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Australian snow tourist's perceptions of climate change: implications for the Queenstown Lakes region of New Zealand

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Abstract

This qualitative research has emerged from the sustained discussion of the future of winter alpine tourism in the Australasian context. Our paper follows on and complements recent climate modelling and forecasting for New Zealand's future snow availability, using semi structured interviews to gain greater understanding of the potential behavioural adaptations available to Australian snow tourists in New Zealand. This paper will present the preliminary findings from interviews conducted during the 2011 winter season in the Queenstown Lakes District of New Zealand. Motivations for travelling to New Zealand for snow tourism are fundamental to understanding behavioural adaptations under climate change scenarios, contrary to previous research we identified that the tourism offerings of the Queenstown Lakes District stretch far beyond the ski fields, and this is particularly appealing to Australian tourists and could limit vulnerability to climatic changes.

Keywords: New Zealand, snow sports tourism, spatial scale, climate change

1 Introduction

The close relationship between Australasian neighbours Australia and New Zealand is often discussed in relation to history, immigration, trade, politics, and environment to name a few. This relationship prompted current Australian Prime Minister Julia Gillard to state that, "Australia has many alliances and friends around the world... but New Zealand alone is family." With 2,151 km of the Tasman Sea between the countries, they are each other's largest neighbours in the geographically remote south Pacific region. From a tourism point of view, New Zealand has arguably more to benefit due to their neighbour's population of approximately 22 million, compared to their own 4.3 million (notably the remainder of the South Pacific has a joint population of approximately 8 million people). Eastern seaboard Australia includes densely populated urban centres including Melbourne, Sydney and Brisbane, and is the closest tourism market for New Zealand. However since even these flights are on the boundary of short- to medium- haul flights, it is clear that New Zealand is reliant on air transport for tourism. This has raised a number of research questions, prompting a variety of literature on tourist flows and energy consumption associated with air travel (Becken 2002), along with tourist's concern with extreme-long haul travel (European markets) and climate change (Higham & Cohen 2010). Thus the interplay between climate change and tourism in New Zealand has been identified, yet questions around the reliance of New Zealand on the Australian tourist

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market, and implication under climate change scenarios remains. This is specifically pertinent to snow-based recreation and tourism in the Queenstown Lakes District (QLD) on the South Island of New Zealand. This location is specifically vulnerable to changes in Australian snow tourism consumption, due to the number of tourists who currently support this economically and socio-culturally important industry. In this paper we will use qualitative techniques to build upon the climate modelling and forecasting for New Zealand's alpine context provided by Hendrikx & Örn-Hreinsson (2010), acknowledging Hennessy et al. (2007)'s forecasting for Australian snow. After providing a contextual background, we will introduce some key literature on snow tourism and climate change before specifically attending to the situation in the QLD. From here, the methods utilised will be discussed before findings and discussion focus on the potential implications of climate change for snow tourism in QLD, specifically regarding Australian tourists.

The 2011, 'Australia and the World: Public Opinion and Foreign Policy[1], report produced by the Lowy Institute (Sydney, Australia) found that Australian's concern about climate change is continuing on a downward trajectory, with 46% of Australians considering it to be a very important goal for foreign policy, down 7% from last year, and a considerable 29% from 2007. Alarmingly, support for the most sceptical of choices, 'until we are sure that global warming is really a problem, we should not take any steps that would have economic costs' has nearly tripled since 2007, at which time only 7% agreed. Thus views on climate change in Australia are becoming more moderate, but what implications does this have for behaviours? More directly, could this stance have an impact on snow tourist's decision making when considering a cross Tasman winter holiday in the QLD? Further, we consider the perceptions of individuals who rely on specific climatic conditions, in this case snow, for their recreational activity, and discuss whether this has any implications for their behavioural adaptation.

1.1 Snow tourism & climate change

When compared to other tourism sub-sectors, winter or snow tourism has received considerable academic attention (Scott & McBoyle 2007) with a wide base of literature covering a range of geographical localities, spatial scales, research methods, and academic disciplines, thus providing an increasingly comprehensive account of types of vulnerability for the ski industry to forecast climatic changes. In addition, this body of literature has come to note the spatial contingency of vulnerability assessments. In other words, the specific local realities of not just individual countries, or regions, but of small scale alpine localities will have real implications in scenarios of- and vulnerability to climate change. For ski fields this means the micro-climate of the specific region, along with the altitude, direction the ski field is facing, development model of the ski field (commercial or club ski field)[2], its economic position

[1] Seventh annual report of its kind

[2] New Zealand's ski fields are separated between commercial and club fields, with the latter being money-making operations and the latter on a membership basis

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and the governance structures of the ski field (private/public ownership of the operation and the land on which it is situated). For these reasons, generalisations are inherently difficult for ski fields or skiing regions.

In spite of the vast academic attention over the past 30 years, engagement with stakeholder groups has been rather limited. Recent years have seen this gap being increasing addressed, specifically regarding supply side stakeholder engagement, primarily assessing the perceptions of ski field operators. For example Wolfsegger et al. (2008) found that ski area managers in Austria did not consider climate change to be a great risk, as technical adaptation through artificial snow production was thought to ameliorate any vulnerability. Bicknell & McManus (2006) used qualitative methods to discuss climate change with Australian operators, who suggested that the issue and communication of climate change could be as detrimental as the physical manifestations for snow-based tourism due to the industry's reliance on long term investment.

The progression of demand-side research has been rather more sporadic. König's (1998) seminal work conducted in 1996 assessed Australian skier's behaviour under climate change scenarios, and has been used as the basis for other demand-side surveys. Nevertheless, this quantitative work has been unable to gain the depth of understanding of snow tourists. The quantitative surveying methods have subsequently been joined by analogue methods, which are used to forecast potential behavioural shifts under climatic changes (Dawson & Scott 2010; Dawson et al. 2009; Ford et al. 2010). This is a useful tool as it moves beyond stated behaviours, to actual past actions in winter seasons which demonstrate the characteristics forecast by climate change models (such as less snowfall). A recent and significant study (for this research) is that from Pickering et al. (2010) who address the attitudes about climate change of Australian skiers, comparing their results with König's survey. An important conclusion for New Zealand's ski fields was that the Australian skiers surveyed have become less likely to ski as often, and less likely to go overseas in a season of low natural snowfall, from 38% in König's survey, to 16% in 2007 (11 years later). Thus the demise of the Australian snow tourism market may not benefit New Zealand to the degree one might initially expect. It raises questions including the applicability of the "Backyard Hypothesis" (Hamilton et al. 2007) where urban weather influences skier motivation. In Australia where urban centres are far removed from the alpine experience, how can the connection to snow and desire to participate continue in an ever warming climate? And what implications could this have for New Zealand's snow tourism industry?

1.2 Queenstown Lakes District of New Zealand

The Queenstown Lakes District (QLD) is situated in the Southern Alps on the South Island of New Zealand. The geo-political boundaries include (amongst others) both Queenstown and Wanaka, key urban centres for Southern Hemisphere snow tourism. This region is home to many commercial operations including four downhill alpine ski fields, one freestyle ski park, and a cross country ski field. In addition to the primary snow tourism operators a range of secondary businesses in-

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cluding ski hire, touring and heli-skiing companies, along with retail, food and accommodation are reliant on the ski season, and the snow tourists for their success.

The dominance of the Australian market in the QLD developed as a result of increasing transport links through the availability of cross-Tasman flights, competitive costs relative to Australian ski fields, along with specific and targeted marketing to Australian snow tourists. In 2008 38% of skier days were international visitors (SAANZ 2009), with the major market being Australia. A post-season report from NZSki (who own and operate three ski fields, two in Queenstown; Coronet Peak and the Remarkables, and one in Canterbury, Mount Hutt) showed that 64% of skiers at The Remarkables and 54% at Coronet Peak, were Australian. This thereby signifies the important relationship between these neighbouring countries for snow tourism markets, and the importance of understanding potential behavioural adaptations.

1.3 Snow tourism and climate change in the Queenstown Lakes District

The Intergovernmental Panel on Climate Change (IPCC)'s Fourth Assessment in 2007 provided a comprehensive discussion of the specific vulnerabilities of New Zealand to climate change. New Zealand's primary exports; meat, dairy, wood and tourism are heavily dependent on natural resource. Fitzharris (2007) suggested that a 'conservative estimate' of 79% of these exports are sensitive to climatic changes, a substantial vulnerability for New Zealand's economy. Hendrikx & Örn-Hreinsson (2010) published a report commissioned by the Ski Area Association of New Zealand specifically addressing, 'the potential impact of climate change on seasonal snow conditions in New Zealand'. This paper marked the first specific assessment of the vulnerability of snow-based tourism in New Zealand. It consists of two parts, the first a national scale analysis of potential impacts, second, a local scale paper for each ski field. Although the former has been released to the public domain, the commercial sensitivity of specific risks posed by climate change to each individual ski field meant the local scale documents have only been made available to the ski field in question. Hendrikx & Örn-Hreinsson (2010) found that all but the highest elevations would experience a decrease in snow cover for the 2040s and 2090s scenarios, however this reduction would be greatest in lower elevations (below 1,000 metres above sea level (m a. s. l)). The base elevations of alpine downhill ski fields in the QLD range from 1,168–1,671 m a. s. l., thus by this measurement, placing them close to harm's way. Nonetheless it is important to recognise once again that elevation is only one of many factors contributing to climate change vulnerability (additional factors would include the business model, local resource governance, aspect of the mountain etc.) and this thereby demonstrates the importance of including social assessments of vulnerability to the natural sciences.

As discovered in earlier reports, technical adaptation – predominantly artificial snow production – is central to ski field operator's adaptive strategies (Steiger & Mayer 2008; Elsasser & Bürki 2002; Wolfsegger et al. 2008). As a result, Scott et al. (2003) called for second-generation vulnerability assessments to include artificial snow in order to gain a more candid account of current realities which are not overly pessimistic. However the ability to produce artificial snow (access the required re-

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sources; water, electricity, along with the required atmospheric conditions, also called 'wet bulb' temperatures) has been increasingly called to question. Indeed Pickering & Buckley (2010) identify the 'shortcomings' of artificial snow production as a primary response, especially in Australia where water resources are already stretched. They identify alternative strategies such as product diversification for long-term survival. This again will have impacts for the New Zealand ski industry, if as Pickering et al. (2010) predict, low snowfall does not result in Australians seeking snow-based holidays abroad.

In their assessment of seasonal snow conditions in New Zealand, Hendrikx & Örn-Hreinsson (2010) specifically address artificial snowmaking, which could identify its prominence and prevalence in New Zealand's ski industry. Recent years have seen significant investment into snow guns in the QLD, still there are vastly different realities between ski fields, ranging from 100–20% coverage. Consequently, as acknowledged by Hendrikx & Örn-Hreinsson (2010), the 'economic and hydrological reality' of producing the required quantity of artificial snow under climate change scenarios is not included in their report. Thus, although artificial snow production is an important technical strategy to continue the ski industry 'business as usual', it should not be viewed in isolation from other adaptive options, or from a solely technical perspective, limiting the socio-economic and environmental inputs.

2 Methods

This research was designed to complement the contributions of climate science to understanding the vulnerability of snow-based tourism in the QLD to climate change. While natural sciences are successful in forecasting potential climatic shifts, a social science approach can address the complex socio-economic factors, more specifically, the behaviours of Australian tourists who we have identified as central to the success of the industry. We considered qualitative techniques to provide us with the tools to gain a deeper understanding of the multiple factors which will be included in behavioural decision making. Demographically, participants covered a range of snow tourist groups including family units, couples, friendship groups, ranging from first time skiers and snowboarders, through to expert (self determined) skill level. All Australian snow tourists originated from the eastern seaboard.

During the winter season of 2011, we conducted face to face, in-depth interviews with 93 groups of Australian ski tourists in Queenstown and Wanaka. Interviews were semi-structured, voice recorded and partially transcribed. Participants were recruited at various ski fields, in urban centres and at the airport. In addition 84 interviews were conducted with domestic tourists recruited through regional ski clubs and at

[3] It is important to note that due to the abnormally late start to the winter season 2011, which saw ski fields opening nearly 4 weeks behind schedule with predominantly artificial snow Therefore interviews conducted in round 1 (July) will be supplemented with a second round of interviews in August 2011

[4] More domestic interviews are planned throughout July and August 2011

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the destination. This was done to understand the socio-cultural differences between Australian and domestic snow tourists. Interviews lasted approximately 20 minutes.

3 Preliminary findings and discussion

We will now present and discuss the preliminary findings of this qualitative research, beginning with the mixed understandings of climate change by Australian participants, and their confusion over climate change, ozone depletion and earthquakes. Additionally the controversial carbon tax currently in discussion by the Australian government was raised by some participants, who saw it as an unnecessary top-down attempt to manipulate public behaviours. Although some participants felt they could 'see' and 'feel' the effects of climate change in Australia, few felt that climate change would have a significant impact on the Queenstown Lakes District of New Zealand, and thus would not implicate their intention for repeat visitation. Furthermore, while some participants recognised the issue of air travel to New Zealand for tourism purposes, no one had offset their travel carbon emissions, with the schemes generally treated with suspicion and perceived to be a 'feel-good' gesture rather than genuinely beneficial.

Motivations for travel to New Zealand by Australian snow tourists identified a wide variety of factors, which separated New Zealand from Northern Hemisphere snow tourism destinations, and domestic ski fields alike, with the many non-snow based activities available in the Queenstown Lakes District identified as central to the attractiveness of the region. While New Zealand domestic tourists tend to be more susceptible to current and forecast weather for their behavioural decision making, Australian tourists are more likely to be attracted by 'early bird' specials and the institutional requirements of early booking (cost incentives) as well as school holiday periods.

3.1 Perceptions of climate change

Of the Australian snow tourist participants, some confusion was displayed between climate change, ozone depletion, volcanoes and earthquakes, all significant issues to the Australasian region at the present time, and regularly covered in the media. These risks could be perceived as threats to their safety, and without real understandings of the issues involved, become mixed in the cognitive processing of risk perception. Two examples are provided by Australian B and Australian G who are representative of the participant's confusion and could be attributed to risk fatigue.

Australian B "I think someone mentioned, on the Milford Sound tour about how the weather is affecting like having earthquakes and things like that"

Australian G "I think it's scary, just with everything that's happening like all these disasters, natural disasters, there just seems to be more and more happening. I think its global changes."

Many Australian snow tourists stated that there was 'no proof' of climate change, with some questioning the science but distrust primarily lying with the politicisa-

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tion of climate change. This could be due to the current proposal of a carbon tax in Australia which has increased media discussion of climate change, and makes perceptions of climate change an increasingly political topic, with one participant stating, "They sensationalise it!" (Australian D). This could identify the mistrust felt towards the government's handling of the issue of climate change, with these actions thought to have alternative intentions. In addition, the anthropogenic nature of climate change was perceived by some participants to be inconsequential, with one participant stating, "Well they may or may not, but I think it's sort of irrelevant" (Australian F).

This could explain an ambivalent response to carbon offsetting for tourism travel from Australia to New Zealand. Most participants felt it was a 'feel good' or 'green washing' initiative with little real impact. Only one participant (Australian G) raised the dichotomy between flying to New Zealand for snow tourism purposes and carbon emissions when they stated, "But if we didn't pollute we wouldn't be here would we?" (Australian G).

3.2 Motivations for travel to Queenstown Lakes District ski fields

In addition to the above stated perceptions of climate change, participants felt that climate change wouldn't have a significant impact on the Queenstown Lakes District, or their intentions for repeat visitation. Although relative snow reliability (to Australia) was stated as a key attraction to New Zealand, many participants recognised that a Northern Hemisphere snow holiday was the best was to ensure good snow, and thus they didn't have the same expectations of a snow-based holiday in New Zealand.

Australian F, "Here (in QLD) there's a lot of ancillary things which you just don't get (in Australia), you get the mountains with snow, or hills with snow in Australia, but you don't get all the stuff you can do here. We've been here for 10 days without any snow and we've had a fantastic time doing a lot of stuff; archery, cannoning, hiking, you know, there's a lot of ancillary things which go with the environment which you don't get in Australia, you get skiing and that's it."

This view of the Queenstown Lakes District was repeated by all participants and felt by beginners and experts alike, thus suggesting that part of the attraction to the region for overseas tourists is the range of alternative activities offered in the region. When we consider this with relation to the potential manifestations of climate change, the broad base of non weather (or snow) dependant tourist attraction could reduce the vulnerability of the region to any changes.

Weather, both current and forecast, was identified as more important for domestic (New Zealand) tourists rather than Australian snow tourists who are restricted by costs associated with short term decision making, as well as institutional holidays. Many Australian participants had booked their holidays at the end of 2010 or beginning of 2011, therefore with no knowledge of the way the season would develop. The winter season of 2011 has been a later start than usually expected, with temperatures too high to utilise the artificial snow production mechanisms, and limited natural snowfall. This was not considered to prevent participants from returning in 2012, nor

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would these participants become more opportunistic, however they did suggest that they would book for late July when they felt there would be more likeliness of snow.

Pickering et al (2010)'s research with Australian tourists (conducted in Australia) suggested that skiers have become less likely to go overseas in poor domestic seasons, finding that, "low snow years in Australia may not result in a large increase in Australians skiing in New Zealand or Japanese resorts." (p. 146) Our research finds that motivations for travelling to New Zealand and the Northern Hemisphere for snow tourism are quite different, and therefore Southern and Northern Hemisphere destinations need to be discussed in isolation. Motivations for New Zealand ski fields could be more pull-factors of the resorts, the 'Alpine Experience', the non-snow attractions, relative cost, and relative reliability of snow, rather than push factor of low natural Australian snow.

We found that the 'backyard hypothesis' (Hamilton et al. 2007) is more relevant to domestic snow tourism than Australian tourists, for whom part of the appeal was the contrast from their home temperatures, particularly those originating from Queensland. Domestic tourists on the other hand were motivated by the weather conditions in their hometowns, specifically to signify that winter had arrived.

4 Conclusion

In conclusion, climate science has identified some potential changes to New Zealand's natural snow availability under scenarios of climate change. This could have implications for snow tourism activities, none less than commercial ski fields. The Queenstown Lakes District of New Zealand has a particular interest in these changes due to its socio-economic reliance on winter recreation activities specifically snow tourism. Australian tourists have become a significant market for the region, helped by increasing direct flights (to Queenstown International Airport), relative costs, and marketing campaigns by the region. The behaviour of Australian tourists under climate change scenarios is a topic of much speculation, and our research adds to this body of knowledge by complementing Australia-based surveying (see: König 1998; Pickering et al. 2010) with the voices of Australian tourists in New Zealand.

Preliminary findings suggest that motivations for Australian snow-tourists go beyond weather and snow availability, extending to the range of alternative non-snow based activities which they can do at the destination. Under scenarios of less reliable natural snowfall or warmer temperatures limiting artificial snowmaking, these activities diversify the offering to international tourists and are of increasing importance. The Northern Hemisphere was identified as the preferred destination for snow reliability, and this could pose the most substantial threat to the Queenstown Lakes District if they do not continue to encourage this diversity of winter activities.

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