

The contribution of mountain biking to the Rotorua Lakes economy



Credit: Graeme Murray

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2. Executive Summary

This report assesses the contribution of mountain biking to the Rotorua Lakes economy. The report has been commissioned by RotoruaNZ. The objective is to deepen understandings into how much economic activity and employment is likely to be supported by visitors and locals who mountain bike.

Key questions addressed by this report include:

1. How many people participate in mountain biking as a recreational pursuit in Rotorua?
2. How much spending is brought into the district by mountain biking?
3. How much employment does this spending support?
4. What could a future growth scenario for mountain biking look like?
5. Where does biking sit against Rotorua's total visitor sector and economy?

Biking context in Rotorua Lakes

Rotorua Lakes is globally renowned as a mountain biking destination. In 2019, the International Mountain Biking Association (IMBA) renewed Rotorua's four-year status as being one of the world's best mountain biking destinations with their most prestigious gold-level Ride Centre™ status.

A key element of Rotorua's bike scene is a network of around 200 kilometres of mountain bike trails in Whakarewarewa Forest, consisting of trails to suit everyone, from beginners through to extreme downhill competitors, and for any age and fitness level. There are also many more options in and near Rotorua, such as Skyline MTB Park, Rainbow Mountain, Moerangi Track, Western Okataina Walkway, the Timber Trail and Whirinaki Forest Trails.

Adding to these trails, Rotorua is home to the annual Crankworx festival which lures the globe's best riders to compete for world titles in downhill and trick events on Mt Ngongotahā.

Key findings

- About 5,573 locals mountain biked at least weekly for recreation in Rotorua Lakes in 2021.
- A further 148,597 visitors to Rotorua Lakes are estimated to have mountain biked in 2021.
- The average mountain bike visitor stays 4.1 nights, compared to 2.6 nights across all visitors.
- Total spend by visitors who mountain bike while staying in Rotorua was \$139.8 million in 2021, with \$103.4 million of this being from bike visitors whose main purpose of visiting was to bike.
- By comparison, Rotorua's total visitor economy attracted about \$560 million of spending in 2021, down from a pre-Covid peak of \$827 million in 2019.
- About 1,153 jobs in 2021 could have been supported by mountain bike visitors' spending. Of these jobs, 853 were supported by people whose primary purpose of visiting was to bike.
- By comparison, there were about 35,123 jobs across Rotorua's total economy in 2021.
- Under a scenario of Rotorua's visitor economy recovering to 95% of its pre-Covid level by 2026:
 - Spending by visitors who mountain bike could climb to \$213.4 million. Of this total \$157.2 million would be from visitors whose main purpose of visiting was to bike.
 - The jobs which could be supported by spending by visitors who bike would rise from 1,153 in 2021 to 1,758 in 2026. Of the 1,758 jobs in 2026, about 1,295 would be supported by spending by visitors whose primary purpose of visiting was to bike.

3. Current participation in mountain biking

This section gives estimates of mountain bike participation in Rotorua Lakes by visitors and locals.

Mountain bike participation by local residents

Sport New Zealand's data shows that 7.2% of Rotorua Lakes' residents mountain bike at least once per week for recreation¹. Given Rotorua's population of 77,400 (as at June 2021), this participation implies:

- There are 5,573 local residents who mountain bike recreationally in Rotorua Lakes.

By comparison, an average of 4.7% of people across New Zealand go mountain biking at least weekly.

Mountain bike participation by visitors to Rotorua Lakes

Mountain biking is a key activity that attracts visitors to Rotorua Lakes. We know that:

- 33% of New Zealand travellers agree Rotorua is a top mountain biking destination²
- 54% of riders surveyed in Whakarewarewa Forest are visitors³
- Biking was the primary purpose of visiting Rotorua for 73% of bike visitors who stay overnight⁴.

There were 2.4 million visitors to Rotorua Lakes in 2021, of which 1.0 million stayed overnight and 1.4 million were day trippers⁵. Of these visitors, it is estimated that some 148,597 visitors mountain biked, with 116,366 of these bikers being overnight visitors and 32,231 of these bikers being day trippers⁶.

Summary of bike participation

The following table summarises estimates of visitors and residents who mountain bike in Rotorua Lakes.

Table 1 – The number of mountain bikers in Rotorua Lakes, including visitors and locals

Estimates of the total number of people who mountain bike in Rotorua		
<i>Author estimates of mountain bikers in Rotorua District during the June 2021 year</i>		
Mountain biker origin		Number of bikers
Local mountain bikers from Rotorua District		5,573
Visiting mountain bikers	Overnight visitors	116,366
	Day trippers	32,231
Total number of mountain bikers		154,170

As context to these estimates, calculations from forest counter data suggests that about 97,248 individual mountain bikers used Whakarewarewa Forest in the June 2021 year, with 3,641 being local bikers and the remaining 93,607 being visitors⁷. Whakarewarewa Forest is a key part of Rotorua's biking landscape, but there are many other public trails to enjoy elsewhere in Rotorua and the Skyline mountain bike park.

¹ Source: Active NZ Survey Data in the Sport NZ Insights Tool, downloaded on 27 July 2022.

² Source: Angus & Associates, Market Perceptions Rotorua (Dec-21). Rotorua was equal first with Queenstown.

³ Source: Rotorua Lakes Council 2020 survey of Whakarewarewa Forest mountain bikers.

⁴ Source: Council's 2020 survey. Note for day trippers, biking was the main purpose of a visit for 97% of them.

⁵ The total visitor estimate for the June 2021 year has been formed using a combination of mobile phone data from Data Ventures, as well as surveys of commercial accommodation and visitors staying in private homes.

⁶ It is assumed 11% of Rotorua visitors mountain bike, in line with pre-Covid data showing 11% of tourists in Rotorua were of demographics who like to participate in biking during holidays (International Visitor Survey calculations in NZ Visitor Activity Forecast Tool, 2019). Recent data elsewhere shows similar participation rates since borders closed, with a 2021 Destination Queenstown-commissioned survey showing 12% of visitors bike.

⁷ Estimated by taking total bike movements in forest counters (June 2021 year) and splitting them into individual bikers with usage patterns in the Council's 2020 mountain biker survey. Bike movements may count some people twice in the same ride, but this is balanced by some forest entry points not having counters.

4. Economic impacts from the mountain bike economy

This section gives estimates of spending generated by Rotorua’s mountain bike economy. The analysis focusses on spending by bike visitors because their spend is fresh money into the local economy which would not have existed in the absence of the bikers’ visit. Locals’ expenditure on mountain biking is separately estimated, but not factored into core economic impacts as it is likely that Rotorua residents would simply spend their budget on other things in Rotorua had they not spent the money on their bikes.

Guest nights by mountain bike visitors

The first step in determining the economic impacts of bike visitors is to assess how long they stay in the district. The average overnight visitor to Rotorua, who mountain bikes, stays for around 4.1 nights⁸, which is more than 50% longer than the typical visitor to Rotorua District (average stay is 2.6 nights⁹).

Figure 1 – Average stay length by mountain bike visitors compared to other visitors



Applying this average stay to the estimated 116,366 overnight visitors who mountain bike suggests that these bikers spent a cumulative 481,095 days in Rotorua in 2021. On top of these days in Rotorua by overnighing bikers, there were a further 32,321 days spent by mountain bikers who visit for the day.

Table 2 – Total days spent by mountain bikers in Rotorua Lakes

Total days spent in Rotorua Lakes by visitors who mountain bike		
<i>Author's estimate of the total number of days spent in the district by visitors who bike (June-21 year)</i>		
	Number of visitors who mountain bike	Days spent in Rotorua by these visitors
Mountain bikers who stay overnight	116,366	481,095
Mountain bikers who visit for the day	32,231	32,231
Total across all visitors who mountain bike	148,597	513,326

Economic impacts from spending by mountain bike visitors

The next step in estimating economic impacts is to estimate how much visitors spend during their stay. The average overnight mountain bike visitor in Rotorua spent \$281 per day in 2021, while day tripping bikers spent \$144 per day¹⁰. In comparison, the average visitor to Rotorua spent around \$135 per day¹¹.

⁸ Calculated from the Council’s 2020 survey of Whakarewarewa Forest mountain bikers. This is just above the 3.4 night average stay of bikers nationally in the 2021 Evaluation of Ngā Haerenga Great Rides of New Zealand.

⁹ Source: Calculations from commercial accommodation data contained in MBIE’s Accommodation Data Programme, June 2021 year, as well as the December 2021 Rotorua Private Household Visitor Monitor.

¹⁰ Median daily spends are inflation-adjusted calculations from the Council’s 2020 survey of Whakarewarewa Forest mountain bikers. The median spend by overnighing bikers in Rotorua is similar to the \$262 average daily biker spend nationally in the 2021 Evaluation of Ngā Haerenga Great Rides of New Zealand.

¹¹ The average daily spend across all visitors has been calculated using Infometrics estimate of visitor spending in Rotorua and adjusting that for total days spent in Rotorua by visitors sourced from Data Ventures.

Figure 2 – Average daily spend in Rotorua by mountain bike visitors compared to other visitors

Combining these daily spend estimates with the total days spent in Rotorua by bikers suggests that spending in Rotorua Lakes by visitors who mountain bike totalled \$139.8 million in the June 2021 year. Now it wouldn't be fair to causally attribute all this additional visitor spend to Rotorua's mountain bike economy because some mountain bike visitors would have visited anyway had biking not been an option. But even if we only factor in visitors whose main purpose of visiting was to bike¹², and assume that they wouldn't have come without biking, then that still added \$103.4 million to Rotorua's visitor economy¹³.

To put these estimates of spending by mountain bike visitors into perspective – total spend by all visitors to Rotorua was \$560 million in 2021, down from a pre-Covid peak of \$827 million in 2019¹⁴.

Table 3 – Spending brought into Rotorua Lakes by mountain bikers

Total expenditure by mountain bike visitors to Rotorua Lakes during 2021	
<i>Author calculations by applying average daily spend to total days in Rotorua by mountain bike visitors</i>	
	Total spend (\$ millions)
Mountain biking is primary purpose of visit	\$103.4m
Mountain biking is one of several reasons for coming	\$36.4m
Total spending across all visitors who mountain bike	\$139.8m

Implicitly included within these spending estimates is the role of major mountain biking events in attracting visitors to Rotorua. Economic impact analysis by APR Consultants in 2020 showed that the average Crankworx event attracts approximately \$4.3 million of visitor spending from bike enthusiasts who primarily come to Rotorua to watch the event.

Locals spending on mountain biking

Locals' expenditure on mountain biking has not been captured to date because economic impact analysis only focusses on new money brought into an area. On that basis, it is assumed that Rotorua residents would simply spend their budget on other things locally had they not spent the money on their bikes.

Nevertheless, it is still interesting to consider the relative size of locals' spending on mountain biking compared to how much visitor spending brings into the bike economy. Earlier calculations showed 5,573 Rotorua residents mountain bike regularly for recreation, while surveys imply the typical Rotorua mountain biker spent \$2,700 per year locally¹⁵ on all things bike-related. Combining these indicators suggests that total mountain bike spending by Rotorua Lakes residents in 2021 was \$15.0 million.

¹² Calculations from Rotorua Lakes Council 2020 survey of Whakarewarewa Forest mountain bikers showed that biking is the primary purpose of visiting for 73% of overnighting bikers and 97% of day tripping bikers.

¹³ As a point of reference for this estimate, the 2021 Evaluation of Ngā Haerenga Great Rides of New Zealand showed bike travellers spent \$950 million nationally when biking was the main purpose of their travel.

¹⁴ Infometrics Rotorua Regional [Economic Profile](#) (downloaded 1/8/22). Figures capture card and cash spend.

¹⁵ Source: Inflation adjusted calculations of median annual spends by Rotorua residents on biking drawn from a Rotorua Lakes Council 2020 survey of Whakarewarewa Forest mountain bikers.

5. Jobs supported by the mountain bike economy

This section outlines the employment in Rotorua Lakes supported by mountain bike visitors' spending. It is important to note that these calculations are based on the theoretical level which could be supported by the bike visitors' spending. Actual outcomes may differ depending on each business' hiring behaviour.

Employment estimates supported by mountain bike visitors

Spending by mountain bike visitors supports a considerable amount of employment. It is estimated that as many as 1,153 filled jobs in 2021 were supported by mountain bike visitors' spending during their time in Rotorua¹⁶. Of these jobs, 853 were supported by people whose primary purpose of visiting was to bike, while the other 300 jobs were supported by visitors who biked as one of several reasons for coming.

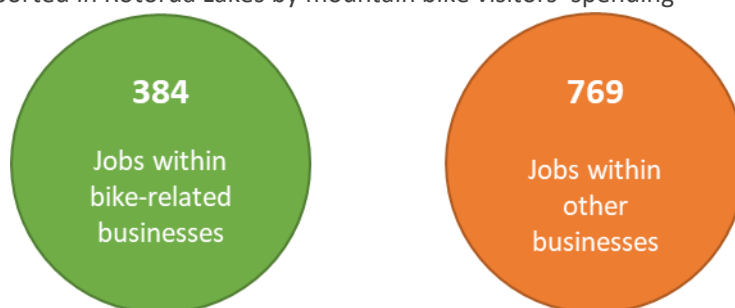
Table 4 – Estimates of employment in Rotorua Lakes supported by mountain bike visitors

Employment in Rotorua Lakes supported by mountain bike visitors' spending	
<i>Author's estimate of total filled jobs, June 2021 year</i>	
	Filled jobs
Jobs supported by visitors (primary purpose to mountain bike)	853
Jobs supported by visitors (biking is one of several reasons)	300
Total jobs supported by mountain bike visitors	1,153

To put this employment supported by mountain bike visitors' spending in perspective, data from Infometrics shows that there was a total of 35,123 jobs in total across Rotorua in the March 2021 year.

The jobs supported by biker visitors' spending will be in varying types of businesses. Bikers spend money not just on biking-related activities, repairs, and retail, but also on other services (eg. accommodation and hospitality). Calculations from a recent survey showed that 33% of bike visitors' spending was directly on bike specific expenses¹⁷. This share suggests about 384 of the 1,153 jobs would be supported in bike-related businesses, with the remaining 769 jobs being elsewhere as bikers spent on other things.

Figure 3 – Jobs supported in Rotorua Lakes by mountain bike visitors' spending



Jobs supported by locals' spending on mountain biking

Jobs supported by locals' spending on biking haven't been included alongside jobs supported by bike visitors. The reason is that it is assumed residents would spend their money on other things had they not biked, which could support similar job numbers in other roles. Nevertheless, the estimated \$15.0 million of bike-related expenditure by locals calculated earlier could theoretically support around 124 jobs.

¹⁶ A filled jobs estimate was formed by using a multiplier of tourism spending to jobs (calculated with data extracted on 05/08/22 from Infometrics Rotorua Lakes [Economic Profile](#)).

¹⁷ Calculated from median spending breakdowns in the Rotorua Lakes Council 2020 survey of Whakarewarewa Forest mountain bikers. Note that this spending share is similar to the 2021 Evaluation of Ngā Haerenga Great Rides of New Zealand, which showed that 37% of bike visitors' spending nationally was on things bike-related.

6. A scenario for future growth in mountain biking

The previous sections of this report identified the current contribution of mountain biking to the Rotorua Lakes economy. But the current context has been affected by Covid-19 border closures, so it makes sense to also consider what the future could look like once international visitors have returned.

Introducing a potential scenario for growth

Future analysis has been based on the following five-year scenario for growth in mountain biking to 2026:

- The overall Rotorua Lakes' visitor economy recovers to 95% of its pre-Covid level by June 2026¹⁸.
- Domestic travellers continue to mountain bike in Rotorua at least at the same level as 2021.
- International visitors' participation rate in biking is at least on par with pre-Covid signs (11%¹⁹).
- The proportion of locals who regularly mountain bike for recreation rises from 7.2% to 10%.
- Local population growth tracks a slightly more measured path relative to pre-Covid growth trends, rising by an average of 1.2%pa, compared to 1.5%pa growth before 2020²⁰.

The number of mountain bikers under the growth scenario

Under the future growth scenario, the total number of people participating in mountain biking in Rotorua Lakes could rise from 154,170 in 2021 to 219,956 in 2026.

Most of this growth is visitors who mountain bike (from 148,597 to 211,745), however, the number of locals who mountain bike regularly for recreation will also rise rapidly (from 5,573 to 8,210).

Table 5 – The number of mountain bikers in Rotorua Lakes, 2021 vs 2026 growth scenario

What happens to the number of people who mountain bike in Rotorua under the future scenario? <i>Number of mountain bikers in 2026 under future scenario relative to the 2021 baseline level</i>		
Mountain biker type	2021 level	2026 growth scenario
Local mountain bikers	5,573	8,210
Visiting mountain bikers	148,597	211,745
Total number of mountain bikers	154,170	219,956

Mountain bike spending and jobs under the growth scenario

If spending by mountain biking holidaymakers continues to follow a similar pattern to the present day, then the increase in bike visitors estimated above would push total spending by mountain bikers from \$139.8 million in 2021 to \$213.4 million by 2026.

Recall from earlier that it wouldn't be fair to causally attribute all this additional visitor spend to the mountain bike economy as not all mountain bikers only come to bike. But even if we only factored in the 73% of overnighting mountain bike visitors whose main purpose of visiting was to bike, then this would still imply a lift from \$103.4 million to \$157.2 million of spending.

¹⁸ This scenario is similar to the Tourism Export Council of New Zealand updated forecasts from 15/07/22 which anticipated a 96% return of visitors by May 2025.

¹⁹ The International Visitor Survey in 2019 showed that 8% of visitors to New Zealand biked, but more detailed analysis of the demographics and travel patterns of respondents suggests about 11% of the types of visitors who go to Rotorua will bike during their holiday (source: NZ Visitor Activity Forecast Tool, 2019).

²⁰ Rotorua Lakes Council's most recent population projections (March 2020) show average population growth of 1.2%pa between 2021 and 2026, compared to average growth of 1.5%pa over the five years to 2020.

Table 6 - Spending brought into Rotorua Lakes by mountain bikers, 2021 vs 2026 growth scenario

Total expenditure by mountain bike visitors to Rotorua in 2021 vs 2026 growth scenario		
<i>Author calculations of bike visitor spend in 2026 scenario relative to the 2021 baseline level, \$ million</i>		
Mountain biker type	2021 level	2026 growth scenario
Primary purpose is to mountain bike	\$103.4m	\$157.2m
Biking is one reason for coming	\$36.4m	\$56.2m
Total spend of all bike visitors	\$139.8m	\$213.4m

Under the growth scenario, the total number of jobs supported by spending across Rotorua Lakes by all mountain bike visitors could rise from 1,153 in 2021 to 1,758 in 2026.

Table 7 - Estimates of jobs in Rotorua supported by mountain bike visitors, 2021 vs 2026 growth scenario

Total jobs supported by mountain bike visitors to Rotorua Lakes, 2021 vs 2026 growth scenario		
<i>Author estimates of total filled jobs supported by bike visitors' spending, 2026 scenario vs 2021 base</i>		
Mountain biker type	2021 level	2026 growth scenario
Primary purpose is to mountain bike	853	1,295
Biking is one reason for coming	300	463
Total jobs (all bike visitors)	1,153	1,758

Given that around one third of mountain bike visitors' spending during their time in Rotorua is directly on bike-related expenses, this implies that the number of these jobs which are directly in mountain bike economy-related businesses will climb from 384 to 586. The remaining jobs supported by bike visitors spending in other parts of the Rotorua Lakes economy during their stay would climb from 769 to 1,172.

Spending and jobs supported by locals under future scenario

Spending and jobs supported by locals' mountain biking have not been captured alongside the activity supported by mountain bike visitors. The reason is that it is assumed residents would spend their money on other things had they not biked, which could support similar job numbers in other roles.

Nevertheless, if growth in mountain bike participation in Rotorua rises from 5,573 local riders in 2021 to 8,210 local riders in 2026 under the future scenario, then this would translate into:

- Locals' mountain bike-related expenditure rising from \$15.0 million to \$22.2 million
- Jobs supported by locals' bike-related expenditure would climb from 124 to 183 jobs.

7. Concluding comments

This report has highlighted the significant role that mountain biking in Rotorua plays in the economic and employment outcomes of the district, as well as for the identity of locals.

Even during the 2021 period of border closures, it was estimated that over \$100 million was spent in Rotorua by visitors whose primary reason for coming to Rotorua was to mountain bike. If we include those who mountain biked as one of many reasons for coming to Rotorua, then the total spending by bike visitors rises to almost \$140 million. At this level of spending, the mountain bike visitor economy is just under 20% of the size of the total visitor economy in Rotorua at its pre-covid peak.

Spending by locals on mountain biking during 2021 represented an estimated \$15.0 million of households' recreational expenditure.

There are opportunities for biking to grow further in future. Some of these opportunities will manifest naturally as international tourism returns in the wake of Covid-19. However, there are also opportunities for growth that could come from increased participation. Some increasing in participation will come from the rising prominence of bikes in general as a recreational pursuit, but it will also be enabled by ongoing investment in trails and associated bike-infrastructure.

Under a scenario of Rotorua's visitor economy recovering to 95% of its pre-Covid level by 2026, then the mountain bike visitor economy could become worth more than \$210 million per year by 2026. On top of this total, if participation in recreational mountain biking by locals can also rise modestly (from 7.2% to 10% of local residents) then there would also be another \$22.2 million of mountain bike-related expenditure by households in 2026.