

## Clouds of Ash

### **Climate change and ecotourism in the Tasmanian Wilderness World Heritage region**

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#### Introduction

Few regions in Australia have shown a more direct correlation between nature conservation, World Heritage listing and economic opportunities than Tasmania. A very eloquent case of the impact the World heritage regime has had on the socio-economic development of the State is found on the West Coast. Until 1982, the year in which the long standing battle for the protection of the Western wilderness of the State culminated in the creation of the Tasmanian Wilderness World Heritage area (Hall 1991), Tasmania's West Coast was simply the land of mining and wilderness (Blainey 1993). Tourism was not a significant factor in the region's economic and social life. People would indeed visit the West Coast, but in low numbers and attracted mainly by the region's mining heritage and by features like the barren hills of Queenstown. It is interesting to note that in 1976, at a symposium held in Queenstown on the topic "Landscape and Man", a shared view was expressed according to which tourism would not be able to constitute, in the near future, a viable economic alternative to mining. In addition, the figures from the Tasmanian Tourism authority which accompanied this analysis showed that 59% of visitation would occur in the region's capital, the township of Queenstown, with the odd mining landscape – evocatively known as the moonscape – being the main attraction. Queenstown would also offer the great majority of the area's accommodation and services for visitors (Smith 1977).

But the year 1982 was a pivotal moment for the West Coast. The World Heritage listing of a vast area encompassing some of the best wilderness of Tasmania put an end to the bitter confrontation between environmentalists and the natural resource industry (Kellow 1989). The much contested project to dam the Franklin River – hailed in the conservationists' mythology as Tasmania's last wild river (MCQueen 1983; Dombrovsky 1983) – was halted in a move by the newly elected Federal Government which changed Australia's constitutional balance of power (Hall 1991). Until then, matters relating to environmental conservation and natural resources exploitation had been the prerogative of States. But the introduction of the World Heritage Convention, a global regime born in the frame of UNESCO allowed the Federal Government to interfere in such matters, advocating the external affairs power to which it was constitutionally entitled (Boer 1992). The wild river had been saved. But much more was about to change as an outcome of the World Heritage listing.

The most dramatic moments of the confrontation between environmental activists and industry contractors took place in the tiny port of Strahan (Wilderness Society 1983), the only major settlement of the West Coast of Tasmania. The activists that staged the Franklin blockade gathered there and the media followed. The township had served for decades as the shipping port for the copper from the Mt

Lyell mine in Queenstown. At the beginning of the 1980's, the fortunes of mining in the region were plummeting. Economic turbulence at the global level and falling commodity prices were shaking the foundations of the settlements of the West Coast, which relied on mining for their survival. The region had seen entire towns boom and decline following the fate of mining. Ghost settlements – like Linda and Gormanston near Queenstown, or the port of Pillinger on Kelly Basin – dotted the landscape, as reminders of the volatility of the European colonization of the Western Wilderness. But the events surrounding the Franklin Dam controversy would not only put the remote West Coast on the spotlight. They would in fact change the fate of Strahan dramatically.

A successful combination of strong media attention, picturesque setting and an emotionally charged iconography gave a big boost to the chances of Strahan to survive the mining decline. They provided the township with an asset on which to build a long-term, sustainable socio-economic development: ecotourism. The port on Macquarie Harbor became the hotspot to which wilderness enthusiasts would start to flock in search of the icons of the Tasmanian Wilderness World Heritage Area. The fast rise of ecotourism (Fennel 2003), as a promising subsector of the world's biggest industry paid its dividends also on the West Coast. Strahan managed to position itself as the popular gateway to the wilderness of the West. The Gordon River, with its famous tannin-stained waters and enchanting primeval rainforest, became Strahan's new goldmine. The clever intuition of a Tasmanian tourism corporation – Federal Hotels – seized the opportunity created by the World Heritage saga, and established a flourishing business in Strahan. A synergy between the government, the academia and the private capital generated assets like the Visitors' Centre, an innovative structure with a bold vision and an inspired philosophy (Fallon and Kriwoeken 2002).

And these factors all together made the West Coast into one of Tasmania's premier tourism destinations. A destination which according to the figures released by the Visitor Survey of Tourism Tasmania attracts over 200.000 tourists each year (Tourism Tasmania 2007). And for a region with a scattered population of no more than 5.000 (West Coast Council 2008) and a history dominated by a single industry – mining – this figure is quite extraordinary *per se*. From a rough and remote frontier, the West Coast has turned into one of Australia's most sophisticated wilderness eldorados. And the overarching element that explains this boom is the World Heritage brand (Rimini 2008), which here more than anywhere else has proven its potential to be a tool of sustainable development.

#### The Tasmanian Wilderness World Heritage Area: an overview

If one looks for a synonymous of wilderness, the West of Tasmania is a perfect candidate for the job (State of the Environment 2003). The region included in the Tasmanian Wilderness World Heritage Area covers an area of 1.38 million hectares, or 20% of Tasmania, and it encompasses one of the world's last temperate wilderness areas (Parks and Wildlife Service 1999). In fact, almost the entire area within the World Heritage nomination qualifies as wilderness according to the strictest definitions of it (Lesslie and Maslen 1995), and it contains over 95% of Tasmania's high quality wilderness. The TWWHA, which has been inscribed as both a natural and cultural property in 1982 and enlarged in 1989 (World Heritage Centre 2008), is extraordinary in that it is only one of two World Heritage regions in the world to fulfill 7 of the 10 criteria set out by the UNESCO to identify the outstanding universal value which a site must

possess in order to make it on the prestigious list. Another important feature of the site is that it is a contiguous stretch of national parks, which represent the bulk of the nomination: South-West National Park, Franklin-Gordon Wild Rivers National Parks, Cradle Mountain-Lake St Clair National Park, Walls of Jerusalem National Park and Hartz Mountain National Park, plus several conservation areas and other reserves.

About one third of the area is covered in native forests. Temperate rainforests predominant, together with wet eucalypt forests which harbor some rare stands of *Eucalyptus regnans*, the world's tallest flowering tree, are predominant and contain some of the State's most iconic endemic species. Indeed, a high percentage of endemism characterizes the forests of the TWHHA, with myrtle, King Billy Pine, Huon pine, blackwood, sassafras and endemic species of eucalypts being the distinctive species of the local flora.

The key feature of the World Heritage in terms of its tourism assets is the iconic value of the landscapes (Buckley 2002; Tisdell and Wilson 2002). The most well-known icons of Tasmania's natural environment are situated within the boundaries of the World Heritage. Among them Cradle Mountains, Lake St Clair, the Franklin and the Gordon River, as well as the peaks and the solitude of the Southwestern wilderness. The alpine character of much of the region is a unique feature which makes the TWHHA a very special place on the map of Australia's World Heritage areas. But it is also a key weakness of the region, when it comes to the potential effects of climatic changes.

#### Climate Change and the World Heritage Convention

The UNESCO started to look at possible impacts of climate change on the values of its World Heritage properties only recently. In 2006 a conference on climate change and the World Heritage Convention was held in Paris, as a first assessment of the challenges that global warming poses to the effective conservation of the properties inscribed in the List. The policy adopted by the UNESCO to avert the threat posed by climatic changes focuses on both adaptation and mitigation strategies (World Heritage Centre 2007). It is clear though that the uncertainty of climate change predictions and projections, as well as the severity of the more extreme scenarios, make it particularly difficult to forecast to what extent World Heritage properties might be affected by the phenomenon. In particular, several crucial factors must be taken into consideration when evaluating the consequences of climatic changes on the viability of protected areas:

The size of the area – bigger and contiguous reserves have a better chance to adapt to climatic changes because of their higher resilience;

The type of ecosystem – modified rainfall patterns and fire regimes have the potential to impact on particular types of ecosystems in a more severe way than others;

The outstanding universal value for which the property has been declared a World Heritage – climate change may affect the site's OUV directly, or only indirectly.

The most challenging aspect of countering climate change impacts on World Heritage properties has probably to do particularly with the last factor mentioned above. According to the scenario that is taken into consideration – from the milder to the more extreme – the outstanding universal value of a World Heritage property may be exponentially affected. This is the heart of the question of how climatic changes may ultimately damage ecotourism in and around World Heritage areas. Two hypotheses are worth mentioning. One is a mid impact scenario: different climate patterns would have visible impacts on a given World Heritage area, and might take different forms such as increased fire regimes and loss of crucial vegetation and consequently of aesthetic values, or loss of emblematic species, all of which can impact on the tourism value of the region but in a way that is not catastrophic; and an extreme scenario, in which it is the outstanding universal value of the World Heritage property to be directly affected by climate change. A site that is inscribed in the World Heritage list must fulfill at least one of 10 criteria which identify the outstanding universal value. Of these criteria, 4 identify natural heritage and 6 cultural heritage properties (UNESCO 2005). It is possible that climate change might damage a particular feature which was the main reason for the inclusion of the site in the World Heritage list. A clear-cut example might be a glacier which melts due to increased temperatures, or the threat of coral bleaching for coral reefs, which in extreme case scenarios could simply destroy the object of the World Heritage nomination. The Convention is considering the options, in case of an irreparable damage to the outstanding universal value of a property. One of the outcomes – and the most extreme – might be the cancellation of the site from the World Heritage list, in case the OUV were completely lost.

This represents a far greater threat to the tourism value of the region, because it can act as a “multiplying effect”. If ecotourism can suffer from minor or mild damages to the natural values of the area, in case of loss of its outstanding universal value as interpreted by the Convention, and of consequent removal from the World Heritage List, the impact on tourism might be exponential, because the site would be deprived of a “brand” that in some cases has proven to be an extraordinary asset of the region in terms of tourism attractiveness.

The case of Tasmania is particularly interesting in this respect. In relation to the issues and threats that have been highlighted, Tasmania possesses both strengths and weaknesses. One of its strengths is represented by the sheer number of criteria – and therefore of value – which it fulfills with regard to the inscription on the World heritage List. It is extremely unlikely that the site would lose its outstanding universal value as it has been recognized by the UNESCO at the time of its inscription. Another asset that the Tasmanian Wilderness World Heritage site possesses in the face of potential climatic changes is that at least part of its iconic value is associated with features that are unlikely to be heavily impacted – such as the mountain landscape of Cradle Mountain for example, and the absolute wilderness character of much of its territory.

On the other hand though, the ecosystems and landscapes of the TWHHA are particularly fragile and vulnerable to the potential effects of substantial climatic changes. Its alpine vegetation is extremely susceptible to temperature variations, and most of its flora – from temperate rainforests to alpine vegetation – can be irreparably damaged by modified fire patterns (Parks and Wildlife Service 2004). In contrast to the eucalypt dominated ecosystems that are predominant in Australia, Tasmania’s West is the habitat of plants species that are not fire prone and that require a long time to regenerate from fires

– if they regenerate at all. Thus, fire patterns and temperature changes are the two biggest threats to the values of the Tasmanian Wilderness World Heritage area that can arise in a climate change scenario. In order to understand the likelihood of such outcomes and their potential impact on the tourism potential of the region, it is necessary to review the conclusions of the studies that have been carried out about the form and severity of climatic change impacts in Tasmania.

### Climate predictions for Tasmania

The most extensive and up-to-date study of potential climate change scenarios for Tasmania has been completed in 2006 by CSIRO in conjunction with Hydro Tasmania and the University of Tasmania (McInnes, Bathos, Page, Suppiah and Whetton 2004). The background to it is the Third Assessment Report by IPCC, released in 2001 (Hughes 2003). The latter concludes that the overall effects of climate change in the Southern Hemisphere will be moderated by the oceanic masses surrounding it. As a result, expected climatic changes are milder in the Southern Hemisphere than the general worldwide predictions.

The main element that characterizes assessments of climate change in the Southern Hemisphere and in Tasmania in particular is uncertainty. Different models tend to suggest different outcomes – and sometimes even opposite ones. The only certainty is that temperature will indeed increase in Tasmania, although less pronouncedly than in the rest of the country.

In the South-West of the State, which comprises the biggest proportion of the World Heritage area, the increase in temperatures is predicted to be in the lower scale, with increases between .02 C to 1.2 C by 2030 and 0.6 to 3.6 by 2070, according to the model that is used. The increase in temperatures would be associated to a higher frequency of hot days above 30 C in Summer, while the number of days below zero would decrease.

If we take as an example the Lake St Clair area, which is currently a hotspot of ecotourism, the projections indicate that from an average of 60 days below zero at present, there will be a reduction to 29-47 days below zero by 2030 and a further decrease to 7-39 such days in 2070. As for hot days above 30 C, the increase would be from 1 at present to 1-2 by 2030 and to 1-5 by 2070. Extreme heat events like days above 35 C should not increase in the Lake St Clair area, according to the models (McIntosh, Pook, McGregor 2005).

Rainfall patterns will change too, with higher rainfall in the West and in the Centre of the State and an increase in extreme rainfall events.

Drought events are difficult to predict, according to the models. The projected increase in rainfall patterns would suggest a corresponding decrease in drought periods, although if the expected change in evaporation patterns is taken into account, these effects might be offset by it.

### Ecotourism and climate change impacts in the TWWHA region

The predictions of climate change impacts in Tasmania and in its World Heritage area suggest a mix of optimism and concern. On one hand, as already highlighted, the overall significance of the Tasmanian

Wilderness as a World Heritage area should not be affected. The outstanding universal value of the property is made up of different components and is particularly strong because of its many facets. On the other hand, increased temperatures, modified fire patterns and hot dry weather have the potential to damage the vulnerable vegetation that constitutes a crucial feature of the region's tourism appeal. The World Heritage area is a treasure trove of some of Tasmania's most iconic plants. It contains 42% of all King Billy forests, 73% of the rare and rather famous Huon Pine forest, and 70% of deciduous beech communities. Some of these communities have already been hit by what is suspected to be the effect of climatic changes. In the report on the management effectiveness of the TWWHA, released in 2004, climate change is mentioned as the possible cause of the severe degradation of the King Billy Pine communities within the World Heritage area, which a third of them being destroyed by fire. Similarly, many communities of pencil pine, chestnut pine and myrtle beech have been hit by abnormal plant diseases over the period 1991-1999, and the pencil pines communities have not regenerated. Again, climate change is one of the main suspects (Parks and Wildlife Service 2004).

The Tasmanian rainforest is extremely fire sensitive and if hot dry weather became more frequent and intense they could suffer potentially serious losses. Last summer, a disaster which occurred in the Tarkine - a rainforest region in North-West of the State, which is not directly part of the World Heritage area but which is recognized as having World Heritage value and is the focus of ambitious plans for tourism development – demonstrated the fragility of Tasmania's most prized landscapes. Over 18,000 hectares of forest and buttongrass burned for several days, and the flames almost reached the township of Corinna, a gateway to the Tarkine. Although the fire was not natural but had been deliberately lit by a motorist on the Western Explorer road, the intensity of it and the extent of vegetation loss were caused by the unusually hot, dry season. Such occurrence is a warning that businesses and communities are much more vulnerable to the climate than they are often aware.

Another important feature of the World Heritage area is its Eucalypt forest and woodland, which covers 401,000 hectares and of which more than two-thirds is old-growth forest. Between 1992 and 1999 a significant dieback of eucalypts was observed, particularly in tourism sensitive areas such as the entrance to Cradle Mountain, which is the single most popular destination within the World Heritage region. Climate change, together with the age of the community, is the main cause that the report indicates (Parks and Wildlife Service 2004).

In terms of predicted impacts of climate change on the natural values of the Tasmanian Wilderness World Heritage area, the most significant threats identified by the report on the area's management effectiveness are the loss of the alpine environment and the associated endemic species and the increased coastal erosion due to rising sea levels, which might damage or destroy important cultural heritage such as Aboriginal midden sites.

### Conclusions

Wilderness conservation and the World Heritage brand have changed the face of Tasmania's West Coast (Rimini 2008). Since 1982, when the Tasmanian Wilderness World Heritage area was created, ecotourism has quickly established itself as a powerful socio-economic drive, and a success story. From a

remote outpost and an unforgiving frontier, the West Coast of Tasmania has turned into one of Australia's premier wilderness tourism regions, associated with world-class icons such as Cradle Mountain, the Gordon and the Franklin River and the South West wilderness. Strahan has been recognized as a gateway to pristine rainforests, primeval landscapes and scenic landscapes, and it has thrived thanks to a partnership between the public and the private sector, entrepreneurship and knowledge.

Yet, the assets on which the fortunes of ecotourism have been built and continue to expand on Tasmania's West Coast are fragile, and particularly vulnerable to the effects of climatic changes. Some of the most outstanding features of the World Heritage band in Tasmania – the Gondwana rainforest with their endemic species, the tall trees and the unique alpine environment – might suffer from combined effects of modified fire and rainfall patterns, temperature changes and sea level rise. The result could be a minor degradation of the iconic landscapes that constitute the drawcard of the Western wilderness, but it could also entail a major loss of natural and aesthetic values.

The uncertainty of climate change models should be no excuse for inaction. The World Heritage Convention has already indicated that adaptation and mitigation politics might be an effective antidote to some of the worst outcomes of global warming. It is in the interest of the industry to be aware of the potential damage that climate change can inflict on the natural assets on which entire communities rely for their welfare and prosperity, and to adopt the best practices that can counter such threats. Sustainable planning and ecological awareness should be embedded in any ecotourism strategy and venture, and where possible the industry should contribute with partnerships, sponsorships and knowledge to the current research on the effects of climate change and the measures to mitigate them, and to adapt.

The conservation of crucial ecosystems and iconic landscapes in the Tasmanian Wilderness World Heritage area has already paid off. So far, ecotourism has benefited from it, but also consolidated it by demonstrating that nature conservation and sustainable development can really go hand in hand, and they can create jobs, hope, and long term prosperity. It is now time to move one step forward in appreciating the value and the fragility of our natural assets, by tackling the issue of the century. Now it is only a cloud, looming in the distant horizon. But the outstanding natural heritage contained in the Tasmanian World Heritage region needs all the stakeholders to take special care of it, because it is especially vulnerable. Before the distant cloud becomes heavy with the ashes of a unique heritage, going up in smoke.

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