



**Benje
Patterson**
People & Places

June 2025

Potential demand for dark sky tourism in Arthur's Pass and Castle Hill



Prepared for: Selwyn District Council

Prepared by: Benje Patterson

Benje Patterson | People & Places

www.benjepatterson.co.nz

June 2025

Version history

Report issued 27 June 2025

All work provided and services rendered are at the request of the client and intended for the client's purposes only. Benje Patterson Ltd and its employees do not accept any responsibility on any grounds whatsoever, including negligence, to any other person or organisation. While every effort is made by Benje Patterson Ltd to ensure that the information and analysis are accurate and reliable, Benje Patterson Ltd shall not be liable for any adverse consequences of the client's decisions made in reliance of any report provided by Benje Patterson Ltd. Furthermore, Benje Patterson Ltd make no representations or warranties of any kind as to whether any report provided by Benje Patterson Ltd will assist in the performance of the client's functions. Any reliance will be at your own risk.

1. Contents

2.	Introduction and overview	2
2.1.	Key findings.....	2
3.	Economic context of Arthur’s Pass and Castle Hill	3
4.	Potential demand from potential dark sky park.....	4
4.1.	Visitors currently passing Arthur’s Pass/Castle Hill	4
4.2.	Interest in dark sky tourism compared to target market	5
5.	Potential spending by dark sky visitors.....	6
5.1.	Indication of spending that target markets could support.....	6
5.2.	Employment estimates.....	6
6.	Concluding remarks	7

2. Introduction and overview

This report has been commissioned by Selwyn District Council to provide an initial high-level indication of the potential demand for dark sky tourism in the areas surrounding Arthur's Pass and Castle Hill. The Council is currently seeking accreditation for dark sky parks in these areas, so an understanding of potential demand for dark sky tourism and its associated economic value can help guide this process. For the purposes of this report, it is assumed that dark sky parks cover DOC land encompassing Kura Tāwhiti, Craigieburn Forest, Korowai/Torlesse Tussocklands, and Arthur's Pass National Park.

A dark sky park is a designated area, usually a protected natural area, that is specifically designated for the preservation of natural darkness and is free from light pollution. Dark sky parks can bring economic and social benefits. Economic benefits generally stem from increased tourism revenue from stargazing and astro-tourism, while social benefits are broader and can include opportunities for education and a greater sense of community and pride among residents for their efforts to protect the night sky.

At its heart, this report helps show:

- What is the potential scale of demand for dark sky tourism in Arthur's Pass and Castle Hill?
- How much visitor spending and employment could be supported by additional dark sky tourism?

The impacts in this report are based on potential dark sky tourism demand in Arthur's Pass and Castle Hill that could develop following dark sky accreditation. These benefits are based on potential demand only. To fully realise benefits there will need to be investment to protect and showcase the area's dark sky offering, as well as sufficient capacity available in supporting visitor infrastructure (e.g. accommodation).

2.1. Key findings

- Employment in Arthur's Pass/Castle Hill in 2024 sat at 150 jobs across 48 businesses.
- 57% of jobs (85 jobs) are in tourism, with 37% (55 jobs) in accommodation and food services, while a further 20% (30 jobs) are in recreation services (which includes outdoor visitor activities).
- As context for current visitor flows and demand in Arthur's Pass, it is estimated:
 - About 960,000 visitors (500,000 international and 460,000 domestic) in 2024 passed through Arthur's Pass driving between Canterbury and the West Coast.
 - The ski areas of Porters, Mt Cheeseman, Craigieburn, Broken River, and Temple Basin together had around 35,000 skier days in the 2024 ski season.
- About 46,100 visitors a year (24,000 international and 22,100 domestic) could be interested to stop for the night to view the dark sky from Arthur's Pass/Castle Hill. This estimate is based on a scenario where a similar proportion of visitors passing would have an interest in stopping for a dark sky experience as they do in Mackenzie.
- Another 14,400 Christchurch people a year might be interested in visiting to see the dark sky.
- If this potential demand for dark sky tourism in Arthur's Pass/Castle Hill were fully realised, then this could translate into as much as \$13.5 million of visitor spending and support up to 56 jobs.
- Achieving such a level of market demand is not a given, and would require investment to market and protect the area's dark sky offering. Reaching this threshold would be a challenge and would also require sufficient associated visitor amenities (eg. accommodation) being available.
- The potential demand illustrated above equates to an average of 166 overnight visitors a day, which would require 55 to 85 accommodation rooms/units to be available.
- Future analysis will be needed to further stocktake capacity and the potential costs of investments needed to fully unlock the potential benefits identified.

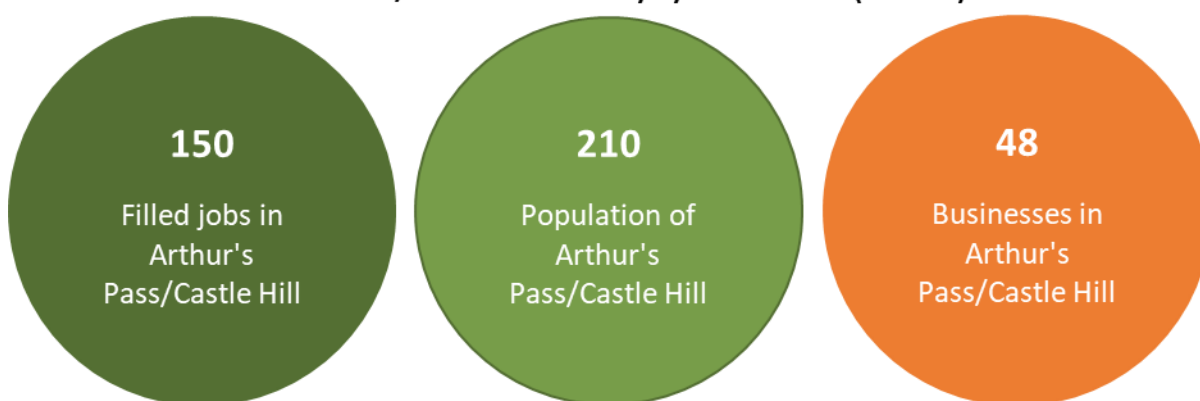
3. Economic context of Arthur’s Pass and Castle Hill

This section gives economic context to Arthur’s Pass and Castle Hill. The context can provide background to the potential scale of economic impacts and demands placed on the area by a dark sky park.

There were 210 residents of Arthur’s Pass/Castle Hill in 2024, with employment sitting at 150 jobs across 48 businesses¹.

Figure 1 – Arthur’s Pass/Castle Hill economy at a glance, source: Statistics NZ

Arthur’s Pass/Castle Hill economy by the numbers (to 2024)



Arthur’s Pass/Castle Hill accounts for about 0.6% of Selwyn’s jobs.

Table 1

Comparing Arthur's Pass/Castle Hill against the rest of Selwyn			
2024 Statistics New Zealand Subnational Population Estimates and Business Demography			
	Arthur's Pass/Castle Hill	Selwyn	AP/CH's share (%)
Filled jobs (excl. self-emp)	150	23,300	0.6%
Population	210	85,200	0.2%
Businesses	48	8,622	0.6%

Jobs in Arthur’s Pass and Castle Hill are concentrated in tourism and farming:

- 57% of jobs (85 jobs) are in tourism, with 37% (55 jobs) in accommodation and food services, while a further 20% (30 jobs) are in recreation services (which includes outdoor visitor activities).
- Farming accounts for 50 jobs (33%).
- A handful of jobs (15 jobs) are in utilities, construction, support services, and education. Most of these services are provided by resources based outside of the local area that drive in as needed.

Employment statistics for Arthur’s Pass/Castle Hill are based on an annual snapshot from February each year, so will not pick-up seasonal spikes related to winter activity at the five ski areas accessed from the area (Porters, Mt Cheeseman, Craigieburn, Broken River, Temple Basin). Estimates from Ski Areas Association New Zealand data suggest that these five ski areas together had around 35,000 skier days in the 2024 ski season. Calculations from commercial ski area data in Queenstown Lakes² suggests that ski areas typically have about one on-mountain job per 500 skier days across the season, suggesting that there could be around 70 winter roles across the ski areas alone³.

¹ Arthur’s Pass/Castle Hill has been defined as Statistics New Zealand’s “Craigieburn” Statistical Area 2 area.

² Benje Patterson, The contribution of skiing to the Queenstown Lakes economy: <https://tinyurl.com/4wj7v6ca>

³ Arthur’s Pass/Castle Hill has a short season, so peak winter staffing may be higher to deal with peak days.

4. Potential demand from potential dark sky park

This section introduces the potential size of the target market for dark sky parks surrounding Arthur’s Pass and Castle Hill. It is assumed that dark sky parks cover DOC land encompassing Kura Tāwhiti, Craigieburn Forest, Korowai/Torlesse Tussocklands, and Arthur’s Pass National Park.

The analysis focusses on new visitors, who could be targeted to stop in Arthur’s Pass and Castle Hill for the purpose of dark sky tourism. There is already a high-volume of visitors driving through on the way to the West Coast, and if more people can be convinced to stop for the evening or the night, then dark sky tourism could bring fresh money into the local economy. Some local Selwyn residents will also want to see the dark sky parks, but spending by locals isn’t included in the core potential effects because Selwyn residents would simply spend their budget on other things had they not participated in dark sky activities.

4.1. Visitors currently passing Arthur’s Pass/Castle Hill

The first step in estimating the number of visitors who could be targeted to stop and experience the dark skies is to understand the volumes of visitors who already travel past Arthur’s Pass and Castle Hill.

There was an average of 1,807 vehicles a day passing through Arthur’s Pass in 2024⁴, with previous research showing that tourism flows (both international and domestic visitors) account for 40% of this traffic⁵. In people terms, it is estimated that there were about 500,000 international travellers and 460,000 domestic travellers in 2024 passing through Arthur’s Pass in tourist traffic⁶.

Figure 2 – Estimated international and domestic travellers passing through Arthur’s Pass in 2024



Most international travellers pass through Arthur’s Pass/Castle Hill in summer. About 50% of international travellers are estimated to pass through in the March quarter, with around 20% in each of the June and December quarters, while just 10% pass through during the winter months (September quarter).

⁴ Source: Waka Kotahi telemetry data, Arthur’s Pass counter.

⁵ Ministry of Tourism (2007), The tourism flows model summary document.

⁶ International visitor numbers are based on calculations from the Ministry of Business, Innovation, and Employment’s (MBIE) International Visitor Survey (IVS) for the 12 months to 2024 of international tourists visiting the West Coast. This 2024 estimate is of a similar order-of-magnitude to the 650,000 international visitors estimated in 2018 by Antony Byett (Understanding current and forecast visitor flows to the South Island) to pass between the West Coast and Canterbury. The slightly lower figure for 2024 makes sense given other data that shows international visitor numbers to New Zealand in 2024 were only at 85% of their pre-covid level from 2019. Domestic visitor numbers in 2024 were found by scaling the international visitor estimate by the ratio of domestic to international guest nights in accommodation statistics for the West Coast.

Table 2

Approximate seasonality of visitor flows through Arthur's Pass			
Visitor numbers passing through Arthur's Pass, 2024, modelled from MBIE IVS & accommodation data			
Quarter	International travellers	Domestic travellers	Total travellers
March quarter	250,000	170,000	420,000
June quarter	90,000	90,000	180,000
September quarter	50,000	80,000	130,000
December Quarter	110,000	120,000	230,000
Total 2024	500,000	460,000	960,000

On top of the 960,000 visitors already passing through the area on their journey between the West Coast and Canterbury, there are also potential target markets among other travellers who could be enticed to specifically make the journey. For example, the Domestic Growth Insight Tool (DGIT) from Tourism New Zealand shows the average Canterbury resident is interested in 0.72 overnight trips a year in Canterbury. Applying this metric to the 412,000 people living within Christchurch City suggests that Christchurch residents alone could be interested in as many as 300,000 overnight trips within the region each year.

4.2. Interest in dark sky tourism compared to target market

The next step in estimating the potential scale of demand for dark sky tourism is to ascertain the proportion of visitors passing through who may have an interest in stopping specifically to view the dark skies. Dark sky tourism in New Zealand is currently in its relative infancy, with the most established area being the neighbouring Aoraki Mackenzie International Dark Sky Park. Research in Mackenzie highlights:

- 11.6% of all visitors to Mackenzie have an interest in dark sky tourism⁷.
- Half of visitors (49%) at attractions related to the dark skies or local geo-tourism features said the attraction was the primary motivation for passing through Mackenzie⁸.
- 85% of dark sky visitors choose to stay overnight rather than daytrip⁷.
- Taken together, these assumptions imply 4.8% of visitors to Mackenzie overnight in the area with dark sky tourism being their primary motivation for the overnight stay.

This report assumes that a similar proportion of visitors passing through Arthur's Pass/Castle Hill would have an interest in stopping for a dark sky experience as they do in Mackenzie.

About 46,100 visitors (24,000 international and 22,100 domestic) could be interested to stop for the night to view the dark sky from Arthur's Pass/Castle Hill out of the existing 960,000 visitors per year who already drive through⁹. Another 14,400 Christchurch residents a year could be interested in making an overnight visit to the area to view the dark sky¹⁰.

But realising this potential market size for dark sky tourism in Arthur's Pass/Castle Hill isn't a given and would be reliant on the areas to market, curate, and protect their dark sky offering in a manner that proved to be relatively as popular to visitors as Mackenzie. Reaching this threshold would also require sufficient visitor amenities (eg. accommodation) being available. The potential demand illustrated above equates to an average of 166 overnight visitors a day, which would require 55 to 85 accommodation rooms/units between motels, backpackers, lodges, and private rentals (e.g. Airbnb) to be available.

⁷ Source: Tourism New Zealand's DGIT tool, available here: <https://www.dgit.nz/>, and author calculations.

⁸ Source: Waitaki/Mackenzie Visitor Survey 2020, Lincoln University.

⁹ This calculation assumes that a dark sky offering could form the primary motivation for 4.8% of visitors to overnight in the area, which is consistent with survey evidence for Mackenzie.

¹⁰ This equates to 4.8% of the 300,000 Christchurch residents interested in an overnight holiday in Canterbury.

5. Potential spending by dark sky visitors

This section introduces the potential scale of visitor spending that would occur if the target market for dark sky tourism in Arthur's Pass/Castle Hill identified in Section 4 could be fully addressed.

5.1. Indication of spending that target markets could support

The average international visitor is estimated to spend \$239 per day, while domestic travellers spend \$213 per day¹¹.

If we assume the average dark sky visitor to Arthur's Pass/Castle Hill stays for one night, then these daily spends can be combined with the target market analysis to estimate the potential scale of visitor spending that would occur if the target market identified in Section 4 could be fully addressed. Recall that 46,100 visitors (24,000 international and 22,100 domestic), out of the existing 960,000 visitors per year who already drive through, could be interested in overnighting to view the night sky. There is also potential to target up to another 14,400 Christchurch residents a year to view the dark sky.

It is estimated that up to \$10.4 million per year of visitor spending in Arthur's Pass/Castle Hill could be attracted if 4.8% of visitors (46,100 out of 960,000), who already drive by each day, could be hosted to stay for one night to experience the dark sky. A further \$3.1 million per year could be earned if 14,400 Christchurch residents each stayed for a night in the area.

It is important to note that the calculations above should be taken as an initial high-level indication of potential spending only and are not a complete picture of economic impacts. A more detailed economic impact assessment will require stocktaking and further analysis of current and potential future capacity within visitor infrastructure (especially accommodation and activities), as well as the potential costs of investments needed to protect, curate, and market the area's dark sky offerings. If insufficient capacity is made available to service visitors, then visitor spending will be lower as not all demand can be satisfied.

As a point of comparison to these estimates of potential dark sky visitor spending, Infometrics estimates that total visitor spending across the entire Selwyn visitor industry was \$159 million in 2024.

5.2. Employment estimates

A number of jobs in Arthur's Pass/Castle Hill could potentially be supported by the spending of people who might visit for the purpose of viewing dark sky parks centred on the area.

As many as 56 filled jobs could be supported by \$13.5 million of spending by travellers for whom viewing the dark sky gave motivation to stay in the area¹².

It is important to note that this estimate is the theoretical maximum number of jobs which could be supported if such a level of spending associated with dark sky tourism were attracted to the area. Actual employment outcomes would differ depending on spending and on businesses' hiring behaviour. To put the potential jobs that could be supported by dark sky visitors' spending in perspective, it was shown in Section 3 that there are currently a total of 85 jobs in the Arthur's Pass/Castle Hill visitor economy.

¹¹ Average international visitor spending per day is taken from MBIE's IVS (December 2024), while domestic visitor spending is calculated using the discontinued New Zealand Regional Tourism Estimates which showed domestic travellers spend 11% less per day than international travellers.

¹² A multiplier of \$243,204 of spend per job from Statistics NZ's Tourism Satellite Account (2024) was used.

6. Concluding remarks

This report has helped to highlight a potential scenario of visitor demand for stargazing from dark sky parks centred on Arthur's Pass and Castle Hill. It has also shown the scale of visitor spending and the number of jobs that could be supported if this dark sky tourism demand could be fully realised.

About 46,100 visitors (24,000 international and 22,100 domestic) could be interested to stop for the night to view the dark sky from Arthur's Pass/Castle Hill out of the existing 960,000 visitors per year who already drive through on their journey between Canterbury and the West Coast. This estimate is based on a scenario where a similar proportion of visitors passing through Arthur's Pass/Castle Hill would have an interest in stopping for a dark sky experience as they do in Mackenzie (4.8% of visitors to Mackenzie overnight in the area with dark sky tourism being their primary motivation for the overnight stay). Another 14,400 Christchurch residents a year could be interested in making an overnight visit to the area to view the dark sky.

If these extra visitors were motivated to stop for a night in Arthur's Pass/Castle Hill, by dark sky tourism, then this could translate into as much as \$13.5 million of visitor spending. This level of expenditure could support as many as 56 jobs. In comparison, there are currently a total of 85 jobs in the Arthur's Pass/Castle Hill visitor economy (with potentially higher winter peaks during the ski season).

But realising this potential market size for dark sky tourism in Arthur's Pass/Castle Hill isn't a given and would rely on the areas to market, curate, and protect their dark sky offering in a manner that proved to be relatively as popular to visitors as Mackenzie. Reaching this threshold would also require sufficient visitor amenities (eg. accommodation) being available. The potential demand illustrated above equates to an average of 166 overnight visitors a day, which would require 55 to 85 accommodation rooms/units between motels, backpackers, lodges, and private rentals (e.g. Airbnb) to be available. Future analysis will be needed to clarify and stocktake this capacity and the potential costs of investments needed to fully unlock the potential benefits identified.



**Benje
Patterson**
People & Places