Tourism at the glaciers

Franz Josef Glacier, August 26, 2014

Photos by Trevor Chinn
Elevation (m a.s.l.)

Distance across glacier from true-right/north (m)

2008
2012
Data from Willsman et al. (2014)
Research interest

• Understand how climate-induced change at the glaciers might affect visitor behaviour

• Survey: The current visitor experience
  • Visitor and visit details
  • Activities during visit
  • Reasons for visiting
  • Importance of the glacier(s)
  • Expectations and satisfaction
  • Implications of climate change
Survey methods

• Two survey periods:
  • December 2013-January 2014
  • February 2014
• Sample of 500 visitors
Survey limitations

• A sample only – no way to know how representative they are of all visitors

• Poor representation of Asian visitors and tour groups

• Data not picked up by survey questions e.g., price consideration for choosing activities, weather impacts
Usual residence

Number

New Zealand: 77
Australia: 94
UK: 95
Germany: 44
USA: 59
Other Europe: 81
Asia: 19
Other Americas: 25
Other: 6
Visit details

- Nights stayed
  - 39.6% 1 night
  - 42.5% 2 nights

- Time at glaciers:
  - 84% first visit
  - Independent walk to final barrier
    - Franz Josef $n=233$
    - Fox Glacier $n=203$
  - 51.8% ($n=259$) did a commercial activity
    - Over half (55.6%) of these visitors also walked up glacier valley
  - 33.2% ($n=166$) did a flight activity
1% lived nearby
8% unknown

35% travelling north

3% return north

1% return south

52% travelling south
79.6% ($n=398$) stayed previous night in glacier region

<table>
<thead>
<tr>
<th>Location</th>
<th>South of glaciers</th>
<th>North of glaciers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Paringa</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Jackson Bay</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Queenstown</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Wanaka</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Haast</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Unsure</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Harihari</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Ross</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Westport</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Greymouth</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Hokitika</td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>Whataroa</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
55.3% \((n=275)\) staying current night in glacier region

<table>
<thead>
<tr>
<th>Location</th>
<th>South of glaciers</th>
<th>North of glaciers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsure</td>
<td>28</td>
<td>24</td>
</tr>
<tr>
<td>Milford Sound</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Te Anau</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Lake Moeraki</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Queenstown</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Makarora</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Wanaka</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>Haast</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Unsure</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Kaikoura</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Arthurs Pass</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Lake Brunner</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Christchurch</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Punakaiki</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ross</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Westport</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Greymouth</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Hokitika</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Whataroa</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
Other activities at the glacier region

- Lake Matheson: 169 respondents
- Hot pools: 157 respondents
- Other activities: 7 respondents
- Rafting: 7 respondents
- Horse trek: 8 respondents
- Quad bikes: 8 respondents
- Okarito: 11 respondents
- Sky dive: 11 respondents
- Bicycle hire: 12 respondents
- Maori performance: 16 respondents
- Kayaking: 20 respondents
- Bird watching: 35 respondents
- Wildlife centre: 51 respondents
- Gillespies Beach: 61 respondents
- Other bush walks: 115 respondents
- None of these activities: 146 respondents
- Sky dive: 157 respondents
- Okarito: 169 respondents
Most memorable aspect of visit:
569 things reported

- 396 glacier-specific
  - 87 specifically mentioned flights
  - 39 mentioned activities

- 173 non-glacier
  - 135 related to natural environment/scenery, views (e.g., waterfalls)
Importance of seeing the glacier

Not at all important | 1.2 | 1.2 | 6.8 | 10 | 18.2 | Very important | 61.6

Percentage
<table>
<thead>
<tr>
<th>Reason for visiting</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>To see a natural feature that may disappear in the future</td>
<td>6.01</td>
</tr>
<tr>
<td>To be close to nature</td>
<td>5.71</td>
</tr>
<tr>
<td>To view an easily accessible glacier</td>
<td>5.61</td>
</tr>
<tr>
<td>To experience a rainforest</td>
<td>4.34</td>
</tr>
<tr>
<td>To be with friends and family</td>
<td>4.16</td>
</tr>
<tr>
<td>To experience solitude</td>
<td>3.94</td>
</tr>
</tbody>
</table>
Glacier experience factors

- Size of the glacier
  - 1=expected smaller; 7=expected bigger

- Look of the ice
  - 1=expected dirtier; 7=expected cleaner

- How spectacular it was overall
  - 1=expected it to be much less spectacular; 7=expected it to be much more spectacular

- Satisfaction with these three aspects
  - 1=very dissatisfied; 7=very satisfied
Mean scores for glacier experience factors

<table>
<thead>
<tr>
<th></th>
<th>Expectation</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of glacier</td>
<td>4.69</td>
<td>5.22</td>
</tr>
<tr>
<td>Glacier ice</td>
<td>4.68</td>
<td>5.39</td>
</tr>
<tr>
<td>Overall (how spectacular)</td>
<td>4.24</td>
<td>5.64</td>
</tr>
</tbody>
</table>

-The chart shows the mean scores for different factors regarding glacier experience, comparing expectation and satisfaction. The factors include size of glacier, glacier ice, and overall satisfaction (how spectacular). The satisfaction ratings are notably higher for all factors compared to expectations.

---

**Legend:**
- Blue: Size of glacier
- Orange: Glacier ice
- Gray: Overall (how spectacular)
Relationship between expectation and satisfaction

![Bar chart showing the relationship between expectation and satisfaction for different criteria.](chart.png)

- **Size of glacier (n=451)**
  - Expected worse: 5.72
  - As expected: 5.51
  - Expected better: 4.77

- **Look of ice (n=470)**
  - Expected worse: 5.7
  - As expected: 5.55
  - Expected better: 5.12

- **Spectacular (n=473)**
  - Expected worse: 6.15
  - As expected: 5.68
  - Expected better: 5.22
Images of the glaciers

• 67% \((n=337)\) saw images before their visit

• How accurate were these images?

![Bar chart showing accuracy levels]

- 4.5% not accurate at all
- 8.9% very inaccurate
- 13.1% inaccurate
- 19% fair accuracy
- 16.3% fairly accurate
- 17.5% accurate
- 20.8% very accurate
Pre-visit information sources
What did you expect from your glacier visit?

- 5 glacier visit factors
  - Getting close to the glacier
  - Number of people
  - Peacefulness in the valley
  - Interpretation and information
  - Facilities in the glacier valley
Climate change and the glaciers

- 73.6% agreed climate change was ‘definitely happening’

- What do you think will happen to the glaciers over the next 20 years?
  
  - Get smaller, \( n=419, 84\% \)
  - Get bigger, \( n=4, 1\% \)
  - Fluctuate/stay the same, \( n=38, 7\% \)
  - Don't know/unsure, \( n=39, 8\% \)
If you knew the ONLY way to see the glacier was by helicopter would you have visited the glacier region?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>No, definitely not</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Yes, definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
<td>8.4</td>
<td>7</td>
<td>8.4</td>
<td>10.5</td>
<td>15.2</td>
<td>35.7</td>
</tr>
</tbody>
</table>
Would you have visited the glacier region if you knew you might not be able to see the glacier?

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, definitely not</td>
<td>22%</td>
</tr>
<tr>
<td>2</td>
<td>11.6%</td>
</tr>
<tr>
<td>3</td>
<td>12%</td>
</tr>
<tr>
<td>4</td>
<td>10.8%</td>
</tr>
<tr>
<td>5</td>
<td>14.3%</td>
</tr>
<tr>
<td>6</td>
<td>14.1%</td>
</tr>
<tr>
<td>Yes, definitely</td>
<td>15.3%</td>
</tr>
</tbody>
</table>
Implications and conclusions

• Physical changes in both glaciers continue to present challenges for tourism
  • Access
  • Aesthetics
  • Hazard management

• Challenges not limited to climate – nor necessarily specific to the location

• Region has a history of being adaptive and resourceful
  • Experience in meeting environmental challenges
Implications and conclusions

• Seeing the glacier/s very important
  • Part of New Zealand ‘tour’
  • Reason for visiting
  • Other activities visible but secondary

• Not much time in region

• Glacier experience
  • Matched expectations – glacier and visit experience
  • Overall, satisfied with current glacier experiences
Implications and conclusions

• 27% of visitors reported seeing ‘inaccurate’ images of the glacier – contributed to unrealistic expectations
  • Also relevant for ‘crowding’, ‘natural quiet’ etc
  • Some ability to influence

• Opportunities to capitalise on physical changes (including reduced access / visibility)?
  • Differentiated experiences (valley / ice)
  • Climate change education / interpretation

• Valley floor access options and issues

• Importance of diversification