summary of results

### 3.1 Site characteristics

Results from track monitoring for the three seasons are presented in the tables below.

Site characteristics were measured and recorded when the site was initially established, and then confirmed at subsequent monitoring interval.

Where there has been **no change** from the previous years result **n/c** (no change) is indicated.

Site characteristics – 50m west of Skeet Creek	2010	2011	2012	2013
1. Visitors (no.)	250(est)	250(est)	250(est)	Not complete
2. Dominant type of use (category)	1	n/c	n/c	n/c
3. Track slope (category)	1	n/c	n/c	n/c
4. Track base (category)	8	n/c	n/c	n/c
5. Soil type (category)	3	n/c	n/c	n/c
6. Dominant vegetation (category)	4	n/c	n/c	n/c
7. Dominant vegetation height (category)	4	n/c	n/c	n/c
8. Confinement factor (category)	2	n/c	n/c	n/c
9. Erosion potential (category)	1	n/c	n/c	n/c
10. Bogginess (category)	2	n/c	n/c	n/c

Site characteristics – Downhill	2010	2011	2012	2013
1. Visitors (no.)	250(est)	250(est)	250(est)	Not complete
2. Dominant type of use (category)	1	n/c	n/c	n/c

3. Track slope (category)	1	n/c	n/c	n/c
4. Track base (category)	5	n/c	n/c	n/c
5. Soil type (category)	5	n/c	n/c	n/c
6. Dominant vegetation (category)	7	n/c	n/c	n/c
7. Dominant vegetation height (category)	2	n/c	n/c	n/c
8. Confinement factor (category)	2	n/c	n/c	n/c
9. Erosion potential (category)	1	n/c	n/c	n/c
10. Boggiess (category)	2	n/c	n/c	n/c

### 3.2 Track transect data baseline

#### Site 1: 50m west of Skeet Creek

Transect No.	Maximum width of visibly impacted ground (cm)	Area visibly impacted ground (squares)	Area of bare ground / free of vegetation (squares)	Number of braids	Depth of mud (category 0 – 6)	Depth of track (cm)	Bare ground (area m <sup>2</sup> )	Visibly impacted ground (m <sup>2</sup> )
1	66	120	120	0	0	0	0.30	0.30
2	90	170	170	0	0	0	0.43	0.43
3	60	110	110	0	0	0	0.28	0.28
4	55	100	100	0	0	0	0.25	0.25
5	80	150	150	0	0	0	0.38	0.38
6	54	100	100	0	0	0	0.25	0.25
	<b>Average</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Max</b>	<b>Average</b>	<b>Total</b>	<b>Total</b>
	67.5	750	750	0	0	0	1.89	1.89

#### Site 2: Downhill

Transect No.	Maximum width of visibly impacted ground (cm)	Area visibly impacted ground (squares)	Area of bare ground / free of vegetation (squares)	Number of braids	Depth of mud (category 0 – 6)	Depth of track (cm)	Bare ground (area m <sup>2</sup> )	Visibly impacted ground (m <sup>2</sup> )
1	44	80	72	0	0	3	0.18	0.2
2	38	70	70	0	0	2	0.18	0.18
3	43	80	80	0	0	0	0.2	0.2
4	43	80	80	0	0	0	0.2	0.2
5	32	60	60	0	0	0	0.15	0.15
6	44	80	80	0	0	0	0.18	0.2
	<b>Average</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Max</b>	<b>Average</b>	<b>Total</b>	<b>Total</b>
	40.7	450	442	0	0	0.83	1.09	1.13

### 3.4 Comparing substantial changes in the monitoring period

The following impact and use indicators changed between the two periods:

- Essentially no change. The area of bare ground total increased fractionally (by 8 squares overall). There was no change in visibly impacted ground.

### 3.5 Photopoint monitoring

#### Site 1: Skeet Creek



**2010 Monitoring Photos**



## 2012 Monitoring Photos

### Site 2: Downhill



## 2010 Monitoring Photos



## 2012 Monitoring Photos

### 4. Discussion

#### 4.1 Site characteristics.

Overall, site characteristics have changed little. The geology of the area means that the sites are relatively hard and resistant to visitor use.

#### 4.2 Impact and use indicators

At the fixed monitoring sites there are no visual signs of mountain bike impact.

## 5. Conclusions and recommendations for management

- 1 The monitoring undertaken on the track has shown no effects due to being opened up for mountain bike use.
- 2 Overall the rocky geology has meant very little in terms of effects noted.
- 3 There are low numbers of mountain bike users on this track and considering the considerable challenge of biking on this track this is likely to remain the case. The track is rated as expert and is a physical and technical challenge.

### **Conclusion:**

There are no effects detected through this track monitoring, therefore there is no reason in terms of track damage that mountain biking should not continue.

Visitor Monitoring Toolkit

# Track Monitoring

Report

## Upper Takaka Track – Mountain bike monitoring report 2013 – Motueka side

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✓ Measuring changes to track conditions



Department of Conservation  
*Te Papa Atawhai*

# Track Monitoring Report

This report presents data results from two monitoring sites on the Upper Takaka Track, as monitored from the Motueka DOC management side.

## 1. Monitoring site establishment data

Site	Upper Takaka Track
VAMS Monitoring Site Reference Tag Number	24248 & 24249
Grid Reference or GPS Location	E1573288 N5443070
Specific Location including direction of travel	Approach slope and corner immediately before Aitkins Swing Bridge (True Right)
Date established	24 November 2009
Established by	Tom Young & Diana Parr
Monitoring carried out at this site	Annual monitoring 11 <sup>th</sup> Jan 2010, 21 <sup>st</sup> Dec 2011 & 21 <sup>st</sup> Dec 2012

## 2. Description of monitoring

1. As part of the Flora Car Park – Barron Flat – Upper Takaka, 3 year mountain bike trial, Impact Monitoring Site and complementary Photopoint Monitoring Site were initially established close to the Aitkins Swing Bridge on the Upper Takaka Track by Motueka DOC.
2. Baseline data was collected on 11<sup>th</sup> January 2011
3. Impact Monitoring was replicated at this site, after one year (21<sup>st</sup> Dec 2011) and two years (21<sup>st</sup> Dec 2012).
4. The monitoring was carried out by Tom Young & Diana Parr.
5. The weather on all occasions was fine.
6. Between late June 2012 and early December 2012 and again from mid June 2013 to Sept 2013, the Graham Valley Road has been closed due to on-going slips.

### 2.1 Reason for monitoring

This track, along with two others (Heaphy Track & Killdevil) in the Kahurangi National Park have been open up to mountain biking for a three year trial. The monitoring is to assess any impact that opening up the track to mountain bikes may have.

This monitoring seeks to answer the following general questions (select applicable):

- ☒ Are there obvious impacts on the track due primarily to mountain bike use?
- ☐ What is the relationship between visitor numbers before and during the mountain bike trial period?
- ☐ Is the rate of change influenced by other site characteristics?

### 3. Summary of results

#### 3.1 Site characteristics

Results from track monitoring for the 2011 & 2012 years are presented in the tables below.

Site characteristics were measured and recorded when the site was initially established, and then confirmed at subsequent monitoring interval. With the exception of Characteristic 1 'Number of Visitors' Site Characteristics were recorded by indicating an appropriate numbered category from the Track and Campsite Monitoring Standard Operating Procedure. These categories are attached to this report.

Where there has been **no change** from the previous years result **n/c** (no change) is indicated.

Site characteristics	2010	2011	2012	2013
1. Visitors (no.) *	1401	1333	1287	1375
2. Dominant type of use (category)	1	n/c	n/c	
3. Track slope (category)	2	n/c	n/c	
4. Track base (category)	6	n/c	n/c	2013
5. Soil type (category)	5	n/c	n/c	data
6. Dominant vegetation (category)	4	n/c	n/c	not
7. Dominant vegetation height (category)	3	n/c	n/c	collected
8. Confinement factor (category)	3	n/c	n/c	to
9. Erosion potential (category)	1	n/c	n/c	date
10. Bogginess (category)	2	n/c	n/c	

\* Visitor counter data is incomplete for years prior to 2010, so only direct comparison can be made with the 2010 data. The primary purpose of this counter is to record visitors transiting along the **Salisbury Track**. The closure of the Graham Valley Road (the main access point to Flora Car Park) between late June and early December 2012 has skewed the annual figures downwards. Therefore the comparison is based on figures from Jan – March (inclusive) for 2010 – 2013.

#### 3.2 Track transect data (Year 1 – Dec 2011)

Transect No.	Maximum width of visibly impacted ground (cm)	Area visibly impacted ground (squares)	Area of bare ground / free of vegetation (squares)	Number of braids	Depth of mud (category 0 – 6)	Depth of track (cm)	Bare ground (area m <sup>2</sup> )	Visibly impacted ground (m <sup>2</sup> )
1	75	130	130	0	1	13		
2	80	150	150	0	0	8		
3	70	15	94	0	0	2		
4	45	10	5	0	0	1		
5	50	100	0	0	0	1		
	<b>Average</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Max</b>	<b>Average</b>	<b>Total</b>	<b>Total</b>
	64	405	379	0	1	5		

### 3.3 Track transect data (Year 2 – Dec 2012)

Transect No.	Maximum width of visibly impacted ground (cm)	Area visibly impacted ground (squares)	Area of bare ground / free of vegetation (squares)	Number of braids	Depth of mud (category 0 – 6)	Depth of track (cm)	Bare ground (area m <sup>2</sup> )	Visibly impacted ground (m <sup>2</sup> )
1	107	200	155	0	0	13		
2	108	207	206	0	0	9		
3	180	360	234	0	0	5		
4	97	114	24	0	0	2		
5	94	76	16	0	0	2		
	<b>Average</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Max</b>	<b>Average</b>	<b>Total</b>	<b>Total</b>
	117.2	957	635	0	0	31		

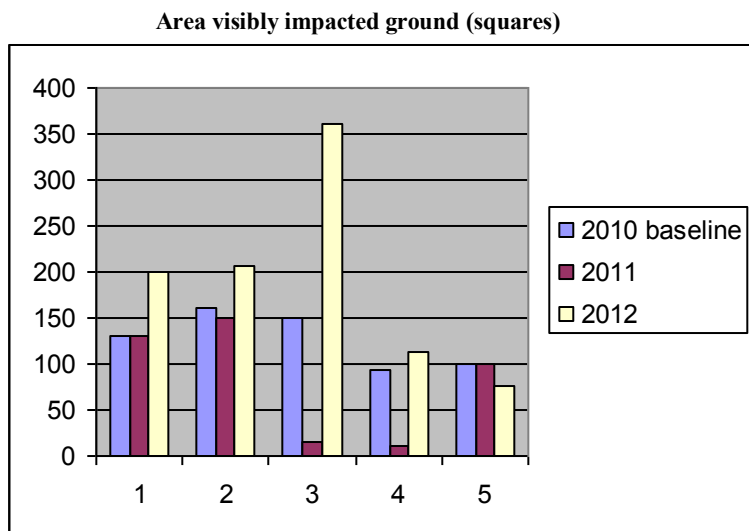
### 3.4 Comparing substantial changes in the monitoring period

The following impact and use indicators changed between the two periods:

- Maximum width of visibly impacted ground (cm)
- Area visibly impacted ground (squares)

These two indicators are plotted on the graphs below:





### 3.5 Photopoint monitoring



*Working along transect*



*Measuring Track surface*



*Measuring Area of impacted ground using 50mm square netting*



*Measure track width & depth using 50mm square netting*

## 4. Discussion

### 4.1 Site characteristics.

Overall, site characteristics have changed little. Some vegetation adjacent to the track has grown and not been cut back. This has ‘pushed’ visitors to the other side of the track, potentially increasing the track width.

### 4.2 Impact and use indicators

There is little or no visual signs of mountain bike impact. The site was chosen as it was likely to show signs of both direction and speed (braking) change by cyclists.

It is likely that the survey data graphed above has some percentage of error, and that perceived increases in both width and areas of impacted ground are actually relatively low.

### 4.3 Photopoint monitoring

The above photos show the methodology behind the monitoring rather than any true impacts, of which there is very little.

## 5. Conclusions and recommendations for management

- 1 The track appears not to have changed in light of being opened up for mountain bike use. The first 7km, from Flora Car Park to Gridiron is on a 4WD access road, where DOC vehicles regularly drive. This section alone, classified as 'easy' (Flora to Gridiron) has seen a fair number of day users and family groups.
- 2 The section beyond Gridiron is significantly more challenging and requires some logistics for those undertaking the ride, and therefore appeals to a more skilled user group. Some softer sections of the track between the Aitkins Swingbridge and Lower Junction show signs of mountain bike tyre tracks. The relatively few tyre tracks indicate a small number of users using mountain bikes on this section on a regular basis.
- 3 There has been little change in numbers crossing the counter on the Salisbury Track. It is not possible to differentiate between trampers and cyclists, or on direction of travel. The majority of users crossing the counter will likely be accessing the Tableland (Salisbury Lodge and Balloon Hut) and the Leslie Karamea Track. There was a noticeable 'spike' in visitor numbers when the track first opened for mountain bike use in December 2011 and January 2012. This may be a result in the 'novelty value' of a new trail to ride.
- 4 The limited impacts, if any have not degraded the track. The track continues to meet the Department's service standards for this facility or site.
- 5 There is evidence that other tracks (Mt Arthur Track and Salisbury Track) have been used by mountain bikes since the inception of the trial. Although there is clear signage at each and every track junction prohibiting mountain bike use. Mountain bike impacts on these tracks are minimal.
- 6 This report concludes that the 3 year trial has been a success. Only a limited number of cyclists are transiting the full length of the track. This is partly due to the logistical organisation and skill level required. Many more, less skilled individuals and groups are using the Flora to Gridiron section as an easy 7km mountain bike ride or as a quick way to access the Tableland (leaving bikes at Gridiron or Upper Junction).

### Conclusion:

There is no obvious reason, that when the trial period is over that mountain biking should not continue.

# Track Monitoring

## Report

### Upper Takaka Track – Mountain bike monitoring report 2013 – Golden Bay side

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✓ Measuring changes to track conditions



Department of Conservation  
*Te Papa Atawhai*



# Track Monitoring Report

This report presents data from the establishment of track and photo monitoring on two sites, by the Golden Bay DOC office, on the Upper Takaka Track in January 2010. Raw data is held in AMIS – 57541.

## 1. Monitoring site establishment data

Site	1. Barrons Flat Car Park to Bushedge		
VAMS Monitoring Site Reference Tag Number	85308		
Grid Reference or GPS Location	E 1579519 N 5448748		
Specific Location including direction of travel	Monitor (downhill) from peg on bearing of 102°		
Date established	06.01.10		
Established by	Gareth Roberts		
Monitoring carried out at this site	Track and later photo monitoring		

Site	2. Upper Takaka Track		
VAMS Monitoring Site Reference Tag Number	211650		
Grid Reference or GPS Location	E 1577825 N 5447637		
Specific Location including direction of travel	Monitor on bearing of 140° from peg.		
Date established	06.01.10		
Established by	Gareth Roberts		
Monitoring carried out at this site	Track and later photo monitoring		

## 2. Description of monitoring

1. As part of the Kahurangi National park partial review a 3 year mountain bike trial was implemented over three sites in Kahurangi. Impact Monitoring and complementary Photopoint Monitoring was established at two sites along the Upper Takaka track in Golden Bay by DOC staff from Takaka.
2. Baseline data was collected in January 2010.
3. Impact Monitoring by way of photo point monitoring was initiated in 2012. There are only the single set of photos at this stage.
4. The monitoring was carried out by DOC Rangers.
5. The weather was fine.

## 2.1 Reason for monitoring

This track, along with two others (Killdevil & the Heaphy track) in the Kahurangi National Park have been opened up to mountain biking for a three year trial. The monitoring is to assess any impacts that opening up the track to mountain bikes may have had.

This monitoring seeks to answer the following general questions (select applicable):

- ☒ Are there obvious impacts on the track due primarily to mountain bike use?
- ☐ What is the relationship between visitor numbers before and during the mountain bike trial period?
- ☐ Is the rate of change influenced by other site characteristics?

## 3. Summary of results

### 3.1 Site characteristics

Results from track monitoring for the three seasons are presented in the tables below.

Site characteristics were measured and recorded when the site was initially established, and then confirmed at subsequent monitoring interval.

Where there has been **no change** from the previous years result **n/c** (no change) is indicated.

<b>Site characteristics</b> – Barrons Flat Car Park to Bushedge	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
1. Visitors (no.)	400(est)	400(est)	400(est)	Not yet complete
2. Dominant type of use (category)	1	n/c	n/c	n/c
3. Track slope (category)	1	n/c	n/c	n/c
4. Track base (category)	5	n/c	n/c	n/c
5. Soil type (category)	5	n/c	n/c	n/c
6. Dominant vegetation (category)	7	n/c	n/c	n/c
7. Dominant vegetation height (category)	2	n/c	n/c	n/c
8. Confinement factor (category)	2	n/c	n/c	n/c
9. Erosion potential (category)	2	n/c	n/c	n/c
10. Boggiess (category)	2	n/c	n/c	n/c

<b>Site characteristics</b> – Upper Takaka Track	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
1. Visitors (no.)	400(est)	400(est)	400(est)	Not yet complete
2. Dominant type of use (category)	1	n/c	n/c	n/c
3. Track slope (category)	1	n/c	n/c	n/c
4. Track base (category)	8	n/c	n/c	n/c

5. Soil type (category)	3	n/c	n/c	n/c
6. Dominant vegetation (category)	4	n/c	n/c	n/c
7. Dominant vegetation height (category)	3	n/c	n/c	n/c
8. Confinement factor (category)	2	n/c	n/c	n/c
9. Erosion potential (category)	2	n/c	n/c	n/c
10. Bogginess (category)	2	n/c	n/c	n/c

### 3.2 Track transect data baseline

#### Site 1: Barrons Flat Car Park to Bushedge

Transect No.	Maximum width of visibly impacted ground (cm)	Area visibly impacted ground (squares)	Area of bare ground / free of vegetation (squares)	Number of braids	Depth of mud (category 0 – 6)	Depth of track (cm)	Bare ground (area m <sup>2</sup> )	Visibly impacted ground (m <sup>2</sup> )
1	42	63	63	0	0	14	0.16	0.16
2	47	90	90	0	0	10	0.23	0.23
3	38	60	60	0	0	5	0.15	0.15
4	38	60	60	0	0	5	0.15	0.15
5	35	60	60	0	0	5	0.15	0.15
6	40	70	70	0	0	10	0.15	0.15
	<b>Average</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Max</b>	<b>Average</b>	<b>Total</b>	<b>Total</b>
	40	403	403	0	0	8.2	0.99	0.99

#### Site 2: Upper Takaka Track

Transect No.	Maximum width of visibly impacted ground (cm)	Area visibly impacted ground (squares)	Area of bare ground / free of vegetation (squares)	Number of braids	Depth of mud (category 0 – 6)	Depth of track (cm)	Bare ground (area m <sup>2</sup> )	Visibly impacted ground (m <sup>2</sup> )
1	40	70	70	0	0	0	0.18	0.18
2	40	70	70	0	0	0	0.18	0.18
3	40	70	64	0	0	0	0.16	0.18
4	40	70	59	0	0	0	0.15	0.18
5	40	70	70	0	0	0	0.18	0.18
6	40	70	70	0	0	0	0.18	0.18
	<b>Average</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Max</b>	<b>Average</b>	<b>Total</b>	<b>Total</b>
	40	420	403	0	0	0	1.03	1.08

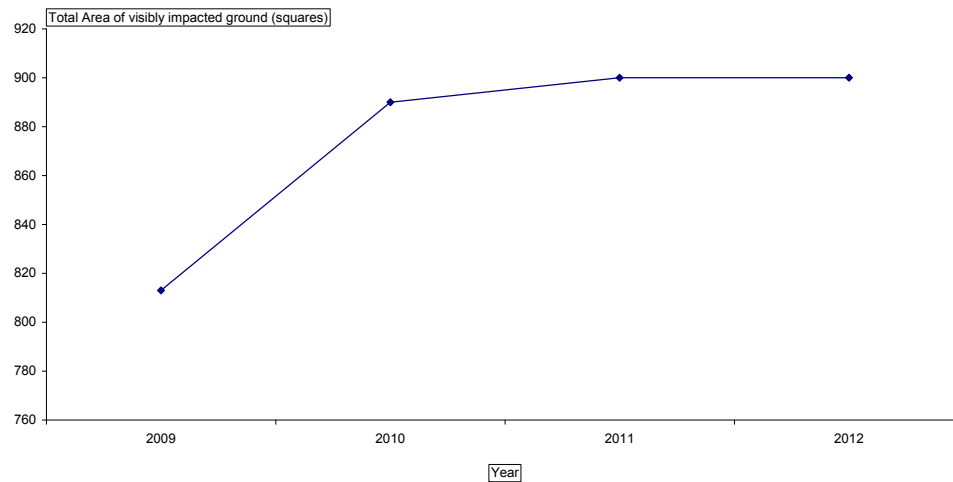
### 3.4 Comparing substantial changes in the monitoring period

The following impact and use indicators changed between the two periods:

- There has been some change over time in visibly impacted ground and bare ground.
- There has been a slight increase in the average depth of track (see graphs below).

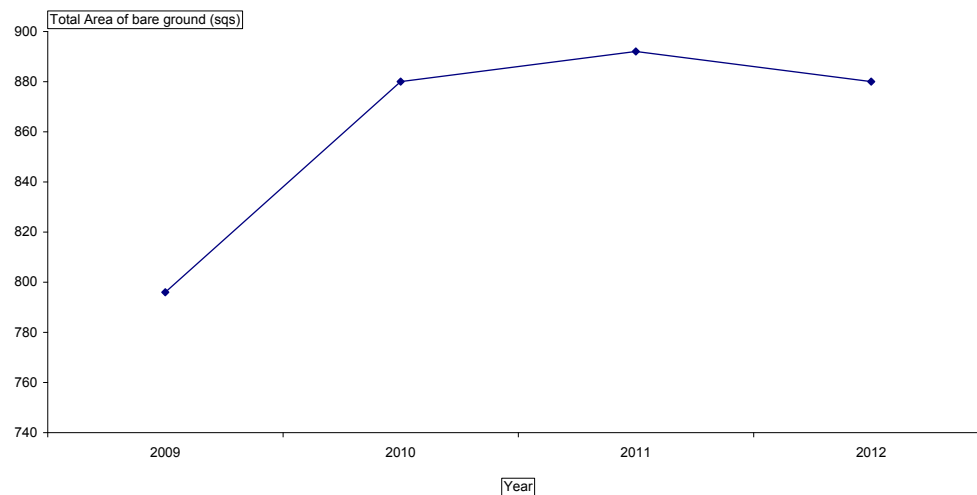
Site(All)

Change over time in the total measured area of visibly impacted ground (squares) at Monitoring Sites 85308, 211650 - Upper Takaka Track

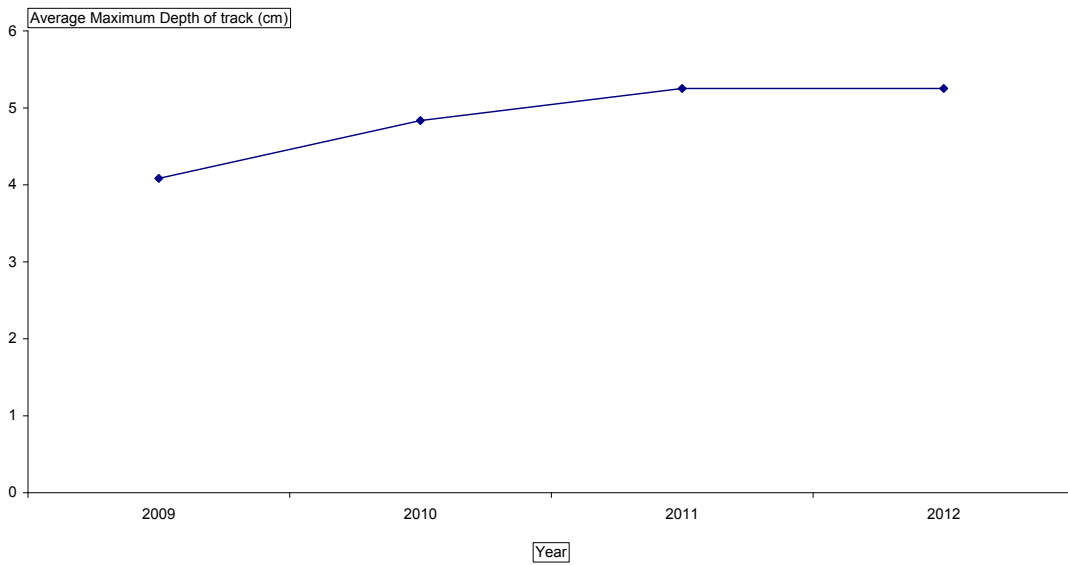


Site(All)

Change over time to the total measured area of bare ground (squares) at Monitoring Sites 85308, 211650 - Upper Takaka Track

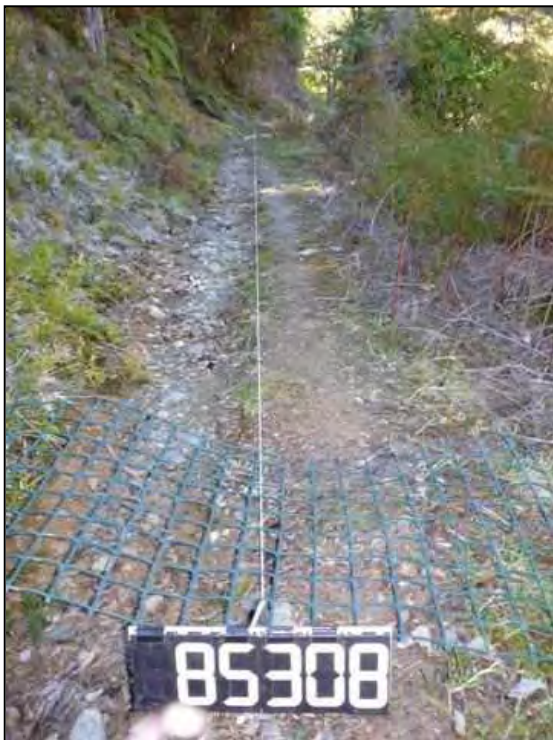


Change over time in the maximum depth of track at Monitoring Sites 85308, 211650 - Upper Takaka Track



### 3.5 Photopoint monitoring

#### Site 1: Barrons Flat Car Park to Bushedge



#### 2012 Monitoring Photos

## Site 2: Upper Takaka Track



### 2012 Monitoring Photos

## 4. Discussion

### 4.1 Site characteristics.

Overall, site characteristics have changed little.

### 4.2 Impact and use indicators

There are little or no visual signs of mountain bike impact. There is however a reasonable level of water damage visible due to existing lack of water control. See photos. Considering there has only been a very slight increase in depth of the track even with this present suggests that the substrate is very hard and resistant to water runoff as there have been extreme weather events within the trial period.

It is likely that the survey data graphed above has some percentage of error, and that increases in both visible impacted ground and bare ground are actually relatively low statistically speaking. Add this to the lack of decent water control at one site in particular and it is likely these attributes would have changed whether there had been biking or no biking.

## 5. Conclusions and recommendations for management

- 1 The monitoring undertaken on the track has shown some minor effects through the trial period. It would be uncertain whether these occurred solely because of mountain bike use and are more likely due to lack of water control. (see photos)
- 2 Overall the rocky geology has meant very little in terms of overall effects noted considering the extreme events through the trial period.
- 3 There are low numbers of mountain bike users on this track and considering the considerable challenge of biking on this track this is likely to remain the case. The track is rated as advanced and is a physical and technical challenge.

### **Conclusion:**

There is no obvious reason, that when the trial period is over that mountain biking should not continue.

## 7. APPENDIX 3 – *POWELLIPHANTA* SNAIL MONITORING REPORT

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Heaphy Mountain Biking Trial- *Powelliphanta* Monitoring 05/06/2013  
and 05/09/2013

DM: 1262817



*Powelliphanta*- Heaphy Track 05/06/2013 between Perry Saddle Hut and James MacKay Hut

### **Abstract**

Monitoring the impact of mountain biking on *Powelliphanta* land snails during the Heaphy Track Mountain Bike Trial was undertaken on 5 June and 5 September 2013. This was considered a necessary component of monitoring due to the nationally endangered status of many of these species.

The monitoring showed that impact on the species, as a result of mountain bikers, is minimal. Approximately 14% of shells/snails were recorded as being crushed, but there is uncertainty as to whether being crushed resulted in death or whether the snail was either crushed and then died later or was crushed post death. Ten percent of the shells have been more clearly identified as being crushed resulting in death. The remaining 4% show signs of being crushed but have more uncertainty as to whether this resulted in death or was post death. There is also uncertainty as to whether crushed shells had been crushed by a mountain biker. It is just as likely that they could have been crushed by other track users.

Overall, predation of *Powelliphanta* has more significant impact on the species than dying from being crushed. Predation also occurs throughout the whole habitat area, whereas mountain biking is confined to a small part of the habitat. A total of approximately 63% of shells were found to have been preyed upon. Approximately 20% of shells were found intact and assumed to have died naturally and approximately 10% of shells showed clear signs of being crushed.

## **Introduction**

*Powelliphanta* land snails are in serious decline and many of the species found along the Heaphy Track are nationally endangered. As well as this, they are a charismatic protected species.

There are a number of *Powelliphanta* species which may be found along the Heaphy Track, these species are: *Powelliphanta annectens* (serious decline); *P. Superba prouseorum* (nationally endangered); *P. Superba Gunner River* (nationally endangered); *P. Superba harveyi* (nationally endangered); *P. Superba mouatae* (nationally endangered); *P. Superba richardsoni* (nationally endangered); *P. gilliesi* “Heaphy” (nationally endangered); and *P. gilliesi jamesoni* (nationally endangered) (Hitchmough, 2002, from Recovery Plan for *Powelliphanta* land snails, Kath Walker, 2003-2013).

*Powelliphanta* are preyed upon by Weka, and Thrush as well as introduced species such as possum, ship rats, pigs and less often by hedgehogs. The Conservation Board raised concerns regarding mountain biking impacting on *Powelliphanta* land snails (snails) on the Heaphy Track. An agreement was made to monitor the impacts of mountain biking on snails during the bike trials

The Heaphy snails monitoring assessment was undertaken to monitor the impacts of the Heaphy Mountain Biking trial on snails in terms of bike injury related death.

## **Method**

Two sections of the Heaphy Track were monitored by Ingrid Gruner and Lis Ridley on the 5<sup>th</sup> of June 2013 and again on the 5<sup>th</sup> of September 2013 by Rodney Phillips and Lis Ridley. The two sections were from Perry Saddle Hut to James McKay Hut and from James McKay Hut to Heaphy Hut.

Heaphy Hut to the Kohaihai road end was not monitored on either day, but instructions were given to the Heaphy rangers to keep an eye out during their work for crushed snails.

The two sections of the track were walked between 9:00am and 16:30 on 05/06/2013 and between 8:00 and 18:00 on 05/09/2013. The sections of the track were walked at a reasonable pace and the track and track margins scanned for snail shells along the way.

When a shell was found the waypoint was recorded, photos taken, notes made and the shell collected. The notes recorded the perceived likelihood of predation or bike/foot injury, the state of the shell when collected and the location on the track (see location

and snail collection maps Appendix 1). During both monitors many shells were found on the margins of the track or in small ditches alongside the track. It is assumed some shells are washed down to the track.

In the office the collected shells were cleaned and analysed to determine whether the shell was intact, crushed or what evidence of predation could be seen. These lab notes were compared to the field notes and photos and a final determination made.

### Results June 2013

In total there were 38 shells or snails found along the two sections of track. Two of these were live snails and 3 of the shells were not collected. One of the non-collected shells was freshly dead and was left with a large amount of flesh still in shell. The cause of death was unclear. One shell collected contained a significant amount of flesh which was extracted when cleaning the shells. This indicated that the shell was freshly dead. One recorded shell was a series of fragments which were not collected and were recorded only as one shell.

Between Perry Saddle Hut and James McKay Hut 16 shells and snails were found and between James McKay Hut and Heaphy Hut 22 shells and snails were found. On both sections of the track one live snail was found.

A total of three crushed snails were found. One between Perry Saddle Hut and 2 between James McKay Hut. The percentage of crushed snails found on this monitor equals 7.89%. Seventy three percent of shells were predated including 'predation unknown' shells and 13.15% of shells were not predated at all. Table 1, below, outlines the state of the shells recorded on the 05.06.2013.

**Table 1: Live snails found and potential cause of mortality for shells collected**

State of Snail/Shell	Live	Predation Possum	Predation Weka	Predation Rat	Predation Thrush	Predation Unknown	Not Predated	Not Predated Crushed	Not Predated Crushed-Post Death	Not Applicable	Total:
Total Numbers	2	3	9	4	2	10	5	3	0	0	38

### Results September 2013

There were 61 shells, live snails or evidence of snails found along the two section of track during the monitor on 05.09.2013. One live snail was recorded near the Heaphy Hut and one shell was not collected as it contained fresh flesh. Although assumed freshly dead, the shell was left in case the snail was still alive. This shell was also found just off the track, but has still been included in the total calculations. One fragment of a shell was found and was recorded as a shell, and a snail trail, seen between Perry Saddle Hut and James MacKay Hut, was found and recorded as 'not applicable'. Another shell was found off the track between Perry Saddle Hut and James MacKay Hut and was also included in the data.

This total was an unexpected increase in the counts compared to the last monitor in June. Between Perry Saddle Hut and James McKay Hut there was a decrease in the

number of snails found, but between James McKay Hut and Heaphy Hut there was a significant increase in the number of snails.

A total of seven crushed snails were found during this monitor one between Perry Saddle Hut and James MacKay Hut and six between James MacKay Hut and Heaphy Hut. There were four other crushed shells collected, but whether they were crushed causing death, or crushed post death/predation was inconclusive so have been recorded as 'not predated crushed- post death'. This resulted in 11.47% of snails/shells being recorded as crushed and 18% of shells as crushed (crushed death and crushed post death combined). Fifty four percent of recorded shells were predated and 24.5% of shells were not predated. Table 2, below, outlines the state of the shells recorded on 05.09.2013.

**Table 2: Live snails found and potential cause of mortality for shells collected**

State of Snail/Shell	Live	Predation Possum	Predation Weka	Predation Rat	Predation Thrush	Predation Unknown	Not Predated	Not Predated Crushed	Not Predated Crushed- Post Death	Not Applicable	Total:
Total Numbers	1	5	13	11	1	3	15	7	4	1	61

### **Total Results- June and September 2013**

From both inspections a total of 99 snails, shells or evidence of snails were recorded. This total includes the snail trail recording and the two shells found nearby, but off the track. The true total of snails or shells found along the sections of track walked is 96.

3.13% of recordings were live, 63.54% were predated (this includes 50% of known predation and 13.54% of unknown predation). Twenty percent of shells were not predated and were intact.

The total for crushed snails came to 14.58%, but this included shells which could have been crushed post predation death or natural death. The percentage of shells which were deemed to be crushed resulting in death came to 10.42%.

There was no definitive way of telling during the monitoring whether or not crushed shells had been crushed by foot or by bike.

Table 3, below, outlines the state of the shells recorded for both 05.06.2013 and 05.09.2013.

Appendix 2 contains the datasheet for all data, including field comments and lab notes. Appendix 3 contains some notes on additional interesting observations made during the monitoring. Appendix 4 includes photos of some of the crushed snails.

**Table 3: Live snails found and potential cause of mortality for shells collected**

	Live	Predation Possum	Predation Weka	Predation Rat	Predation Thrush	Predation Unknown	Not Predated	Not Predated Crushed	Not Predated Crushed-Post Death	N/A
Date of Monitor: 05/06/2013. Total Numbers	2	3	9	4	2	10	5	3	0	0
Date of Monitor: 05/09/2013. Total Numbers	1	5	13	11	1	3	15	7	4	1
Total for both	3	8	22	15	3	13	20	10	4	1

### Discussion

The results of the Heaphy Track Snail monitor show that ten shells, out of a total of 96 relevant shells or snails found during both of the monitoring visits, show signs of being crushed. This equates to 10.42% of those recorded. An additional four also show signs of being crushed, but were likely to have been crushed post death as opposed to being killed by being crushed.

It is also difficult to be completely confident in all cases where crushing was deemed to result in death. Some of the crushed snails could still have been crushed post death. An assessment was made at both the point of collection in the field, and back in the lab, to determine predated, intact and crushed shells. Shells that were predated as well as crushed were not included in the crushed category. The uncertainty for these shells was too high to confidently describe them as crushed. To be as confident as possible of the ten shells recorded as crushed, the field notes and lab notes were analysed along with photos.

For the ten shells deemed to be crushed and killed it is hard to determine whether they were crushed by mountain bikers, or by other track users. There was no obvious evidence on collection as to how each one was crushed. The crushed snails could have easily been crushed by trampers or workers and this is something that can not be resolved confidently with the monitoring undertaken.

Ten shells out of the 99 collected is not a high number of deaths as a result of being crushed. Even if you can be confident that the snails died as a result of being crushed, let alone crushed by mountain bikers, this is not a high number of deaths compared to the amount of preyed upon shells found during the monitor. The number of predated shells total 61 shells (so approx 63%) and indicate that there is a greater risk to the species being preyed upon than being crushed by mountain bikers (or even trampers and workers combined with mountain bikers). As well as this, predation occurs throughout the whole habitat area, whereas mountain biking is confined to a small part of the habitat. Overall, predation of *Powelliphanta* has more significant impact on the species than dying from being crushed.

## Reference List

Hitchmough, R. (Comp) 2002: New Zealand Threat Classification Systems lists 2002. *Threatened Species Occasional Publication 23*. Department of Conservation, Wellington.

Walker, K. 2003: Recovery Plan for *Powelliphanta* land snails 2003-2013. *Threatened Species Recovery Plan 49*. Department of Conservation, Wellington.



*Powelliphanta* (example of crushed snail). Heaphy Track 05.06.13 between Perry Saddle Hut and James MacKay Hut



*Powelliphanta* Sign- Heaphy Track 05/06/2013 Goulund Downs



*Powelliphanta*- Heaphy Track 05/06/2013 near James MacKay Hut