

**‘Last chance tourism’ at the  
Franz Josef and Fox Glaciers,  
Westland *Tai Poutini* National Park:  
Stakeholder perspectives**

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## Chapter 1 Introduction

Understanding the impacts of climate change on tourism destinations requires knowledge about both physical resources and the characteristics of tourism at that destination; stakeholders involved in tourism facilitation and management not only connect the tourist to the physical resource, but are also an integral part of the destination in their own right. This report summarises the findings from 13 interviews with stakeholders associated with tourism at the Franz Josef and Fox Glaciers in Westland *Tai Poutini* National Park on the West Coast of New Zealand's South Island. These interviews traversed themes including: the importance of the glaciers as visitor attractions; perceptions and experiences of change in the glaciers over time; business and management perspectives of glacier change; and stakeholder perspectives on visitor experience at the glaciers. The research represents the first part of a study investigating 'last chance tourism' and was completed during August-September 2013. While the data reported here speaks directly to a number of key objectives of the research project, the material also provided valuable baseline information from which the visitor survey undertaken in the second part of the project was developed (for a full survey report see Wilson et al., 2014).

### 1.1 Background

The Fox (Photograph 1) and Franz Josef glaciers (Photograph 2) of the Westland *Tai Poutini* National Park are amongst the most accessible in the world. They are situated on the western flanks of the Southern Alps, which form a barrier to prevailing westerly atmospheric circulation, resulting in high annual precipitation (Griffiths & McSaveney, 1983). Both glaciers have a large, broad accumulation area situated above 1900 metres, well placed to take advantage of this large precipitation input. Ice from the accumulation areas flows down steep narrow tongues and the glaciers terminate in lush rainforest less than 300 metres above sea level.



**Photograph 1: Fox Glacier in 2014**  
(Photo Credit: Heather Purdie)



**Photograph 2: Franz Josef Glacier in 2014  
(Photo Credit: Jude Wilson)**

Globally, the Fox and Franz Josef glaciers feature in many 'Top-10 glacier lists' (see, for example, '*10 most amazing glaciers in the world*', '*Top 10 incredible glaciers*, and '*10 most beautiful glaciers*'). Within New Zealand they are regarded as one of the South Island's most iconic tourism destinations (Wilson et al., 2012). Fox Glacier and Franz Josef Glacier were ranked 64 and 73 (respectively) on the 2012 '101 Must-do's for Kiwis' list published by AA Travel (2012). They are formally designated as 'Icon sites' by the Department of Conservation (DOC, 2013) and the glacier region encompasses three of DOC's seven proposed destination icon sites located on the West Coast. Conceptualised within a set of desired 'outcomes' associated with increasing recreation participation, the first objective is that these "...icon sites are developed to support the growth of domestic and international tourism" (DOC, 2013, p. 27). Furthermore "...tourist[s] – specifically those people seeking the 'Icon' New Zealand experiences that underpin the New Zealand tourism product" are identified as a key market segment of recreationists (DOC, 2013, p. 29).

Glacier tourism contributes significantly to the regional economy. In the year ending December 2013, a total of 418,466 international tourists visited the wider West Coast RTO region (Statistics New Zealand, 2014), the majority of whom are thought to have visited the glaciers. Domestic travel data show that in the year ending December 2012 there were 283,374 overnight trips to the West Coast RTO region (MBIE, 2013).

Tourists are hosted at either of the two associated glacier villages, situated 23 kilometres apart on State Highway 6. Franz Josef village is the furthest north and the larger of the two villages in respect of both population and tourist facilities. Both villages offer a range of accommodation, food, entertainment and retail premises (both tourist-specific and more general) along with tourism activity/attraction businesses. The main Department of Conservation service and information centre is located in Franz Josef; the information centre

is also part of the official tourism New Zealand i-SITE network. There is a smaller DOC field office at Fox Glacier.

A selection of key demographic data from the 2013 Census for the two villages is shown in Table 1. The Franz Josef population of 444 represents a 3.5 per cent population increase (15 people) since the 2006 Census; the Fox Glacier population decreased by 69 people (18.4%) over the same period. Compared with the West Coast region and the New Zealand population as a whole, the median age of the glacier village populations is younger, higher earning and much less likely to own the properties they live in. The most common languages spoken (after English), the percentage who speak more than one language and the large percentage of people born overseas (when compared to the West Coast Region, but similar for all of New Zealand) suggest a strongly expatriate workforce. Furthermore, unemployment levels are lower at the Glaciers than in the West Coast region and in New Zealand overall. Almost half of the working population in both glacier villages either walk or jog to work – a reflection of the size of the villages, the age of the population and the nature of employment; a much smaller percentage of people walk/jog to work in the wider West Coast Region and in New Zealand as a whole.

**Table 1: Selected demographic data comparing the Glacier townships, West Coast region and New Zealand (2013 Census data, Statistics New Zealand)**

Variable	Franz Josef	Fox Glacier	West Coast Region	New Zealand
Population	444	306		
Median age	29.9 years	31.7 years	42.8 years	38.0 years
Born overseas	38.8%	25.8%	11.0%	25.2%
Most common origin*	Asia	UK/Ireland	England	England
More than one language spoken	18.4%	18.1%	7.9%	20.2%
Most spoken language (after English)	Tagalog 3.2%	Spanish 5.3%	te reo Maori 1.8%	te reo Maori 3.7%
Median income	\$32,600	\$32,500	\$26,900	\$28,500
Unemployment	0%	1.4%	4.7%	7.1%
Main means of travel to work	Walking or jogging (47%)	Walking or jogging (48%)	(Walk/jog 11%)	(Walk/jog 6.8%)
Privately owned dwellings	28.6%	30.8%	68.1%	64.8%

\*‘Most common origin’ is reported by Statistics New Zealand according to a range of different classification categories dependent on the geographic unit described. Thus, a finer level of detail is reported for the larger geographic units of the West Coast Region and New Zealand than is the case for the two glacier townships.

The business demographic data shown in Table 2 illustrates the strong service-focus of the two glacier villages, and highlights the considerable difference between the two villages in respect of the number of tourist businesses and employees. For example, in comparison with Fox Glacier, Franz Josef, has more than twice as many people employed in accommodation

and food services and in retail. In contrast, Fox Glacier village has a larger number of administrative and support service employees. This category encompasses travel and tourism support work including reservation services. These data may be explained by the tendency of some people work at Franz Josef and live at Fox Glacier, and vice versa.

**Table 2: Top five industries by employee count for year ended February 2013  
(Business demographic data, Statistics New Zealand)**

<b>Industry (ANZSIC06)*</b>	<b>Franz Josef</b>	<b>Fox Glacier</b>
Accommodation & food services	270	130
Retail	40	15
Administrative & support services	30	65
Arts & recreation services	30	30
Transport, postal & warehousing	20	30

\*Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06 V1.0).

At each glacier location, an easy drive and walk from the tourist village brings visitors to a car park, from where it is an easy 1-2 hour return walk to viewpoints close to the terminal face of each glacier. Commercial companies also guide visitors in the valleys to the face of the glaciers. In addition, each glacier hosts a guide company taking visitors onto the ice. A number of companies offer scenic flights (many involving a glacier-landing on the upper reaches of the glaciers) and facilitate the guide company heli-hikes on the glaciers themselves.

This research was undertaken at a time of substantive change at the glaciers. While the Franz Josef and Fox Glacier are highly dynamic, sensitive to changes in climate and have a history of rapid advance and retreat (Purdie et al., 2014a) they are currently retreating at a rate climate scientists describe as ‘remarkable’ (DOC, 2013). Since the culmination of the most recent advance phase in 2009, Fox Glacier has lost 470 metres in length, and ice in the lower reaches has thinned from 100 to 180 metres (Purdie et al., 2014b). Similar losses have occurred at Franz Josef Glacier. In addition to shortening and thinning, the retreating glaciers exhibit other physical changes. For example, the region of the Fox Glacier that is heavily utilised for tourism is becoming increasingly debris-covered. This is due to melt-out of englacial debris and increased rock fall from the surrounding recently exposed valley slopes. Also, with thinning of the ice, the previously convex Fox Glacier cross-profile has flattened and modelling has demonstrated that falling rocks can now travel up to 50 metres further out onto the glacier surface (Purdie et al., 2014b). In response to this changing hazard, guided foot access onto the lower Fox Glacier has been suspended.

Of particular significance, in respect of the tourism businesses operating on, and around the glaciers, was the collapse of the front 70 metres of the Franz Josef Glacier in mid-2012. As a result of this collapse, foot access onto the glacier was no longer possible and a temporary increase in the number of aircraft landings was permitted to facilitate the continuation of guided hikes on the glaciers. An aircraft monitoring survey (measuring the effects of aircraft overflights on visitors walking in both glacier valleys) undertaken during the 2012/13 summer found that, for the first time since monitoring began in 1996, ‘annoyance’ levels had risen above the permitted 25 per cent threshold in the Franz Josef valley (Espiner & Wilson, 2013). The increase in aircraft landings, along with a proposal for vehicle access in the glacier valley,

were addressed in a partial review of the Park's Management Plan in February 2013. With foot access still not possible, however, the increased number of aircraft landings were allowed to continue and signage was erected in the valley alerting visitors to high level of aircraft activity (Photograph 3). A monitoring survey undertaken in the Franz Josef valley during the 2013/14 summer reported a slightly lower annoyance level (25.7%) than reported the previous summer (see Espiner & Wilson, 2013 and Espiner & Wilson, 2014).



**Photograph 3: Aircraft signage, Franz Josef Glacier valley  
(Photo Credit: Jude Wilson)**

Foot access onto the Fox Glacier was still possible at the time these stakeholder interviews were undertaken and during the 2013/14 summer season when the associated visitor survey was conducted. However, in the months since, changes in slope stability and river flow at the base of the glacier has resulted in the suspension of all guided tours on the lower glacier. Currently, although the Fox and Franz Josef Glaciers are still able to be accessed by air, this is highly weather-dependent, presenting serious operational challenges for businesses and potentially undermining customer satisfaction.

'Last chance tourism' at the Franz Josef and Fox Glaciers, Westland *Tai Poutini* National Park

## Chapter 2 Methods

Interviewees were selected to represent key stakeholders engaged within the tourism industry at the glaciers. The glacier community is small and many interviewees were known to the researchers via involvement in previous glacier tourism-related research projects. In order to explore perceptions of change (to both the glaciers and tourism) individuals with a long association with glacier tourism were specifically sought. The stakeholder interviews involved representatives from the Department of Conservation (DOC) and a range of tourism businesses associated with glacier tourism. Initial contact with potential interviewees was by telephone; a follow-up email included a research information sheet describing the project and their participation in more detail (see Appendix 1). The project was reviewed and approved by the Lincoln University Human Ethics Committee.

The research was undertaken in August-September 2013 during the less busy winter/spring months to coincide with tourism business stakeholders' greater free time availability. Altogether, 12 of the interviews were conducted on the West Coast: six in Franz Josef, three in Fox Glacier, two in Hokitika, and one at Lake Matheson. The remaining interview was completed in Christchurch. All interviews were recorded, transcribed and analysed through the search for repeated themes and topics.

The same base interview schedule was used in all interviews, although the order in which the questions were asked (and answered) varied, depending on the flow of conversation. The emphasis in interviews and the specific questions asked were also adapted to suit the particular stakeholders involved. The interview schedule, broadly followed in all interviews, covered the following topic areas (a copy of the full schedule can be found in Appendix 2):

### Organisational background

- This introductory set of questions was designed to gather background information on the type of engagement (both personally and professionally) each stakeholder had with glacier tourism. With respect to the DOC representatives, these questions focused on the various organisational roles relating to the facilitation of glacier tourism.

### Franz Josef and Fox Glaciers

- The interviews then moved on to a broader discussion around the perceived importance of the glaciers in the local, regional and national context as visitor attractions and in economic terms. More specifically, information was collected on the extent to which individual businesses (of different types) are dependent on the glaciers, both in respect of their visibility and access. These questions began with discussion around the importance of the glaciers to each interviewee on a personal level.

### Environmental context: climate change

- These questions explored the physical changes at the glaciers observed by interviewees. Perceptions and impacts of the recent accelerated rates of change were

of particular interest, with specific questions focusing on the access and safety implications of these changes.

#### Visitor experiences: motives, expectations and satisfaction

- Stakeholders' views on visitor motives, expectations and satisfaction with respect to their glacier visits were explored, again with perceived changes over time (in respect of the visitor experience and understanding of glacier change) of particular interest. The perceived effectiveness and accuracy of current promotional and marketing material was also discussed.

#### Adaptive strategies: visitors, businesses and managers

- Change in the visitor experience was explored via a series of questions addressing adaptation to glacier change. Stakeholders were asked about adaptations made by visitors, those made by their own agency and others at the broader destination level. The success of these, and the potential for future adaptation was also addressed.

#### Future scenarios

- During interviews, aerial images (one of each glacier) depicting a potential retreat scenario of glacier tourism five years in the future (showing the condition of the glacier, visibility and access changes and associated risks) were used as a prompt when discussing glacier changes.

## Chapter 3

### Findings

The topic areas described in the previous section provide the structure for the presentation of research findings. Data collected using the aerial images and depicting future scenarios for tourism are interwoven throughout other sections of the report. The concluding section presents more generic comments around the future of tourism at the glaciers, climate change and last chance tourism.

To protect interviewees' anonymity, broad descriptors are used in the attribution of quotations. There are occasions, however, when the context of a particular discussion point necessitates more detail about an interviewee's position. Thus, the four DOC managers are sometimes differentiated by role (e.g., information services, assets, community support and recreation) and sometimes by location. The tourism business stakeholders are variously referred to in relation to their business focus (e.g., glacier tourism operator or accommodation/hospitality provider), their business location (Franz Josef or Fox Glacier) or as residents of either Franz Josef or Fox Glacier. No business-sensitive information is reported.

### 3.1 Organisational background

In this section we introduce our sample of 'stakeholders at the glaciers', before describing these stakeholders' 'engagement with the glaciers'. The final section takes a broader look at the nature of 'tourism at the glaciers'.

#### 3.1.1 Stakeholders at the glaciers

Interviewees represented five activity companies: the Franz Josef and Fox Glacier guide companies; a company operating guided walks in both glacier valleys (but not onto the glaciers themselves); and two air operators (one at Franz Josef and one at Fox Glacier) offering scenic flights and facilitating guided glacier heli-hikes.

The three accommodation providers (two at Franz Josef, one at Fox Glacier) represented a hotel, a motel and a mixed accommodation business which included motel and backpacker units and holiday park sites as well as a bar. A representative of the Glacier Country Tourism Group was also interviewed.

The four DOC interviewees (two based in Franz Josef and two in Hokitika) were involved with glacier tourism through information centre management, asset management, community support and recreation advisor roles. At the time of the research, however, DOC was undergoing significant restructuring which may have subsequently affected these positions.

Altogether, ten interviewees were based in the glacier region (i.e., at either Franz Josef, Fox Glacier or Lake Matheson) and had been working and/or living in the region for between one and 23 years; the majority had been in the region for more than ten years. The Franz Josef Glacier guide company representative was based in outside the region, but had been closely involved in tourism at the glaciers for seven years. The other two interviewees had between

seven and 20 years' experience either at the glaciers, or with glacier tourism, but held DOC management roles in the Hokitika Area office.

While interviewee selection was based on current glacier tourism involvement, a number of those interviewed had experience in a variety of roles associated with glacier tourism. One DOC interviewee, for example, had previously worked in both hospitality and glacier activity businesses. One aircraft business interviewee had worked as a glacier guide. The small size of the two glacier communities fostered a high awareness amongst interviewees of the wider tourism environment (i.e., beyond their own roles) at the destination.

### **3.1.2 Engagement with the glaciers**

DOC is responsible for the management of the Westland *Tai Poutini* National Park, including land and species conservation and protection, pest control and visitor management. The agency provides a range of visitor services and facilities associated with glacier tourism including: access roads that take visitors from SH6 to car parks in the glacier valleys; toilets and signage at the car parks; visitor infrastructure associated with the glacier viewpoints; and visitor information at the Franz Josef DOC information office (also an i-SITE). DOC also manages commercial tourism operations at the glaciers through a concession process that includes controls on the number of guided groups permitted onto the ice, the identification of aircraft landing sites and the number of landings permitted. DOC information centre and asset management staff work closely with the commercial tourism companies to facilitate glacier tourism. The restructuring change to 'partnerships manager' was also due to bring the community support role a more business and commercial activity focus.

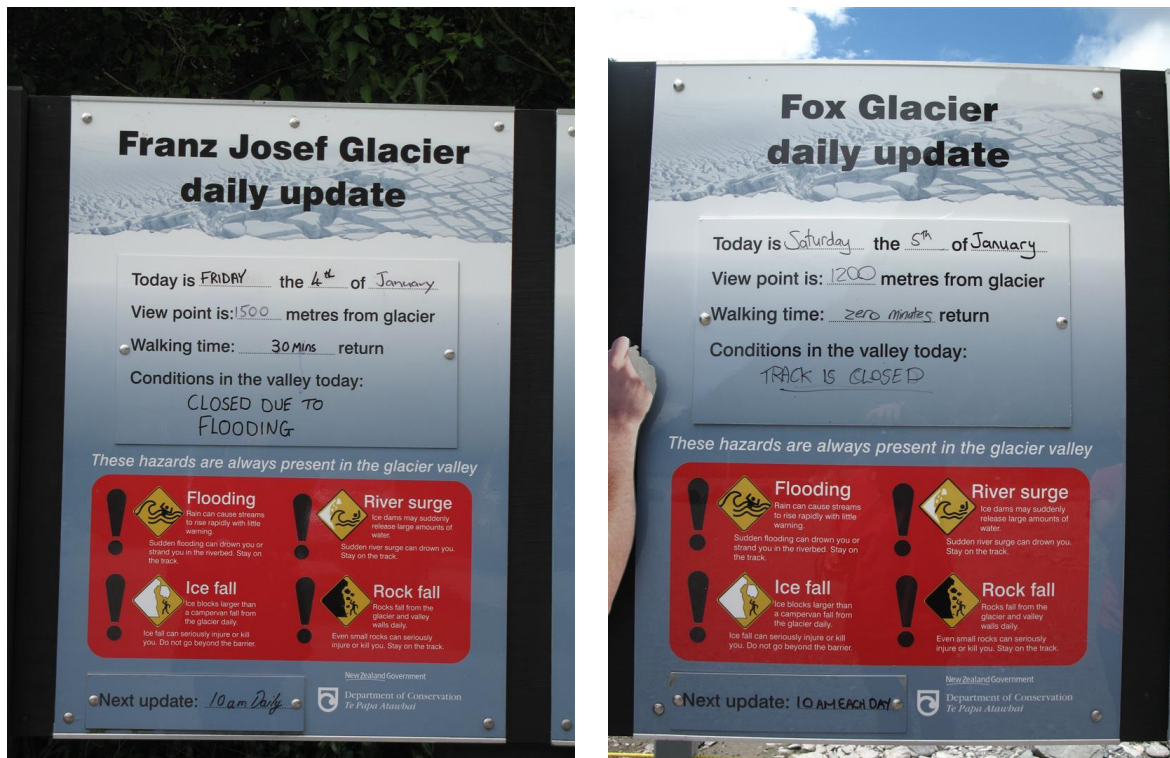
The close relationship between DOC and commercial tourism businesses was noted by the DOC community support manager: "*[the glaciers are a] a critical part of the tourism and visitor industry here on the coast and we [DOC] are an integral part of that business with the kind of assets and opportunities we provide*". He also commented on the length of this association:

*There is a tradition of guiding on those glaciers that goes back over 100 years now, back to the 1880s, as a means of providing access for people onto the ice and that tradition still exists. I do not see the Department and business as separate, we are in this together to provide and facilitate that experience and we are lucky here at the glaciers because there is that long term tradition of access, DOC community support manager.*

Access to the glaciers is carefully managed to ensure that the different activities do not impact negatively on each other. The most recent issue, noted above, was the increase in aircraft noise in the Franz Josef valley (as a result of restricted foot access onto the glacier) which impacts on those walking independently in the valley.

Guided hikes onto the Franz Josef glacier have only been possible using air access after the collapse of the terminal face of the glacier in 2012. Ice Explorer flights take tourists to hiking areas lower down the glacier whilst hiking areas higher up the glacier are accessible via the more expensive heli-hike product. Heli-hikes are also available at Fox Glacier, but the most popular product (at the time of this research) was the guided glacier walk accessed via the glacier valley track. In addition to guided glacier hikes on the ice, both glacier companies also offer guided glacier valley walks (which do not go onto the ice).

The other activity-based company represented in the stakeholder interviews operated guided glacier valley walks and while they did not go onto the ice, they were able to take clients a little closer to the ice than was possible for unguided independent visitors to the glacier valley (e.g., their clients were able to touch the ice at Fox Glacier). While DOC restrictions on where this guiding company was able to take visitors are primarily related to safety concerns, they are also designed to separate (both physically and visually) guided walkers from independent valley walkers. There are some long standing issues with independent valley walkers crossing safety barriers – fostered in part by seeing guided groups doing so (Espiner and Weiss, 2010). Independent walkers represent the largest group of visitors to the glaciers and are generally able to walk up the glacier valleys to viewpoints located 200-500 metres from the terminal face of the glaciers. However, poor weather can sometimes affect access to these viewpoints (Photograph 4).



**Photograph 4: Glacier valley access closed after bad weather, January 2013**  
(Photo Credit: Jude Wilson)

Both air companies interviewed offered scenic helicopter flights, most involving a snow landing (Photograph 5) and operated the flights facilitating heli-hikes at both glaciers; one company also operated the flights for the Franz Josef Ice Explorer trips. Air companies also operate some service flights for DOC (transporting supplies and staff to back country locations) and offer private access flights for climbing groups. One flight operator interviewee estimated that the company experienced approximately 80 no-fly days per year (weather-related). During the busy summer season, in good weather, the company operates scenic flights from 7am to 8.30pm each day.



**Photograph 5: Scenic flight with snow landing  
(Photo Credit: Jude Wilson)**

The accommodation businesses host visitors to the region, and offer booking services and information on activities and attractions in the area. The three accommodation providers involved in the research were selected to represent different types of visitors to the region. One of the Franz Josef accommodation premises catered primarily for tour groups, whilst the other was the main glacier base for the various backpacker bus companies (e.g., Kiwi Experience, Contiki, Magic Bus and Stray Bus) who pass through the glacier region on regular (sometimes daily) schedules. The Fox Glacier accommodation premises typically hosted free independent tourists (FIT). The final stakeholder was a representative of the Glacier Country Tourism Group who promote tourism in the glacier region, maintain a website and publish free tourist maps of the two glacier villages. This interviewee also ran a café.

The majority of stakeholders interviewed also lived in the glacier villages and all three accommodation interviewees commented on the challenges of 'life' at the glaciers. The Fox Glacier accommodation interviewees, for example, were thinking of moving on, remarking that *"Fox Glacier was a great place to live when the kids were young babies, but now... to do sport, it is a four hour round trip for my son to play rugby and he is only six"*. One of the Franz Josef accommodation interviewees also noted the difficulties associated with there being no high school, while commenting that otherwise, it was a nice place for children. The other accommodation interviewee noted issues with respect to attracting and keeping staff, pointing out that a lot of working holidaymakers are employed in hospitality and *"even if they wanted to they can't stay for longer than one year"*.

### **3.1.3 Tourism at the glaciers**

The questions relating to the interviewees' organisational background also generated considerable discussion around the nature of tourism at the glaciers. One of the DOC interviewees commented more broadly on international tourism growth in demand for eco-tourism, adventure tourism and independent travel, noting that *"the West Coast has been*

*well-positioned to provide these kinds of opportunities to people*". Most of the discussion, however, focused on recent challenges facing tourism operators at the glaciers.

Interview respondents reported that visitor numbers to the glaciers have been down over the last few years as a result of the global economic crisis (GEC). The GEC affected some segments of the visitor market more than others; the UK, USA market and the FIT campervan market suffered the most (Photograph 6). There were some reports by respondents that the American market, which had fallen as a result of the recession, was rebounding. The fall in visitor numbers was perceived to have been exacerbated by the impacts of the Christchurch earthquake on tourism in the South Island, particularly in respect of the coach tour market. One glacier activity company interviewee suggested a 20-25% fall in visitors to the glaciers over the last three or four years.



**Photograph 6: Campervans at the Franz Josef holiday park, June 2012  
(Photo Credit: Jude Wilson)**

Accommodation providers in the glacier villages are reliant on the leisure holiday market, and attract very few corporate or business guests, which leaves them vulnerable in tourism downturns. Changes in visitor travel planning behaviour in recent years – an increase in internet bookings, rather than telephone phone bookings and “walk-ins” – offers shorter term certainty of bookings. Ironically, this change is enabled by the provision of free Wifi in many accommodation premises. Interview respondents also reported a fall in the number of Australians passing through the glacier region during the winter months as a result of more direct flights into Queenstown. Previously it was common for these visitors to fly into

Christchurch and travel to Queenstown via the West Coast. While some visitors are now coming from Queenstown to Fox Glacier on day trips, these are perceived to be less beneficial at the destination scale as they stay a shorter length of time and spend less money during their visit.

There were also suggestions that the visitor market had changed over the last few years. For example, the Glacier Tourism Group interviewee noted a *"Huge increase in the Asian market – Chinese, Korean, Taiwanese, Thai and Indians – the research tells us that the highlight for Indian visitors in New Zealand is to visit the glaciers"*. While many of the stakeholders interviewed reported an increase in visitors from India and China, the benefits were not evenly spread across all types of tourism businesses. For example, activity operators and those accommodation premises catering to group travellers were benefitting much more than other tourism businesses from the growing Chinese market.

A number of activity operators also commented on the product preferences of these new visitors, noting that *"if you grouped all the Asian countries together they provide the most business for air companies, but for scenic flights rather than glacier hikes and most of the glacier hikes are the backpacker market"*. The same interviewee went on to say that the Chinese market is definitely changing and growing *"but we need to be careful not to rely on that and nothing else"*. While one of the flight operators reported an increase in demand for scenic flight products, another tourism activity interviewee commented that *"the Chinese are a massive emerging market and are time poor"*, a market characteristic they perceived to have the potential to increase the temptation to alter glacier products to better suit them (e.g., allowing vehicle access in the glacier valleys).

One guiding company interviewee felt that *"people have become less enthusiastic about the outdoors generally"*, adding that *"people are not as good on their feet and people who want to hike are just not out there"*. He also commented on the challenges associated with *"the huge increase in Chinese visitors, who 'had the cash' but were not as easy to manage as a result of the language barrier and in respect of health and safety"*. The company had adapted to this situation by employing a Mandarin and Cantonese speaking guide. The DOC community support manager commented on the challenges associated with changes in the demands of markets, and catering to many different market segments: *"We can provide opportunities for people to have experiences within an environment that is attractive to them, but we cannot be all things to all people"*.

### **3.2 The significance of Franz Josef and Fox Glaciers**

To explore the importance of the glaciers, interviewees were first asked to articulate what the glaciers meant or represented to them personally. Subsequent questions focused on the importance (meaning and economic) of the glaciers for tourism at local, regional and national scales. The importance of the glaciers is reported according to three dimensions: 'personal meaning'; in respect of the 'two glaciers and two villages' of the glacier region; and nationally as 'a tourism icon'.

### 3.2.1 Personal meaning

When asked what the glaciers meant to them personally, many interviewees initially noted the economic importance before adding more personal layers of meaning. For example, a Franz Josef activity operator noted: *"I make my livelihood from seeing the things [glaciers] and to see them disappear is pretty sad"*. Similarly, another Franz Josef activity operator claimed that the glaciers were *"what drew me here and what have kept me here"*. Other interviewees described their personal attachment to the glaciers, and the ways in which their relationship with the glacier/s have changed over time:

*As I have grown older, it is the fact that they are slowly disappearing, and that value is becoming more and more. As a kid it was a block of ice that was just there. I did not really have an appreciation of it because I have been lucky enough to have been brought up here. It became one of those things we would only go and visit if we had family or friends visiting (DOC information centre manager).*

*To me it's a malleable connection to the high mountains I love. I started out my guiding career more for personal reasons – it was a way of just being in the hills. Even though you are low down in the valley, you still have this tangible connection to the high mountains and I love that. It is very much a physical thing... but I guess it [the glacier] is a bit of an old friend now (Franz Josef activity operator).*

The DOC asset manager had 'only' been at the glaciers for 17 years and also described a connection to the glaciers that had *"evolved over time"*. He went on to explain:

*I can't quite see it [the glacier] out of my kitchen window, but I used to be able to. From a family perspective for starters, the family has done really well growing up around the glaciers and working around the glaciers... it's allowed my kids to be educated... with my job I am allowing people to appreciate what I appreciate.*

Others were more pragmatic, reporting that personally the glacier meant little to them except as something they were *"able to sell"*; the same interviewee, an accommodation provider, also admitted that they did not visit the glaciers very often. The DOC information centre employs staff from the local area and the centre manager reported that they encourage new staff to do a commercial trip onto the ice so that *"they get a good grasp on the main products"* adding that *"a lot of people from here would not ever go onto the glacier otherwise... my father is born and bred here and has been on the glacier once – it is just one of those things you take for granted"*.

One Fox Glacier resident noted that, *"our livelihood is based around the glacier"*, adding that *"I try to take my kids there [to Fox Glacier] once or twice a year to keep an eye on things and probably once every couple of years we go over to Franz Josef"*. Some of the stakeholders interviewed commented that they regularly visited the glaciers, often with their children; for others the glaciers were an important recreation resource (e.g., *"They are a fairly unique natural attractions and are pretty spectacular when you get to see them. I love to get into the country around them and in that environment"*, Fox Glacier resident).

Ownership of the Franz Josef Glacier Guides by Ngai Tahu Tourism added a cultural significance layer, as the Franz Josef glacier guide interviewee explained: *"Franz Josef Glacier stands as an extremely important part of the landscape and a place of significance for Ngai Tahu and the guiding business was purchased as a joint venture with Te Runanga Makaawhio"*. For Ngai Tahu, the glacier business is of huge economic importance as *"one of the cornerstones of the settlement with the Crown giving iwi economic self-sustainability"* (Franz Josef glacier guide). Another Maori interviewee (who was not of Ngai Tahu descent) also recognised the spiritual significance of the Franz Josef glacier (*"the tears of Hinehukatere"*) and recalled an experience on the glacier in which a guide had censured a tourist (who had lit a cigarette whilst on the glacier) for their inappropriate behaviour.

### 3.2.2 Two glaciers and two villages

A key theme which emerged in discussion around the local importance of the glaciers was the relationship between these two glaciers and the glacier villages and, in particular, the villages' dependence on the glaciers for their very existence as a tourism destination (see Photograph 7). As one tourism operator noted, *"The glaciers are almost totally responsible for the tourism industry locally – there would be a small tourism industry without them, but it would be insignificant to what it is now"*. The same operator went on to add, *"The towns have grown – based on the glaciers – to become tourism destinations with all the support businesses that entails"*. Another tourism operator perceived the relationship as symbiotic: *"They are part of us and we are part of them"*. The glacier tourism group representative, however, pointed out that the glaciers were fundamental in respect of the destination: *"[the glaciers are the] draw card for all businesses in the area – that is the cover shot – the glaciers – and we [the businesses] are just an add-on to that attraction"*.

One of the accommodation providers described an inseparable link between the glaciers and tourism in the context of broader changes affecting both: *"The decline of the glacier/s coincided with the decline in tourism, so everything was sort of 'blah' for a while – then there was the earthquake and the road closures in January last year"*.



**Photograph 7: Franz Josef village  
(Photo Credit: Jude Wilson)**

The tourism downturn had widespread economic impacts on the glacier communities, as one of the activity operators explained: *"The guides, the big companies have had to reduce their guide numbers – they are not spending money in town, not getting the wages coming through, not paying the property rentals – it is having an effect on everybody"*. Another interviewee described the contribution tourism to the local economy as the response to a question asking the shopkeeper 'who do you sell milk to?': *"I sell milk to someone whose husband works in tourism, or son works in tourism, or she works in tourism – you get a lot of the older generation arguing that the West Coast can survive without tourism, and it might, but just wouldn't be as good... most people here have some connection to tourism"*, DOC Franz Josef resident.

One of the Hokitika DOC interviewees highlighted the importance of maintaining glacier access in respect of the wider tourism community: *"glacier access – seeing the glacier as well as walking onto it – is critical to the wider business community and not just the aircraft operators, it is the moteliers, and the hoteliers as well"*. One of the glacier-based DOC interviewees also reiterated the flow of benefits throughout the community: *"My wife gets to sell really expensive petrol to the tourists that come through, one of my sons is the local electrician, one is a joiner and based out of here – if it wasn't for tourism none of us would have jobs"*. The operator of one of the tourism activity businesses expressed some confidence that since his *"business is not totally dependent on the glaciers"*, he could perhaps adapt if glacier access was no longer possible.

A guide company interviewee also articulated the close relationship between the glaciers and the glacier villages, going on to describe how being tourism destinations have made these villages more attractive places to live:

*The glaciers have historically been really important. I think they still are very important for the region: the small towns around here have been developed with the glaciers as one of the many aspects of life... you drive half an hour north of Franz Josef and you get to Whataroa and it is a ghost town. Just without the glacier. These towns to me are really global [and] what has kept me here is that I talk to people from all around the world everyday – it does not feel small, it feels like you are in a much bigger town.*

Despite perceptions of widespread benefits from tourism in the glacier region, many of those interviewed talked about differences between the two glacier villages (and their associated glaciers). As one Franz Josef accommodation provider explained: *"I think Franz Josef has that more activity feel about it, helicopters and so on. The towns have a different draw and different roles. I think Fox is a more laid back, quieter, peaceful place and Franz Josef can get away with being the loud neighbour. More fun"*. Photograph 8 illustrates the many activities available to visitors at Franz Josef. Some interviewees were of the opinion that there has been more development activity at Franz Josef in recent years, whilst Fox Glacier has been stagnant. A Fox Glacier interviewee acknowledged that international visitors are also attracted by the greater range of hospitality services in Franz Josef and *"they have the backpacker market"*.



**Photograph 8: Franz Josef visitor activities displayed at DOC information centre  
(Photo Credit: Jude Wilson)**

These differences were often presented with a critical undertone; as might be expected, the arguments for and against each village were strongly place-related with respect to the location of interviewees. While they acknowledged some community rivalry, the DOC interviewees had a broader perspective than many of the tourism business stakeholders, and saw the two glaciers as a part of a glacier tourism package (which also incorporated Lake Matheson).

While admitting that Fox Glacier had fewer activities (than Franz Josef) some Fox Glacier interviewees also pointed out more subtle differences between the two villages. As one Fox Glacier accommodation provider explained: *"The villages have got distinct [personalities] – there is a certain parochialism between the villages... I think Fox Glacier is nicer and is a nicer set up for the visitors. It is more open, more quintessential"*. The same interviewee added that Franz Josef is perceived as a *"tourism village"*, whereas Fox Glacier was underpinned by its farming base and settlement by *"generations of farming families"*.

There was also a perception that recent biophysical changes had made Fox Glacier the more impressive of the two glaciers to view, whereas in the past they had equal standing. A Franz Josef activity operator noted that *"people just want to come to this region, not to one specific glacier, but at the moment more people are going to Fox Glacier than has been the case over the last 17-18 years"*. There appears to be some competition between the various tourism operators in each of the glacier villages; some Franz Josef interviewees admitted that they preferred to keep visitors in Franz Josef (rather than send them to Fox Glacier), although they

might suggest they “*take a look [at Fox Glacier] on their way south*”. However, it is widely believed that a large proportion of visitors go to only one of the glaciers.

Changes in the conditions at one glacier can impact significantly on tourism operations at the other, although some questioned the extent of these impacts: “*When they stopped doing the glacier walks in Franz Josef, everyone panicked and said ‘that’s it, everyone is going to move to Fox Glacier, shut town down, it’s all over’.... And I do not think that has really happened*” (Franz Josef accommodation provider). The Fox Glacier accommodation provider, however, was of the opinion that, “*Franz’s problems have certainly helped Fox – and it’s the town that has benefitted, not just the [Fox Glacier] guides*”. Changes to the glacier products also have a knock-on effect: the Franz Josef aircraft company, for example, was busier as a result of loss of foot access for the guiding company at Franz Josef and, while they did not increase capital investment (e.g., buying more helicopters), they did hire more staff (ground crew and pilots).

### 3.2.3 A tourism icon

Although the interviews did generate some discussion about the glaciers’ national importance as a tourism destination, most interviewees discussed glacier tourism in the context of its importance to the West Coast Region and South Island. The Franz Josef glacier guide interviewee suggested that such a remote place (as south Westland) needs an attraction to draw people to it. He went on to say that:

*They are fundamental for tourism on the West Coast. There are many features on the West Coast that are really significant included in the World Heritage area... but actually what draws visitors is the glaciers. What brings visitors to New Zealand is largely the landscape which is how New Zealand has been promoted for the last 100 years... they [the glaciers] are an important part of the landscape... they would be up there in the top five or six important things. So they are very, very important to the tourism economy and New Zealand-wide they are part of the attractions that people come to see... and they are extraordinarily important to the Coast.*

One accommodation provider also focused her comments on the West Coast, explaining that “*the Glacier Tourism Group has done a good job of selling the area as a whole, not just focused on the glaciers – it’s the nicest point on the West Coast because of its infrastructure*”. Others commented on the low profile afforded the glacier region by Tourism New Zealand. As the Fox Glacier guide interviewee noted, however:

*One thing we have not really talked about is that I wonder if the glaciers are a bit kind of passé, a bit like Waitomo, you know. They do not have the same allure as Queenstown that gets thousands of dollars’ worth of travelling money it seems. It’s just a feeling I have gotten over the last little while... maybe it is more related to the recession.*

Many interviewees discussed the importance of the glaciers in the context of the popular circular South Island touring route. As the DOC community support manager, talking about the travel route followed by many FIT tourists, explained, “*you cannot look at the glaciers in isolation from the rest of the West Coast – the glaciers are part of the circuit and you have to see them in that context rather than just a destination in themselves – it started out as a destination and became more*”. The Fox Glacier accommodation provider added that

*“because of this circular route, even if access to the glacier retreats and retreats, it will still be a place [for people] to stop”.*

As pointed out by some interviewees, however, destinations on touring routes are especially vulnerable to events beyond their own boundaries such as the fall in visitor numbers at the glaciers resulting from direct flights into Queenstown and the South Island-wide impacts of the Christchurch earthquakes. Locally, while the Fox Glacier guiding company had benefited from the loss of foot access at Franz Josef (with increased business) this has to be balanced against a significant fall in the number of tourists doing heli-hikes over the last five to six years as a result of rising fuel prices and helicopter cost increases.

### **3.3 Glacier change**

These questions explored glacier change, and the interview data is presented in two sections: the first looks at perceived changes in the physical resource; the second focuses on the impact of those changes on the visitor experience.

#### **3.3.1 Perceptions of glacier change**

Perception of physical change to the glaciers was related to the length of association and the degree and frequency of engagement experienced by each stakeholder. In turn, this was also impacted by the nature of stakeholder engagement. One of the Franz Josef accommodation providers, for example, had only been at the glaciers for a year and had taken a heli-flight onto Franz Josef, but not yet been to Fox Glacier. One interviewee had worked previously as a glacier guide and commented that *“when you are guiding you really notice the difference in the glaciers”*. A number of interviewees commented on the *“dirty look”* of the glaciers as a result of increased rock fall (see Photograph 9). Those familiar with the broad changes in the glaciers over multiple decades, perceived current changes to be rapid.



**Photograph 9: Fox Glacier terminal face, showing glacial debris  
(Photo Credit: Jude Wilson)**

Those who visit the glacier/s regularly have observed significant changes. For example, a Fox Glacier resident of 11 years, noted *"the peak since we have been here was 2009. And since 2009, 4 years, it [Fox Glacier] has gone back 800 metres. You can see it physically when you go up there"*. They also remarked that the glacier is much narrower and dirtier – covered in moraine – than it looked in older photographs they had seen. An air operator reflected on other changes they had observed at Fox Glacier: *"The Fox Glacier has retreated back maybe 400 metres, but it is the drop in terms of the height that is the most worrying thing – you used to climb 100 metres up onto the glacier from the track and now you are dropping down 100 metres"*. Another air operator with on-glacier experience observed that *"the upper part of the glacier does not noticeably differ [compared with] before the retreat started. It is just the lower areas and in some ways it is quite interesting seeing the changes"*.

Whilst those familiar with the glaciers have come to expect change and to some extent are able to predict those changes, the 2012 collapse at Franz Josef was somewhat unexpected. The DOC asset manager explained:

*When it receded and collapsed – a year ago we thought this is going to happen in the next 6 months, and it basically happened in the next 6 weeks. It just sort of disappeared really quickly and now the guides are chasing the glaciers as fast as they can. We try to anticipate where the best access point for the next bit is, and then you find it is another 500 metres up than that.*

In the context of glacier change, Franz Josef glacier attracted more comment than did Fox Glacier because of the 2012 terminal face collapse.

Differences in rate of change were also related to the physical features of the two glacier valleys. As one of the Franz Josef aircraft operators explained: *"[There is] more talk about changes at Franz Josef than at Fox Glacier – Fox Glacier is not changing as quickly – or the retreat there is not as noticeable – because of the way the [Fox Glacier] valley is shaped"*. One tourism operator suggested, however, that while Fox Glacier is not retreating as noticeably, it may be potentially more problematic as the area used by the glacier guide company is getting narrower. Also, as one interviewee noted, *"the Fox Glacier valley overall is even more unstable than Franz Josef – it is certainly steeper leading up to the glacier"*.

Those who had seen the Franz Josef glacier in the 1980s (at a time it was in significant retreat) perceive the current conditions as similar. While not explicitly stated, there was an underlying suggestion, or even hope, that the glacier had subsequently recovered from that decline and, therefore, could do so again. One Franz Josef interviewee, who had been living at the glaciers since 1984, commented that *"the glacier has not pulled back to where it was then, but the biggest change has been in the last two years"*. The DOC recreation advisor noted that in the 1980s the road had been further up the valley (making a shorter walk for visitors) and that *"when you went for the walk it was quite out of touch with the natural environment. I remember that you walked up these concrete steps that had been embedded into the bedrock to get you to the glacier viewpoint"*. He also noted that the identification and management of risks have improved over the last 30 years: in the 1980s there was a foot bridge taking visitors to the true right of the valley that quite simply *"would not be built today because of rock fall hazards"*.

Some interviewees were more concerned about the negative press surrounding glacier retreat than the retreat itself. One of the Franz Josef accommodation providers thought that *"people pick up on that, but there still will be an amazing glacier. Smaller but still there"*. The accommodation provider went on to say that even researchers visiting drew attention to what was happening to the glacier, noting that the retreat as a symptom of global warming is not necessarily proven, given that in actual fact the *"glacier has retreated and advanced for 100s of years"*.

This history of glacier retreat and recovery was a prevalent theme in interviews: comments varied from confidence in the survival of the glacier/s (e.g., *"there is always going to be a glacier – tourists have been coming here for 100s of years"*) expressed by one of the accommodation providers, to the DOC information centre manager who said that they *"would like to think it [the glacier] will come forward again"* and referred to past decades in which there had been significant retreat, followed by advance. However, they went on to reflect that, *"I am thinking my grandchildren are not going to be able to see the same things I have – that is my attitude, hopeful but pessimistic"*. Others expressed confidence that the glacier/s will not necessarily keep retreating; the growth trend of the 1990s was commonly suggested as supporting evidence for future glacier advance. One of the activity operators also pointed out that *"these are features that are millions of years old and we only have a picture of what happened in the last 30 or 100 years"*.

### **3.3.2 Impacts on the glacier experience**

While most interviewees thought that visitors were relatively unaware of physical changes in the glaciers, the change in access to the Franz Josef glacier has impacted on the visitor experience at both glaciers. It is also perceived to have altered the balance of visitors going to each glacier. For some visitors, for example, Fox Glacier became more appealing as it offered a cheaper glacier hiking experience; the increase in aircraft activity at Franz Josef impacted negatively on independent visitors in the Franz Josef valley.

Low visitor awareness of glacier change is attributed to the fact that most visitors have not been to the glaciers before. A Franz Josef activity operator explained:

*Some people have commented recently that they expected the glacier to be cleaner and some people are surprised at the rate of retreat, but a lot of people don't know any different as they have never been before and don't know anything about glaciers.*

Others suggested that, even if visitors have been before, it is difficult for them to recollect where the glacier had been, or what it had been like. One of the Fox Glacier operators suggested that other things associated with the glacier experience may have changed (e.g., *"they may think it has retreated, but it is just that the car park is further away"*). Another activity operator was of the opinion that *"visitors do not understand the rapid changes that have occurred in less than a year"*.

While DOC facilitate commercial glacier products, through concessions and access provision, they have a more immediate involvement (and more personal responsibility) in respect of the valley walks to the glacier viewpoints (Photograph 10). The DOC asset manager articulated the challenges around providing a good glacier experience to independent walkers:

*When things like the Franz Josef glacier collapse happen you personalise it initially 'what does it mean for me?', and then you go 'we'll still be able to offer good views to the public'. I guess I still have my own people of interest at heart: I am really concerned they are not going to get a good experience, but we can still give them a good experience and it may still be the best glacier experience they ever get in their lives – it is just not quite as good as in the past.*



**Photograph 10: Fox Glacier valley walk entrance showing DOC infrastructure  
(Photo Credit: Jude Wilson)**

Visitors walking up the glacier valleys are often given advice on which valley/glacier can provide the better experience. As one of the air operators noted, *“for the last 18 months I have been telling people to walk up to Fox Glacier – if you are going to walk up to one, walk up to Fox Glacier. I just think the track is better at the moment – in the past I would have said Franz Josef [was better]”*. Another operator noted that *“At the moment the Fox Glacier track is as good as you get and as good as I have seen it”*. Some changes may, however, be more to do with changing visitors than changes in the glaciers. One of the accommodation providers, for example, commented that if the walk to view the glaciers gets longer there may be some issues arise as people are not used to walking very far: *“A lot of people have only lived in cities and especially the Asian market [may not be prepared to walk that far]”*. This interviewee had noticed that many of his *“guests will drive the 500 metres [from their accommodation] to the village to eat”*.

While the impacts of increased helicopter noise on visitors in the Franz Josef valley has been closely monitored, one of the Franz Josef accommodation providers also noted that the increased noise in the village also affects the visitor experience negatively. The guided valley operator also reported negative impacts of helicopter noise on their clients, although he

personally *"took it for granted because it is a necessary evil in this town because it [glacier tourism] is such a big part of the town – but I think something could be done to minimise the noise, different machines even"*.

Some tension arises as a result of the often competing glacier experiences and their impacts on each other. The DOC information centre manager, for example, noted that staff take care to remain *"neutral"* with respect to discussions around the increased noise from helicopters at Franz Josef. Others also reflected that, although increased helicopter activity contributes significantly to noise pollution for other visitors, the presence of multiple large groups walking up the valley to access the glacier (as happened previously) presented visual pollution for other visitors. The DOC asset manager also identified a *"positive"* in the reduced foot access at Franz Josef, noting that as a result of the loss of foot access, there is less crowding in the morning and early afternoon with guided groups at Franz Josef. Photograph 11 shows multiple users at (and on) the terminal face of Fox Glacier; Photograph 12 shows visitors in the Franz Josef valley.



**Photograph 11: Visitors in valley and on ice at Fox Glacier terminal face  
(Photo Credit: Jude Wilson)**



**Photograph 12: Visitors in the Franz Josef valley  
(Photo Credit: Jude Wilson)**

Less change has occurred on the higher reaches of the glaciers. One of the air company interviewees noted that *“we have not changed our landing spots in 20 years – [the ice is] probably not as deep as it used to be, but it is high enough up not to have changed too much”*. Some of the guide company interviewees, however, reported access challenges and bottlenecks on the ice as a result of glacier retreat:

*Getting onto the thing gets longer and harder, or riskier... and then just real estate options on the glacier – having places to go and trying to fit people on the ice has become quite an issue. We have this opportunity [because of what happened at Franz Josef] to take lots more people, but we are maxing out right now.*

Changes at Franz Josef are perceived to have benefited Fox Glacier tourism businesses. When walking onto the ice became impossible at Franz Josef, the town's accommodation providers found that many backpackers were going to Fox Glacier to do guided hikes. Some Franz Josef accommodation and activity business provide a shuttle to Fox Glacier for their guests and clients, although it is difficult to coordinate demand with multiple departure times for glacier hikes. When asked about visitor adaptation to recent changes, one Franz Josef interviewee commented that *“a lot more people are hearing that the Franz is not accessible and some even perceive the town as being closed – so in Franz Josef we are getting a lot less bed nights than what we should be getting”*. One of the Franz Josef accommodation providers thought that activity businesses offering non-glacier products (such as the Wildlife Centre shown in Photograph 13) had benefitted from the changes in guided hikes at Franz Josef:

*Many of the backpackers who do Ice Explorer trips now have more time to do other activities in the Franz Josef village – when they walked onto the ice it was a full day trip, whereas Ice Explorer is only a half day and the Kiwi Experience people are here for longer than that.*



**Photograph 13: Wildlife Centre, Franz Josef village  
(Photo Credit: Jude Wilson)**

### **3.4 Visitor experience**

The visitor experience was also explored more broadly via questions addressing interviewees' perceptions of visitor motives (and the importance of seeing/experiencing the glacier/s) and their expectations and satisfaction with their glacier experiences. The formation of expectations and the perceived effectiveness and accuracy of current promotional and marketing material was also of interest. These data are presented in two sections: 'the glacier draw card' and 'the glacier experience'. The visitor experience was specifically examined in a survey undertaken over the 2013/14 summer (Wilson et al., 2014).

#### **3.4.1 The glacier draw card**

There was widespread agreement across all those interviewed that seeing the glaciers was the primary motive attracting visitors to the destination. One accommodation provider thought that, in respect of their guests, *"going up on the glaciers is the first prize"*; for hotel guests, the glacier helicopter flight was a *"bucket list item"* and *"everything else [available at the glaciers] is secondary to that"*. Another accommodation provider noted that *"for the Chinese it [the attraction] is the glacier, a big thing on their bucket list... they will look at 10 people doing a heli-hike without even blinking – they want the high end product"*. A guide company interviewee also commented that *"[for the Chinese] the main focus is not about understanding natural history, it is 'look at me – here is the guide's ice axe and I am on top of the glacier'"*. Another accommodation provider commented that for the backpacker market *"it [going on the glaciers] is one of the things – from the moment they arrive in New Zealand – they are aware of and it is a highlight for them"*.

Some accommodation interviewees thought that a steady number of people arrive at Franz Josef with not enough time to do anything much at the glacier. Many interviewees commented on the difficulty (being able to do what they wanted to at the glaciers) for those on tours as they did not have much time at the glaciers and often missed out in poor weather; in

contrast FIT visitors have the freedom to stay and hope for better conditions. Others discussed tourists' preferences for different types of glacier experience: *"I know a lot of people want to go up on it [the glacier] and touch it"* (aircraft operator). One of the aircraft operators also commented on the choice between the more expensive heli-hike flights which go high up on the glacier, compared to the cheaper, lower level Ice Explorer trips, *"it is a money trade off – the high quality [ice] for the high cost"* adding that *"the backpacker market wants the cheap option"*. The other aircraft operator also thought that *"price dictates whether people will take a flight at the glaciers or not"*. Others suggested that, for many tourists, the scenic helicopter flights were popular because they did not take all day, offered a glacier landing and were a novelty in themselves.

Part of the attraction of the Franz Josef and Fox Glacier glaciers is thought to be their accessibility. Some interviewees, for example, reported seeing tourists who visit glaciers worldwide, comparing them, adding that the *"beauty of this one is its accessibility"*. One of the glacier guide company interviewees also pointed out that while there are glaciers found in many other countries (and, in fact, New Zealand has many other glaciers) the Franz Josef and Fox Glacier *"are picturesque glaciers, they are easily accessible and they are accessible from a comfort perspective... people can walk up to them in shorts and a t-shirt and they can walk on them in their shorts and t-shirts"* (see Photograph 14).



**Photograph 14: Visitors at the easily accessible Fox Glacier viewpoint  
(Photo Credit: Jude Wilson)**

### 3.4.2 The glacier experience

There is a perception that many visitors have little prior knowledge of the glaciers. As one accommodation provider reported, *"they class the glaciers as one region, they do not even know there is Fox and Franz. They book to stay here and do the walk there and vice versa"*. The accommodation providers interviewed, however, all reported receiving positive feedback that suggested tourists were *"generally much more impressed [by the glaciers] than what they expected to be"*. One noted that *"it [Fox Glacier] is not as impressive as it was, but then when people who have not seen it before come, it is still phenomenal"*. A number of the tourism business interviewees were regular viewers of the feedback posted on Trip Advisor, and for accommodation providers good reports of glacier experiences were just as important as feedback on their own accommodation premises. One of the accommodation providers had the following to say:

*Your accommodation might be fine and rated highly, but tourists are paying for an entire experience. They do not come to you because you have a hotel; they come for the entire package and everyone supports each other to provide an all-round good experience.*

Keeping promotional images up to date is perceived to be an important part of managing visitor expectation and satisfaction with their glacier experiences. Most of the tourism business interviewees reported that they *"try"* to keep promotional images up to date. For the Glacier Tourism Group *"the mandate is marketing what we have now"*; the DOC recreation advisor admitted that *"we have been more vigilant working on updating our material to reflect the current situation, but that is an acknowledgement of how rapid the change is"*.

Some interviewees, however, thought that imagery promoted in brochures and on websites was not always accurate. As the DOC information centre manager noted, *"the glacier does look like the images promoted (at least in some parts), but often the advertising and product brochures do not accurately portray what visitors might encounter on their specific trip – you have to read the small print"*. Also, *"people look at the commercial company brochures, then decide to do the independent valley walk and are disappointed because they do not get to see what was in the brochures"*. The DOC community support manager also noted that often it was the contexts within which glacier images were displayed that was important, and referred specifically to the number of images taken on a sunny day.

When asked about visitor satisfaction, many interviewees focused on those doing commercial glacier experiences rather than independent valley walkers. One aircraft operator noted that scenic flights surpass expectations, attributing this to the fact that not many people have seen a glacier before, as well as a high level of enjoyment associated with the helicopter flight. The other air operator added, *"As far as the chopper flights go, we never get one complaint. Everyone just steps out and is beaming from ear to ear – for most it is an experience they have not done anywhere else"*. The Glacier Tourism Group interviewee compared the quality of the valley experience – with complaints about a *"dirty glacier"* – to the scenic flight experience: *"I think we have always had these comments especially after a dry summer when the dust has covered up the valley and they look fairly grey. But then most visitors who go onto the glacier or go on a scenic flight come back impressed"*.

Visitor satisfaction is also perceived to increase associated with how high up the glacier visitors go. An aircraft operator, for example, reported that satisfaction is lower (and expectations are less consistently met) in respect of those doing lower level guided hikes – the heli-hikes (*“which go higher to nicer ice”*) are better than ones that go on the ice lower down, adding: *“The glacier could be a bit grubby and small at the moment, but if there is an amazing ice cave there the clients will go away happy”*.

Flying hikers onto the glacier at Franz Josef has also increased the level of satisfaction with the experience. As the glacier guide interviewee explained: *“most of the negative comments reported previously related to the length of time spent driving and then walking up to the glacier”*. This also improved the quality of ice visitors experienced, as they land higher on the glacier than where they were able to walk to, and has resulted in fewer injuries as a result of people not being as fatigued as in the past, when they walked onto the glacier.

### **3.5 Adaptive strategies**

Change in the visitor experience was also explored via a series of questions exploring adaptive strategies associated with the management of the physical resource of the glacier, and those implemented by the various tourism business. Visitor adaptation to glacier change was discussed earlier (impacts on the glacier experience). The first section below, 'facilitating glacier tourism', primarily reports data from the DOC interviewees. 'Changing products and experiences' looks at the challenges and implications of both current and (potential) future adaptive strategies in respect of the glacier tourism businesses.

#### **3.5.1 Facilitating glacier tourism**

The Department of Conservation (DOC) facilitates the independent visitor experience in the glacier valleys and regulates the operation of the commercial tourism products. The DOC community support manager talked about the need for *“flexibility in management to be able to deal with such a dynamic environment”*, adding that this 'flexibility' represented the Department's ability to be responsive to change. Recent dramatic changes had triggered a change in concession allowances, as well as significant changes in land management approaches. The DOC community support manager also commented that *“[at the glaciers] you are not managing for some sort of consistent state, you actually have to manage for change”*.

As managers of the physical resource, the challenge for DOC is also *“keeping the visitors informed of the changes that occur”* (DOC recreation advisor). The same DOC interviewee was critical of the 'competition' between the two glacier towns to attract visitors, suggesting that *“ideally visitors should be informed which glacier will provide them best experience for what they want”*. Evidence of how dynamic the area is and how closely the official information centre staff manage tourist expectations was confirmed by the DOC information centre manager:

*We try to encourage the staff to get up there at least once a month if they can, especially after the visitor access boys have made a track change or moved the barriers – you need to know exactly what you are taking about and telling people about.*

The DOC information centre manager also commented that *"I would like to think that the Department is doing the best job they can to provide glacier viewing points that are both safe and 'good' – it is based on mother nature as well"*. The DOC asset manager talked about how seeing dirty, or moraine covered ice is disappointing for visitors and how DOC is able to manage and 'improve' their experience:

*Understanding of what is going on is certainly reduced when they can't see the white piece of ice. It's one of the advantages of Franz Josef at the moment – they do actually get to walk for 50 metres adjacent to a piece of ice so they understand it is all ice under there. We do try to manipulate things a little bit and keep a piece of ice clean for them.*

The change in concession allowances at Franz Josef, to permit more aircraft activity, has resulted in significant issues with respect to the management threshold for annoyance with flight noise. The DOC recreation advisor, however, thought that:

*[Tourists] expect it to be busy. I think they would expect some aircraft activity as well. It is not as if it is not reported in other media, like the Lonely Planet. It is about aligning those messages, the challenge as managers is the tension that causes. I think it [putting signs up in the valley] is a valid way to set expectations, but other people use expressions... I read it in the paper people writing things like 'to expect a high level of aircraft activity you are admitting that you can't manage the place' – so that is a tension. Some think that is not what National Parks are for. I think valid information is the appropriate thing to use.*

In defence of the decision by DOC to allow more aircraft in the Franz Josef valley, the interviewee quoted above also pointed out that, while the aircraft monitor found the noise threshold had been exceeded in the Franz Josef valley, *"people were just as disappointed when they could not get on a glacier flight showing the importance of this product to visitors"*. One of the aircraft operators commented on the annoyance threshold being exceeded, suggesting that this could ultimately change the product they were able to offer: *"It might mean flying higher which would increase flight time and price, influencing demand"*.

There was also some discussion around the proposals for allowing all-terrain vehicles in the Franz Josef valley to facilitate visitor access. Although some interviewees had no problem with this *"as long as it is done in the right way"*, others thought that visitors would miss out on some special aspects of the glacier experience. The DOC asset manager, for example, commented that during the walk up the valley:

*You get to talk about and experience things that you would have missed if you were in a bus – you don't see and hear the birds, you don't experience what the waterfalls are doing. I want people to come on my terms and slow down and appreciate the place.*

The DOC information centre manager also pointed out that it is not just the presence of vehicles that would impact on the independent walking experience, but also the maintenance

of access for vehicles: *"The valley floods often so you would have diggers and trucks up there maintaining that valley"*.

The use of 'diggers' to manage access in the glacier valleys was a popular conversation topic with both tourism business and DOC interviewees. The Glacier Tourism Group interviewee noted that in the past diggers were not allowed in the park when work was needed, adding that it is much better now that they are because *"things can get fixed more quickly"*. However, the use of diggers compromised the values associated with of the park for some respondents. As the Fox glacier guide interviewee reflected:

*Putting the digger in was pretty major... using a mechanised tool to cut the track, rather than a pick and shovel. There was some resistance and personal values – held by some guides – were challenged, so they were a little disappointed – but at the same time they see that we could have spent three months doing what we did in three days.*

While the glacier guide saw putting the digger in *"as short term payment for a long term gain"* he went on to say that, *"it is really odd to see this big 20 ton digger – a Tonka Toy – with the glacier in the background... it does weird things to you. You are not used to it"*. Photograph 15 shows heavy machinery working on the Franz Josef access road; Photograph 16 shows a digger being used to upgrade the Chalet Lookout car park at Fox Glacier.



**Photograph 15: Heavy machinery working on Franz Josef glacier access road  
(Photo Credit: Jude Wilson)**



**Photograph 16: Digger at Chalet Lookout car park  
(Photo Credit: Jude Wilson)**

The DOC asset manager explained a change in mind-set, with respect to the 'manipulation' of nature and the use of diggers, which has occurred in recent years:

*What we have done at Fox Glacier in the last couple of years – with shifting the river – which is something we have never done before, never been keen on. We actually had to do it in the Fox valley because otherwise we were not going to have access; we were going to lose our eroding car park and everything unless we did something. Now that we have done it I think we are a little more psyched up to playing with nature a bit, and even if it doesn't last we now have a budget to do exactly that again... we can put the digger in the big truck the next day. We haven't done that at Franz Josef yet, but we would now be more likely to do it [shift the river] in the future because we had success with it in the Fox valley... I think we could go and train the river and I think my brain could cope a lot better with it now.*

He went on to say that if that hadn't been done they would have 'lost' the Fox Glacier access road several times over in the previous two-three years. While these actions preserved the facility and infrastructure (their investment) he took a much wider view noting that, "spending money on that allows 200-300 thousand visitors to go through that area before it is lost again, and the West Coast – a township or two – benefitted from good publicity instead of bad publicity. Also, there were no long term effects from doing the Fox valley – the town thought we were 'good blokes' for doing it". These comments reflect the close relationship between the various DOC and tourism business stakeholders and the community at the glaciers.

### 3.5.2 Changing products and experiences

The Glacier Tourism Group interviewee also agreed that adaptive strategies need to be fluid enough to change on an on-going basis (e.g., *"you do not want to be restricted and need to be a bit more flexible"*); he also suggested that, although to some extent the 'green movement' was restricting development at the glaciers, there is need for caution so as not to impact on people's experience through over-commercialisation. He talked about managing the risks associated with changes that have already occurred: *"Maybe put pressure on aircraft companies to have less noisy aircraft – rather than restricting the number of flights allowed"*.

The Glacier Tourism Group interviewee thought that the impact of continuing glacier retreat on current glacier tourism products *"may mean a shift in focus and looking for other ways to reach the markets – some might get caught up, while others develop and jump on new opportunities"*. He also had the following to say about the all-terrain vehicle proposal and other potential for product development:

*The helicopters will be there and things will develop, whether it's an all-terrain vehicle or who knows what – the glaciers are too hard to get to for a lot of people – it is an exhausting walk so if that could be made easier on some way it would certainly open it up to a lot more people to experience it... possibly a jet boat that goes up the valley and does not make any noise ... or a treetop walkway.*

The DOC recreation advisor pointed out it was during the 1980s glacier retreat period that the current aircraft glacier products were developed. Others expressed confidence that there will still be something that can be done to facilitate access:

*I am not worried at all as long as it doesn't retreat too far. If they've got an option, if there is an alternative, Franz Josef vanishes and Fox Glacier is still there, then we are going to lose more [tourists] to Fox Glacier. But if they both disappear, it will definitely have some impact. I do not stress about stuff. She'll be right! They will build a big gondola or something...." (Franz Josef accommodation provider)*

Some of the changes in glacier tourism are driven by changes in visitor demand. One guide company interviewee thought that tourists were staying for much shorter time than in the past and *"just wanting to check the glaciers of their list"*, rather than engage with them through hands-on experiences. When asked if tourists make any adaptations to maximise their glacier experience, the same speaker reflected *"I almost wonder if they are going the other way. They do not book ahead any more – they just want to go out that day and book with short notice, which of course in the summer you can't do, so you miss out"*.

There was some talk about the dilemma facing tourism activity operators: *"Do they try and get as many people out there as they can while it is still there and they are able to, or do they try to preserve the integrity of their trips?"*(Fox Glacier accommodation provider). The reduction of useable areas on the lower levels at Fox Glacier also restricts the area guided hikers are able to use resulting in *"more demand for the product and less of it"*. The Franz Josef glacier guide interviewee also suggested that the flatter terrain on Fox Glacier potentially limits/compromises the visitor experience *"you can't hide people from one*

*another [on Fox Glacier] and they [Fox Glacier guides] have seen a significant deterioration in their satisfaction ratings".* The 'visibility' of other visitors on the Fox Glacier was shown in Photograph 11. Others were not keen to see vehicle access allowed in the valley as, for them, it represented "*mass tourism*" with potential to compromise the glacier experience for the many visitors who walk up the glacier valleys.

There are perceived to be considerable challenges associated with the development of new business ventures at the glaciers. There was some comment, for example, around new commercial enterprises that have appeared over the last few years, which have had high development costs, whilst not generating sufficient returns to be viable. The DOC recreation advisor commented that, even for glacier activities "*the main challenge for anyone wanting to diversify that product is the investment vs the demand*". As one aircraft operator noted:

*Because people have come for the glaciers, alternative activities are not going to tempt them – people have tried [and failed]. It is hard to come up with activities that are really not to do with the glaciers that are going to be sustainable.*

Others talked about new products "*adding value*" to the glacier experience and potentially increasing visitors' length of stay, rather than offering a viable alternative draw card. While DOC has installed interpretation at Ship Creek (a heritage icon site located to the south of the glacier region) and done some significant facility upgrade work at the Lake Matheson site over the last few years, they acknowledge that this has been in an attempt to increase length of stay and attract more people to those sites ("*that there is more to the destination than the glaciers*") rather than providing viable substitute attractions. Even with increased promotion of these other 'icon sites', however, the question remains in the longer-term "*whether the alternatives are strong enough to get on people's itineraries*".

Many interviewees commented on the natural limits to what can be done. It is widely understood, for example, that the glacier valley tracks have reached their limits because of rock fall hazards close to the glaciers. As one aircraft operator noted, "*the distance the public are allowed to walk will not change at Franz Josef because of the nature of the terrain, although the glacier will be further away*". One of the activity operators explained the implications of further glacier retreat for visitors in the Franz Josef valley:

*I think there will be quite a few years yet that we can go up the valley and view the glaciers – but perhaps from a distance as access to the foot of them becomes [more] difficult and even dangerous.*

He added, however, that "*I think that Franz Josef will definitely be affected [by glacier retreat] – it may get to a point where you do not get much view of the glacier*". One of the tourism operators who worked in the Franz Josef valley also commented that they would not take people any further back at Franz Josef because of the rock fall danger where the valley narrows and gully becomes more confined. He suggested, however, that a viewpoint much further away from the ice would potentially be better from a safety perspective, as people would not be as tempted to cross the safety barriers (see Photograph 17). Others noted that changes at Franz Josef could attract more people to Fox Glacier – to both the glacier (if they still wanted a walking experience) and for accommodation.



**Photograph 17: Sign advising visitors not to cross the barriers at Fox Glacier:  
Note the visitor beyond the sign  
(Photo Credit: Jude Wilson)**

While there was a common perception that what a lot of people do at the glaciers is controlled by price, one of the aircraft operators noted that if foot access to both glaciers became impossible that could change things dramatically. If people are unable to walk up to the glaciers it could increase demand for flights, although as the DOC community support manager cautioned, *“maybe if people see the glacier from the bottom not looking so good they won’t want to see any more of it, and perhaps in the future you will start to see people thinking about alternative ways of accessing that glacier”*.

Changes in one product can also have a knock-on effect on the popularity of other products. For example, the development of the Ice Explorer product to facilitate guided hiking on Franz Josef, after the glacier was no longer accessible by foot, impacted on the number of people doing heli-hikes, and in turn, the aircraft companies servicing these. However, this also presented commercial challenges for the Franz Josef guide company as a result of *“the huge extra cost [of hiking products involving a flight] which automatically sheds part of your market and a real lack of ability to deliver when the weather is bad”*. It was also noted that if all the cheaper glacier experience options (e.g., independent walks and Ice Explorer) were no longer available it could have significant impact on the large backpacker market who currently visit the glacier region.

The majority of the business changes reported were reactive, rather than proactive, with tourism operators focused on maintaining the *“status quo and waiting to see what happens”*. There was, however, some forward thinking by one operator who noted: *“The big thing for us will be if we are thinking of selling up, and that a good time to do it is while there is something to sell”*. A similar concern, with respect to the value of their business if they decided to sell, was articulated by one of the accommodation providers interviewed.

Businesses also have to be in a position to adapt quickly to changes in both their visitor markets and the glaciers. In the downturn associated with the GEC for example, the Fox Glacier guiding company elected to minimise business costs other than reducing guides and

were in a good position to respond when the Franz Josef glacier access changed. One of the guide company interviewees also noted that having a seasonal business also makes it easier to adjust to recessionary losses in visitor numbers. One of the DOC interviewees commented on the difficulty for the Franz Josef guiding company when Franz Josef glacier face collapsed, prohibiting access to guided groups as they had to very quickly change their product, market that change effectively, and then put it into play; they did this within a week.

### 3.6 The future of glacier tourism

Overall, the stakeholders interviewed appear to hold a cautiously positive view of the future of glacier tourism. The images of potential future scenarios for glacier tourism shown during interviews did however trigger some reflection on their own future business prospects and on the future of glacier tourism more broadly.

It is difficult to judge what effect changes in the glaciers will have in respect of access for the two glacier guide companies. The Franz Josef company interviewee indicated that they might feel some impacts on business operations if their glacier landing sites need to change (e.g., crevasses opening up or rock fall), but that it was good at the present time. He went on to say *"I am sure there will always be helicopter flights and beautiful mountains and upper glaciers – in the immediate term anyway – but yes, I think potentially there may need to be a shift in focus gradually over time"*, adding that *"I think we will run out of fuel before that [flights can no longer take people to the glaciers] – at some stage something like that could happen"*. The Fox Glacier guide company interviewee presented a wider viewpoint:

*In the future though, it will have a huge effect on our community if we lose access to that resource. It is certainly having an effect in Franz Josef on development and [with] people trying to get out of town and can't, because people don't want to buy homes or businesses. It does sound like there have been a few good buys from people that are committed and staying on. Even here, there is a set of houses that have been picked up quite cheaply.*

One activity operator thought there was potential to increase the walk options around the glacier valleys (such as, for example, reinstating the Robert's Point track), suggesting that this would have *"the added benefit of keeping people staying longer in glacier region and benefitting everyone"*. The Robert's Point track has been closed since the January 2013 storm, which was also responsible for the temporary closure of the two glacier valley tracks (see Photograph 4). The DOC recreation advisor, however, was less convinced:

*If you could throw money at the solution, you would upgrade the Robert's Point track to provide a really quality view point. The challenge with that is that it is a long walk – a 6-hour return trip – and it is not necessarily what the visitor wants.*

One accommodation provider suggested that *"if the glaciers are established enough as a tourist icon then people will come even if it is not like it used to be"*, but then went on to say *"maybe I am naïve to think that people will still come here without the glacier, maybe they won't"*. The Glacier Tourism Group interviewee commented that the *"main attraction becoming less attractive"* has business implications for the non-glacier businesses at the destination although *"if visitor numbers [to the destination] can be maintained it would not*

*be so bad*". The DOC information centre interviewee noted that the implications of some of the future scenarios (showing more retreat) were terrible, especially given that people were already complaining about the look of the glacier. Another accommodation provider suggested that the impact of changes in the glaciers might relate to how they rate globally as glacier attractions, adding that *"the moment it [the glacier here] stops exceeding expectations and becomes the norm then we will encounter problems"*. The Glacier Tourism Group interviewee was more positive about the future of tourism at the glaciers and the survival of the glacier region as a destination:

*If the glaciers go back in a hurry and disappear, what is going to be left for tourism? ... I think that tourism would evolve around the environment and the natural history of the area. I think people would still come for that drive... I think we would sustain some reasonable form of visitor attendance just because of the World Heritage area, the Haast Pass Highway and we have the tourism facilities here. Who knows the road to Milford may open up?*

### 3.6.1 Last chance tourism

This research was undertaken during a period of significant change at the glaciers as a result of a changing climate. In the context of this climate change discussion, interviewees were also asked to comment on the potential interest of visitors in the glaciers in respect of it being a 'last chance tourism' destination.

With the recent rapid changes in the glaciers, there is an opportunity *"to tell the story of climate change and retreating glaciers. We have done it in the past but it is piece of interpretation information that is not available at present"* (DOC recreation manager). Photograph 18 is of an interpretation panel (no longer in place) showing glacier retreat at Franz Josef.



Photograph 18: Interpretation panel, no longer in place, showing Franz Josef glacier retreat (Photo Credit: Jude Wilson)

The same recreation manager also noted, however, that the dynamic natural environment presented significant challenges with respect to the longevity of any infrastructure (such as, for example, "*the glacier was here*" markers, and interpretation panels and "*whatever we put in there gets washed away*") and went on to say that:

*I think because people are going there to see the glaciers and they have been satisfied with the walk we can add value by telling them about the glacier retreat story on site. That may be a point of difference that people go back even more satisfied and it may connect them to the world around them – that this is happening now, and it is not something in the future, it's today.*

Others had mixed views on the viability of marketing the destination as 'last chance tourism'. As two of the glacier tourism business interviewees commented:

*There was a business or two here in the last few years that suggested we started marketing 'last chance tourism' but I don't think that is a good idea at all. I do not think we are at stage – it is not as if they are going to disappear overnight – these are big chunks of ice. It will take a long time to take them down to nothing – maybe ask me again in five years' time (Franz Josef Aircraft operator).*

*I think glaciers are portrayed globally as one of the indicators [of climate change] so people are aware of that when they come here. For some people it is a motivator to come before they [the glaciers] go. We have often thought of putting someone in front saying 'quick, quick, see it before it is all gone' (Fox Glacier guide).*

When asked at the conclusion of the interview if he foresaw any potential to promote the New Zealand glaciers – southern hemisphere ones – as 'last chance tourism' attractions, the second interviewee quoted above noted: "*I would be a little bit uncomfortable with that though. With them receding all of a sudden you create lots of interest, but you can't do anything with them. And that is worse in a way*".

## Chapter 4

### Conclusion

These stakeholder interviews highlighted the central issues for tourism operators and managers at destinations in which the main attractions are under threat from climate change. The key to successful adaptation – in respect of facilitation of glacier access, glacier product availability and the maintenance of high levels of visitor satisfaction – appears to be flexibility (i.e., being prepared to change not only products, but also perhaps values associated with what is acceptable at the glaciers) and the ability to react quickly to any glacier change.

Most interviewees, however, acknowledge that there are limits to future adaptation. These limits are both physical (in respect of access to the glacier valleys and the glaciers) and social (in respect of visitor motives, expectations and satisfaction). Furthermore, change to any one glacier product can have implications on the visitor experience that reach well beyond that product alone. For example, the change to flight only access for the glacier hiking product at Franz Josef not only impacted on the noise levels experienced by visitors in the valley, but also impacted on the cost of the hiking product itself and thus the visitor demand for that product.

It must also be remembered that, in addition to the challenges of glacier retreat, the tourism businesses and resource managers at the glaciers face numerous external threats. The weather impacts significantly on the daily operation of scenic flights and guided glacier hikes. The weather also presents significant financial and logistical challenges for DOC in resource management terms. The on-going success of tourism at the glaciers relates directly to what is happening in the wider New Zealand-tourism environment, with respect to visitor numbers, and the origins, motivations and expectations of those visitors.

The wide-ranging implications of environmental change for tourism at Westland *Tai Poutini* National Park identified by stakeholders participating in this research, are illustrative of the challenges facing other climate-change sensitive destinations e.g., changing demand, evolving products and a general discomfort with the 'last chance tourism' label (Lemelin, Dawson & Stewart, 2012). Given the rapidity of change, it is critical to document case-specific adaptive strategies, so that knowledge and experience can be shared by those responsible for managing climate-vulnerable natural assets in protected areas (Lemieux & Eagles, 2012).

'Last chance tourism' at the Franz Josef and Fox Glaciers, Westland *Tai Poutini* National Park

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## **Appendices**

'Last chance tourism' at the Franz Josef and Fox Glaciers, Westland *Tai Poutini* National Park

## **Appendix 1**

### **Research Information Sheet**

**Lincoln University**

***Environment, Society and Design Faculty***

#### **Research Information Sheet**

You are invited to participate as a subject in a project entitled:

#### **Glacier Tourism and Westland Tai Poutini National Park: Stage One (Stakeholder Perspectives)**

The aim of the research is to better understand how climate-induced change at both Fox and Franz Josef glaciers affect visitor behaviour; stimulate a change in tourism products and affect management decisions and policies relating to conservation and visitor use. The research is being undertaken independently by staff at Lincoln and Canterbury universities and is funded through the Lincoln University Research Fund. This project is part of a wider international comparative project with case studies also taking place in Canada and Australia.

Your participation in this project will involve a face-to face interview of approximately 30-40 minutes duration. This interview will include questions about your organisation and its links to the glacier(s); the rate of environmental change; visitor experiences of the glacier(s); adaptations or strategies to deal with environmental change and implications for the future under current climate projections. Your participation in this project is voluntary and you may decline to answer any question. You may also withdraw from the research at any time (up to 6 weeks after completion of the interview) by contacting one of us by email or phone (contact details are listed below).

Interviews will be conducted at a time and place to suit you and will be digitally recorded. The interviews will be transcribed in full and you will have the opportunity to review your own interview transcript if you wish. If you prefer not to be recorded we will take notes throughout the interview - these notes will also be available for review once they are written up.

Some of the results of the project may be compared with the data collected from the other international case studies. The results may also be presented at an academic conference and be published (such as a Research Report or an academic journal), but you may be assured of your anonymity in this investigation: the identity of any participant will not be made public, or made known to any person other than the New Zealand research team and the Human Ethics Committee, without the participant's consent.

To ensure confidentiality we will be the only people with access to the interview recordings and to ensure your anonymity only broad descriptors will be used in the presentation of any data in both verbal and written forms.

The fieldwork component of the project is being carried out by:

Dr Jude Wilson, Senior Research Officer, Lincoln University Email: [jude.wilson@lincoln.ac.nz](mailto:jude.wilson@lincoln.ac.nz) Tel: (03) 423 0502

Dr Emma Stewart, Senior Lecturer, Lincoln University Email: [emma.stewart@lincoln.ac.nz](mailto:emma.stewart@lincoln.ac.nz) Tel: (03) 423 0500

'Last chance tourism' at the Franz Josef and Fox Glaciers, Westland *Tai Poutini* National Park

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We will be pleased to discuss any concerns you have about participation in the project or you may contact the Dean of our Faculty at Lincoln University:

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The project has been reviewed and approved by the Lincoln University Human Ethics Committee.

## Appendix 2

### Interview Schedule

#### STAKEHOLDER INTERVIEWS: Glacier tourism & Westland Tai Poutini National Park

##### A) Organisational background

We first want to learn a little about what your organisation/business does e.g.

- Sector and market focus
- Diversity of operation
- Geography (both glaciers?)
- Employees
- How long has the organisation/business operated, and how long is your involvement?

##### B) Franz Josef & Fox Glaciers

Can you describe what the glaciers (Franz Josef or Fox Glacier; or both) 'mean' or represent to you personally; and to your organisation/business.

How important are the glaciers locally/regionally/nationally in terms of a) what they 'mean' or represent; and b) in economic terms.

How important are the Fox and Franz Josef Glaciers as visitor attractions in the area?

To what extent is your organisation/business dependent on the glaciers? Please provide some examples.  
*[Note: if dependency is described as 'low' explore why this is the case].*

How does your business/organisation utilise the glaciers?

How important is the visibility and accessibility of the glaciers to your organisation/business?

##### C) Environmental context: Climate change

In your own experience, can you describe how the glaciers have changed over time? Compared with other changes you've observed, how would you describe the current rate of change?

Are there any implications for your organisation/business as a result of environmental change at the glaciers?

Are there implications in terms of access to the glaciers? Are there implications for visitor safety?

Have you considered what might happen to the glaciers in the future as a result of climate change?

##### D) Visitor experiences: motives, expectations, satisfaction

Why do you think visitors come to the Westland? Have these motives changed over time?

What do you think visitors expect before experiencing the glaciers directly? What do you think informs these expectations?

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Do you think visitor expectations are met as a result of their visit? Are visitors satisfied with their glacier experiences? Please provide some examples.

Do you think visitor satisfaction with the glaciers has changed overtime?

How is the visitor experience of the glaciers marketed/promoted to potential visitors? How does your organisation/business promote the glaciers to visitors?

Do you think the glaciers are accurately portrayed in the current marketing/promotional material?

Do you think visitors have a good understanding of the changing glacier?

### E) Adaptive strategies: visitors, businesses & managers

What actions/strategies have visitors adopted to maximise their experience of the glaciers? Has this changed over time? What factors make it more likely that such strategies are used?

What actions/strategies has your organisation/business adopted to deal with the changing nature of the glaciers? How successful have those adaptations been?

To what extent have these actions/strategies been planned in advance?

How have other organisations/businesses adapted to the changing nature of the glaciers? How successful have those adaptations been?

What actions/strategies have Park managers taken to deal/cope with changes in the environmental condition of the glaciers? How successful have those actions/strategies been?

What actions/strategies would you like to see in the future?

### F) Future

Do you think tourists will continue to visit the area under the following scenarios? [insert three images of different glacial extent and coverage sourced from glaciologist at UC]

If the glaciers continue to retreat, what are the implications for residents in Westland; for tourists; for local business and for your organisation/business? [insert images]