Kati-Thanda Lake Eyre Economic Analysis

Prepared on behalf of Regional Development Australia Far North and The Outback Communities Authority

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It has been prepared on behalf of Regional Development Australia Far North and The Outback Communities Authority







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Executive Summary

This report provides the findings of an economic analysis of the impacts and opportunities of water events at Kati-Thanda Lake Eyre and future events (wet and dry) with a view to getting a more defined response to capitalising on those impacts and opportunities in the future. It provides data to inform a better understanding of the current and potential future economic value of the lake. It identifies opportunities for capturing that increased future value as well as infrastructure pressure points, which will need to be addressed in order to ensure that opportunities for economic development resulting from visitation can be capitalised upon for the benefit of the local communities and the wider Outback region.

Kati-Thanda Lake Eyre is a mostly dry salt lake in the northern part of the South Australia, located 647 kilometres north of Adelaide. On the rare occasions that it fills, it is the largest lake in Australia, covering 9,500 square kilometres, making it a nationally and internationally-recognised tourism attraction. Kati-Thanda Lake Eyre is an iconic Outback visitor destination and is a centrepiece of South Australia's Flinders Ranges and Outback region.

Key appealing experiences in the Flinders Ranges and Outback include scenic flights and drive tours. Holiday makers are 'grey nomads' in the majority, travelling in 4WDs with caravans or in campervans. Bus tours and 4WD group tours are also popular. Accommodation in towns in the region consists of hotels, motels, B&Bs and caravan parks and this is supplemented by what is described as 'property camping'.

The seasonality of visitation to the Flinders Ranges and Outback region is reflected in accommodation occupancy rates. The peak of the year is the winter months and visitation drops away markedly due to fewer holiday makers in the hot months. In the past ten years, the trend in the number of visitors has been on an upward trajectory paralleling the trend for South Australia as a whole. Media coverage is a key factor driving visitation too Kati-Thanda Lake Eyre and when a water event (of even a relatively small magnitude) is widely reported, there is a significant uplift in visitation to Kati-Thanda Lake Eyre and surrounds.

Towns as far away as Peterborough (500 kilometres south of the lake) report that travellers heading north stop over and some stay overnight. In the busier autumn / winter/ spring period, occupancy rates in hotels, motels, B&Bs and caravan parks are at around 70% to 80%. When there is water in the lake, they are full. The uplift in visitation is estimated to be in the order of 30% to 40% when there is water in Lake Eyre, although some report that the uplift can be somewhat 'volatile'.

Data sourced from the South Australia Tourism Commission and Tourism Research Australia shows that holidaymakers in the Outback generate 619,590 visits per annum. A conservatively estimated 25% uptick in holiday visitation to the 'northern parts' of the Flinders Ranges and Outback region, that is, the area which equates to the Outback Communities Authority Region, equates to 46,345 visits per annum and the additional spend associated with this of \$19.5 million per annum.

With a conservatively estimated \$19.5 million per annum increase in visitor spending associated with a water event in Lake Eyre, there will be implications for the regional economy. These effects have been modelled using REMPLAN Economy (an Input - Output model of the Outback region). From a direct increase of \$19.5 million, the Outback's total industry value-added would increase by up to \$10.8 million and, after accounting for all direct, supply-chain and consumption-induced effects, this uplift would generate 119 jobs in the region.

According to REMPLAN, the Outback region is home to 3,137 jobs. Of those, a total of 1,107 local jobs are in tourism-related industries or industries that have supply chain links to tourism including the accommodation and food services sector, retail trade, agriculture, rental hiring and real estate services, transport, postal and warehousing, arts and recreation services and other service sectors. The creation of 119 jobs resulting from a visitation uplift generated by a water event at Kati-Thanda Lake Eyre, is therefore a significant contribution (10.7%) to total employment in the Outback.

This is the estimated impact of water events in the current landscape. If investments were made in what can be described as the critical 'enablers of a vibrant visitor economy', that is, the infrastructure and facilities, management and information services and governance arrangements required to manage and promote tourism, a target increase in visitation and associated expenditure above and beyond that generated by water events currently, could be expected. For example, it has been demonstrated in other studies that recent commitments to major infrastructure investments such as upgrades to the Strzelecki Track, will serve to enhance the Outback's capacity to accommodate an uplift in tourist numbers throughout the region.

Even if a conservative 'stretch target' increase of 12.5% above and beyond the currently estimated uplift in visitation was realised (that is, half of the current uplift again), then further economic benefits could be realised in the order of \$5 million in industry value-added (for a total of around \$16 million) and another 60 jobs (for a total of around 180 jobs in the Outback region).

There are a number of identified challenges and opportunities which together, have a bearing on the Outback's capacity to attract and retain visitors, to encourage economic growth and development in the communities around Kati-Thanda Lake Eyre and the wider Outback region. The main capacity constraints are related to accommodation of various types, including new types such as glamping, eco-lodges and property stays, infrastructure (namely roads and airstrip / aerodrome capacity), facilities / amenities, wayfinding and levels of service. If these identified challenges and opportunities can be addressed in a collaborative fashion, there is significant scope to grow the capacity of Kati-Thanda Lake Eyre and surrounding communities into a central component of a vibrant Outback visitor economy. This requires the establishment of a process to confirm the priorities that need to be addressed.

Without undertaking an exhaustive assessment and analysis of the identified challenges and opportunities, it is considered that, subject to further strategic investigation, the following initiatives be pursued by the Outback Communities Authority, RDA Far North, Flinders Ranges and Outback SA Tourism and other local and regional stakeholders as short-term priority initiatives:

- 1. Prepare a short-term *Kati-Thanda Lake Eyre Water Event Response Plan*, which allows for a coordinated and collaborative approach to flooding events to be taken advantage of when they occur. As demonstrated by the economic analysis presented in this report, this has the potential to benefit local businesses and communities with significant economic flow-ons throughout the rest of the Outback region and beyond.
- Undertake further investigations and, subject to stakeholder consensus, prepare economic needs analyses and / or business cases for investment in critical enabling infrastructure to support visitation to Kati-Thanda Lake Eyre. This includes, for example, visitor accommodation, amenities/facilities, signage, road connections and airstrip / aerodrome capacity.
- 3. Commission the preparation of a *Kati-Thanda Lake Eyre & Outback Destination Management Plan* to establish a strategic, informed and coordinated approach to the infrastructure and facilities, management and information services and governance arrangements required to manage and promote tourism in and around Kati-Thanda Lake Eyre as a catalyst Outback visitor attraction.

In progressing these priorities, cultivating collaborative partnerships will be key. To this end, the findings of this economic analysis should be used to inform and guide RDA Far North, the OCA and their partner stakeholders to drive a strategic approach to advocacy, promotion and facilitation of identified needs and opportunities for investment in the Outback visitor economy.

Approaching both the challenges and opportunities for investment in tourism support infrastructure, services and facilities in and around Kati-Thanda Lake Eyre in a coordinated and sustainable fashion will be the key to supporting long-term growth. Using the evidence presented in this report, a strategic, informed and targeted approach will support stakeholders' engagement with both State and Federal Governments on matters of significance.

1. Introduction

1.1 Project Background

Regional Development Australia Far North (RDA Far North) and The Outback Communities Authority (OCA) commissioned SC Lennon & Associates to undertake this economic analysis and assessment of Kati-Thanda Lake Eyre. The need for the economic analysis was resolved following on-going collaborative discussions held between representatives of key agencies including the Tourism Industry Council South Australia, the OCA and RDA Far North and Flinders Ranges and Outback SA Tourism (FRO). These discussions focused on the economic, social and environmental impacts as well as the opportunities that having water in Kati-Thanda Lake Eyre provides.

The flooding of the lake creates a significant tourism attraction, drawing thousands of visitors over the duration of its fill. Anecdotal evidence suggests that tourism operators in Marree and William Creek, along with the scenic flight sector have a 'good season' on the back of the water in the lake. Communities along the transport corridor to the lake also benefit from the increase in visitation as do tour companies offering flights from major cities across Australia.

The lake is an amazing sight when dry, and even more so when there is water. Whilst this brings enormous benefit to businesses in the two closest communities to the lake - Marree and William Creek - it also adds significant challenges in the form of the pressure it places on services, both in those communities and the broader Outback region.

1.2 Project Rationale

With the extraordinary influx of visitors the lake attracts, there is a need to understand the economic stocks and flows, challenges and opportunities which will assist governments, industry, community and other key stakeholders to meet future requirements without significant disruption and to further gain from opportunities as presented.

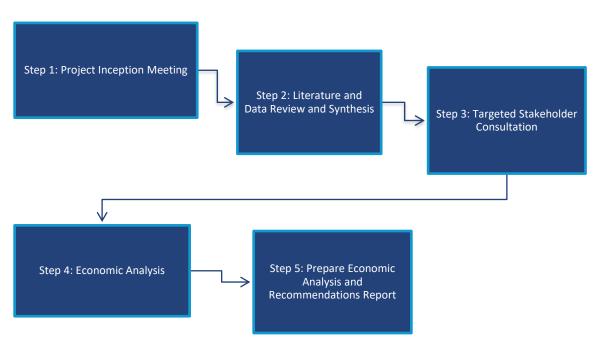
Whilst individual businesses need to undertake their own strategies to fulfil their needs and maintain an advantage over their competitors, the sheer scale of increased visitors in and around the townships and region and the risk of adverse impacts to the local community as well as existing economic sectors requires the development of an overall response to meeting future demand.

1.3 Project Scope and Method

This report provides the findings of an analysis of the impacts and opportunities of water events at Kati-Thanda Lake Eyre and future events (wet and dry) with a view to getting a more defined response to capitalising on those impacts and opportunities in the future. The objective is to provide all stakeholders data which informs a better understanding of the current and potential future economic value of the lake, opportunities for capturing that increased future value and infrastructure pressure points which will need to be addressed in order to ensure that opportunities for economic development resulting from visitation at the lake can be capitalised upon for the benefit of the local communities and the wider Outback region.

The method employed to undertake the economic analysis is shown below.

Figure 1. Study Method



Informed by targeted consultation and engagement with key government agencies, industry bodies and community stakeholders, this report provides a detailed analysis of the economic value of the lake, both dry and flooding events, to inform:

- Recommendations for addressing identified economic opportunities and the key stakeholders who would be most appropriately placed to drive or support specific strategies;
- Recommendations to guide governments, industry and the community in meeting the demands of future water events, ensuring flow-on economic impacts and any unintended consequences are managed ahead of time so that the positive benefits of this significant economic opportunity can be maximised;
- A better understanding of the townships and surrounding region's capacity and capabilities to meet demand;
- Stakeholders' collaborative efforts in lobbying to address identified opportunities and challenges / shortfalls; and
- Likely resource requirements including infrastructure projects and potential resourcing avenues.

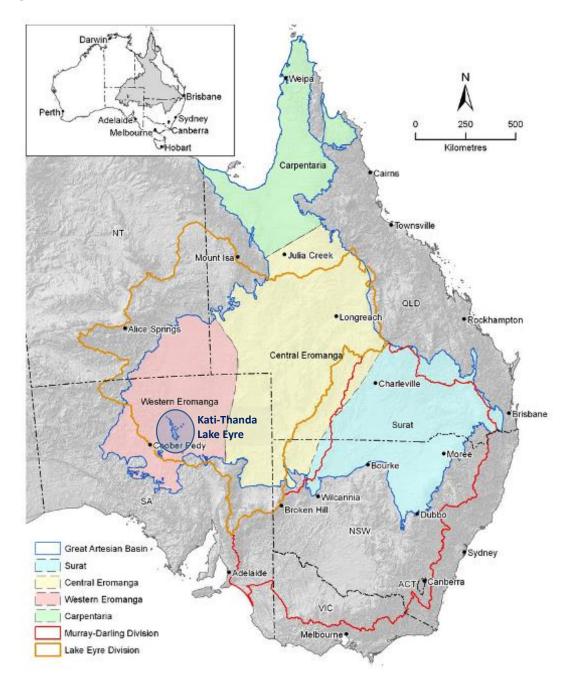
The Kati-Thanda Lake Eyre Economic Analysis provides important strategic information which, if used effectively, will help to enable the townships, wider region and governments to cater for growth in visitation in an effective and sufficient way. In this way, it informs a defined response to capitalising on impacts and opportunities in the future.

2. Water Events at Kati-Thanda Lake Eyre in Context

2.1 Context - The Great Artesian Basin

Kati-Thanda Lake Eyre sits within the southern reaches of the Great Artesian Basin, as illustrated below.

Figure 2. The Great Artesian Basin



Source: Smerdon et al (2012) cited in the Great Artesian Basin Strategic Management Plan

According to the Great Artesian Basin Strategic Management Plan¹ the Great Artesian Basin is one of the largest underground freshwater resources in the world. It underlies approximately 22% of Australia – an area of over 1.7 million square kilometres beneath arid and semi-arid parts of Queensland, New South Wales, South Australia and the Northern Territory. Approximately 70% of the Basin lies within Queensland.

The Great Artesian Basin is a highly valued water resource which provides diverse benefits and opportunities. Basin springs have enabled Aboriginal and Torres Strait Islander people to occupy dry inland areas of Australia for more than 40,000 years, and communities maintain cultural, social and spiritual connections with Basin springs and their associated ecological communities and landscapes.

The provision of drinking water through domestic bores and town water supply has been essential to the development of regions within the Basin and is used in more than 120 towns and settlements. The estimated consumptive use of Basin water supports about \$13 billion of production annually, including \$4 billion in stock, \$6 billion in mining, \$2 billion in gas and \$1 billion from tourism. The use of Basin water adds economic value to regional resources (land and minerals) and underpins economic activity and employment across the region.

Significant public and private funds have been spent on developing and protecting the Basin water resource to support its economic, social and environmental values. On-farm investment has been significant with a total of 50,475 bores in the Basin. Although the vast majority of these bores are less than 200 metres deep, more than a thousand bores are deeper than 1,200 metres.

In some areas, artesian water is used in mineral spas and tourists are attracted by the cultural and natural history of springs that are developed as visitor sites. Tourist developments across the Basin rely on artesian water pressure being maintained.

This Great Artesian Basin Strategic Management Plan provides a framework to guide the actions of governments, Aboriginal and Torres Strait Islanders, water users and other interests in their endeavours to achieve economic, environmental, cultural and social outcomes for the Great Artesian Basin and its users. Implementation of the Plan will assist all parties to identify and respond to the risks, issues, challenges and opportunities associated with use of Basin water.

2.2 Location

Kati-Thanda Lake Eyre is a mostly dry salt lake in the northern part of the South Australia, located 647 kilometres north of Adelaide. On the rare occasions that it fills, it is the largest lake in Australia, covering 9,500 square kilometres, making it a nationally and internationally-recognised tourism attraction.

Kati-Thanda Lake Eyre is a very special place for the Arabana and the Dieri People. Aboriginal people have been living around the lake for thousands of years, and it plays a central role in many of their stories and songs. As an important cultural site, Traditional Owners are involved in the lake's management.

During the northern monsoon season, rivers from the north-east part of the Lake Eyre Basin in outback Queensland flow towards the lake through the Channel Country. The amount of water from the monsoon determines whether water will reach the lake and, if it does, how deep the lake will get.

¹ The Great Artesian Basin Strategic Management Plan has been prepared by the Australian, New South Wales, Queensland, South Australian and Northern Territory governments in consultation with the Great Artesian Basin Coordinating Committee.

When there's water in the lake, waterbirds descend in the thousands, including pelicans, silver gulls, red-necked avocets, banded stilts and gull-billed terns. Fish, such as the Lake Eyre Basin sub-species of golden perch and various small hardyhead species confined in dry times to a few permanent waterholes, ride the floods across the basin. The lake becomes a breeding site, teeming with species that are tolerant of salinity.



Figure 3. Kati Thanda Lake Eyre Location



2.3 Accessing the Lake

It is reported that accessing Lake Eyre to see water from the land is problematic. Access to Hallagan Bay Point is via a rough 4WD track from William Creek (see Figure 4). A permit is required which can be obtained online or directly from the William Creek Hotel. A desert pass can also be used. Water may still not be visible and driving on the salt flats is prohibited. Access to Level Post Bay has similar issues with even more limited opportunities to view water, as the southern reaches fill less frequently. Even when inundated, the south end of the Lake is 'salty' and does not attract significant numbers of birds. Lake Eyre Sailing Club provides updates on water status http://www.lakeeyreyc.com/Status/latest.html.

Viewing the dry lake and camping on its shores is still an attractive proposition for many, but by far the most appealing experience is to view the water and the birdlife from the air. Air tours are busy even in dry periods but are very busy when there are water events. There are no major constraints on air tour operations associated with airport facilities, except there are runway restrictions on larger planes flying in. Air tours operate best from close to the lake to minimise travel times.

A significant number of Flinders Ranges visitors take an air flight from Wilpena Pound to view the lake. Others fly from William Creek. According to local operators, 'high-end' travellers will fly from Adelaide into Olympic Dam to the south and to Coober Pedy to the west, from where they will take a scenic flight over Lake Eyre. Other high-end travellers will fly over the lake from Birdsville to the north. The large majority of scenic flight tourists are domestic travellers, many of whom are 'baby boomers' and who are travelling independently of organised tours.

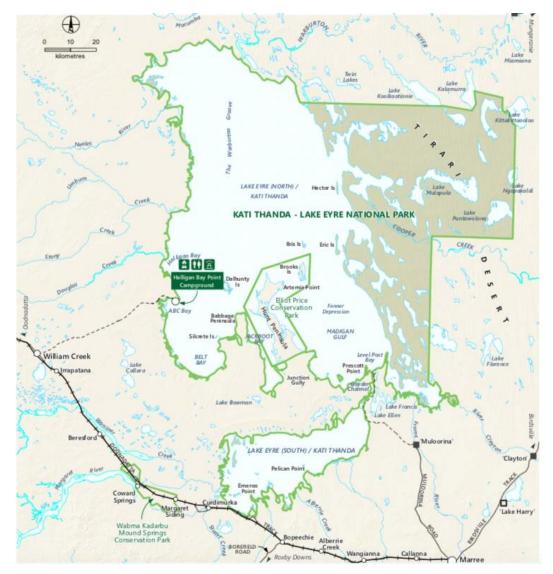


Figure 4. Kati-Thanda Lake Eyre Access Points

Source: http://traveloutbackaustralia.com/outback-destinations/lake-eyre-national-park.html

2.4 The Historical Record of Water Events at Kati-Thanda Lake Eyre

As stated above, during the northern monsoon season, rivers from the north-east part of the Lake Eyre Basin in outback Queensland flow towards the lake through the Channel Country. The amount of water from the monsoon determines whether water will reach the lake and, if it does, how deep the lake will get.

Typically a 1.5-metre flood occurs every three years, a 4-metre flood every decade, and a fill or near fill occurs a few times a century. Since 1885, this has occurred in 1886–1887, 1889–1890, 1916–1917, 1950, 1955, 1974–1977, and 1999–2001, with the highest flood of 6 metres recorded in 1974. Local rain can also fill the lake to 3 to 4 metres, as occurred in 1984 and 1989. According to local operators, anything more than 1.5 metres of water in Lake Eyre makes it commercially viable for tour operators.

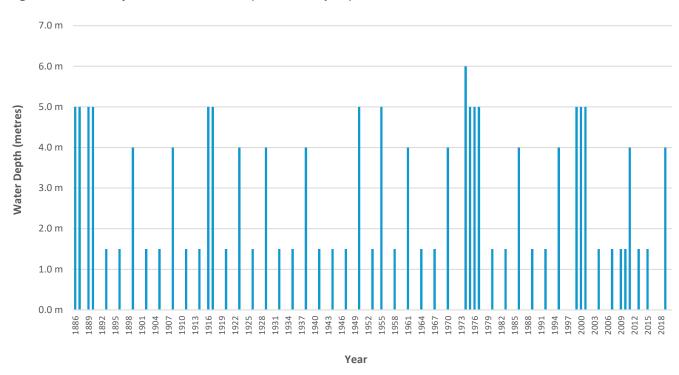
Most recently, Kati-Thanda Lake Eyre has experienced water events as follows:

- 2007 Torrential rain took about six weeks to reach the lake but only placed a small amount of water into it.
- 2009 Flooding saw the lake peak at 1.5 metres deep in late May, which is a quarter of its maximum recorded depth of 6 metres.
- 2010 High rainfall in summer sent flood water into the Diamantina, Georgina and Cooper Creek catchments of the Lake Eyre basin, with the Cooper Creek reaching the lake for the first time since 1990.
- 2011 Heavy local rain in early March in the Stuart Creek and Warriner catchments filled Lake Eyre South, with Lake Eyre North about 75 per cent covered with water, firstly from the Neales and Macumba Rivers, and later from the Warburton River.
- 2015 Water began flowing into Lake Eyre following heavy rain in the north-east of the state.
- 2019 Floodwaters began arriving in March as a result of torrential rains in northern Queensland in January of that year. The first flooding was closely followed by another surge, following rains produced by Cyclone Trevor.
- In the past, the water had taken anywhere from three to 10 months to reach the lake, but in the 2019 flood, the water arrived in just two months. This flow was not initially thought to be significant enough to fill Lake Eyre as it was not supported by local rain and water flowing in the Cooper Creek to the lake. As it turned out, it was significant enough to flow into Lake Eyre and provide somewhere between 40-60% coverage of the lake (in most places only 5-10 cm deep). In essence it was a 'dry flood'.

Figure 5 shows the distribution of water events over time according to a number of assumptions:

- A 1.5-metre flood has been included every three years and a 4-metre flood every ten years where other floods have not been reported.
- A 4-metre flood has been included.
- Fill or near fill events have been included as reported and assumed to be 5 metres deep on average.
- The reported 6-metre highest flood has been included in 1974.

The figure shows that with minor flooding events every three years and substantial events every ten years and given that the latter often persist for a time despite rapid evaporation, the totally dry intervals represent only around 50% to 60% of the time (on average).





Source: RDA Far North with interpretations by SC Lennon and Associates

2.5 Key Factors Influencing Future Water Events

The Climate Council (2017, Intense Rainfall and Flooding: The influence of Climate Change) has made the following key points:

- Climate change is influencing all extreme rainfall events. The warmer atmosphere holds more moisture, about 7% more than previously. This increases the risk of heavier downpours.
- Extreme rainfall events are expected to increase in intensity in Australia.
- For Queensland and New South Wales, the two states most adversely affected by ex-Tropical Cyclone Debbie, extreme rainfall events are likely to worsen. For example, maximum one-day rainfall is expected to increase by up to 17% and 18% for New South Wales and Queensland respectively.
- It is critical that communities and emergency services have access to information about rainfall in a changing climate to ensure they can prepare for the future, particularly when rebuilding damaged infrastructure.

The implication is that flooding events in Lake Eyre are likely to be more frequent and more significant in the future. According to Jennifer Firn et al (2015, Protecting Australia's Lake Eyre basin means getting our priorities right, The Conversation), the basin is already characterised by a highly variable climate and climate change impacts are predicted to increase this variability.

Climate change is also a major concern as it is altering the habitat suitability for many native species and may increase the severity of other threats, such as invasive species. Invasive animals can reproduce and spread quickly, as they are highly adaptable to changing weather and biotic conditions. The combined pressure from climate change and invasive animals will impact on threatened native species already disadvantaged by habitat and environmental conditions.

With more frequent flooding events tourism is likely to increase in the future. The challenge will be to accommodate this demand in an environmentally sustainable manner.

3. Visitation to Lake Eyre and The Outback

3.1 Visitor Numbers and Spending

Holiday makers are 'grey nomads' in the majority travelling in 4WDs with caravans or in campervans. Interestingly they tend to stay on the bitumen. Bus tours and 4WD group tours are also popular. Accommodation in towns in the region consists of hotels, motels, B&Bs and caravan parks and this is supplemented by what is described as 'property camping'.

Summarised below is the visitor data for the Flinders Ranges and Outback Region as shown in the map below, sourced from Tourism Research Australia (TRA). The main towns in the area are Oodnadatta, Coober Pedy, William Creek, Port Augusta, Peterborough Port Pirie, Marree, Roxby Downs, Woomera, Leigh Creek and Innamincka. The main attractions are the Flinders Ranges / Wilpena Pound, Coober Pedy and Lake Eyre (Kati-Thanda) plus the outback experience generally.



Figure 6. The Flinders Ranges and Outback Region

Source: https://www.atn.com.au/sa/south/sth-f.htm

Table 1 overleaf summarises the tourism visitation data for the region.

VISITS pa average March 2018 to Ma	arch 2020	SPEND			
International Overnight	45,000	3.2%	International Overnight	\$15,000,000	
Interstate Overnight	234,000	16.4%	Interstate Overnight	\$127,000,000	
Intrastate Overnight	517,000	36.2%	Intrastate Overnight	\$218,000,000	
Domestic Day Trips	631,000	44.2%	Domestic Day Trips	\$92,000,000	
Total Visits	1,427,000	100.0%	Total Spend	\$452,000,000	
NIGHTS pa average March 2018 to N	/larch 2020		SPEND per VISIT		
International Overnight	271,000		International Overnight	\$333	
Interstate Overnight	1,206,000		Interstate Overnight	\$543	
Intrastate Overnight	2,092,000		Intrastate Overnight	\$422	
Domestic Day Trips	n.a		Domestic Day Trips	\$146	
Total Nights	3,569,000				
STAY Days average March 2018 to M	1arch 2020		SPEND per DAY		
International Overnight	6.0		International Overnight	\$55	
Interstate Overnight	5.2		Interstate Overnight	\$105	
Intrastate Overnight	4.0		Intrastate Overnight	\$104	
Domestic Day Trips	1.0		Domestic Day Trips	\$146	

Table 1. Profile of Visitation to the Flinders Ranges and Outback Region

Source: Tourism Research Australia Visitor Surveys

It can be seen from the table that (pre-COVID-19 pandemic) there are approximately 1.43 million visits annually to the Flinders Ranges and Outback region of which 44.2% are domestic day trips, 52.6% domestic overnight trips and 3.2% internationals. The average length of stay for overnighters is between 4 and 6 nights.

The spending per day is \$146 for domestic day trippers, \$105 for domestic overnighters and \$55 for internationals. Note that the internationals figure excludes travel costs to Australia where the domestic figure includes travel costs. The total spend is in the order of \$452 million per annum.

Table 2 overleaf shows the purpose of trips to the Flinders Ranges and Outback region. For domestic visitors only 42% of trips are for a holiday, 18% are for visiting friends and relatives (VFR) and 40% for 'other' purposes (mainly business). In contrast, 87% of international visitors are on holiday.

As shown in Table 2, 40% of visitors to the Flinders Ranges and Outback are from Adelaide, followed by 29% from regional South Australia. Victoria generates 12% of visits to the region. Internationals originate mainly from the UK (18%), Germany (13%) and from other 'western' countries.

Table 2. Purpose of Visit and Origin	, Flinders Ranges and Outback Region
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Purpose	Domestic	International	
Holiday	42%	87%	
VFR	18%	7%	
Other	40%	6%	
Total	100%	100%	
	Ori	gin	
Don	nestic	Interna	tional
Adelaide	40%	UK	18%
Regional SA	29%	Germany	13%
Victoria	ctoria 12%		8%
Other	19%	Netherlands	8%
Total	100%	United States	7%
		France	7%
		Switzerland	6%
		Canada	4%
		Scandinavia	4%
		Other	25%
		Total	100%

Source: Tourism Research Australia Visitor Surveys

Tables 1 and 2 show that international visitors represent only 3.2% of visits to the region. However, this is 5.6% of overnight visits and 14% of overnight holiday visits. Holiday visits are the most relevant visits to Kati-Thanda Lake Eyre, and they provide the most relevant base for growth, being the most responsive to water events in the Lake.

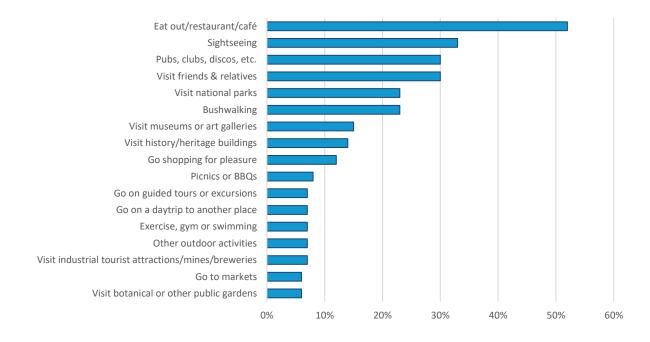
The region's largest visitor market is intrastate overnight trips, spending \$218 million per annum followed by interstate overnight trips, spending \$127 million per annum. Total spend is \$452 million per annum.

3.2 Visitor Activities, Seasonality and Trends

The activities engaged in by domestic visitors to the Flinders Ranges and Outback Region are summarised in Figure 7 below. It can be seen that of those activities that relate to a 'holiday', sightseeing is the most popular, followed by hospitality services, bushwalking, visiting national parks, museums or art galleries, heritage buildings and daytrips to other places, guided tours and excursions.

According to the South Australian Tourism Commission (SATC), key appealing experiences in the Flinders Ranges and Outback include scenic flights and 4WD tours.

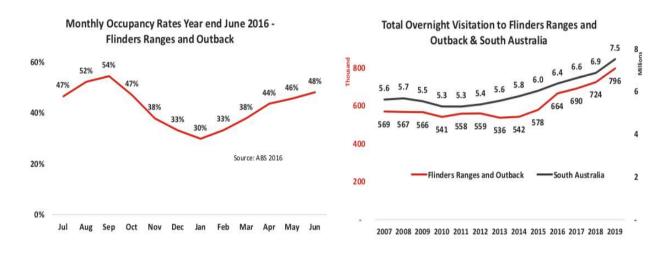
Figure 7. Domestic Visitor Activities, Flinders Ranges and Outback



Source: Flinders Ranges and Outback Regional Profile, SATC with interpretations by SC Lennon & Associates

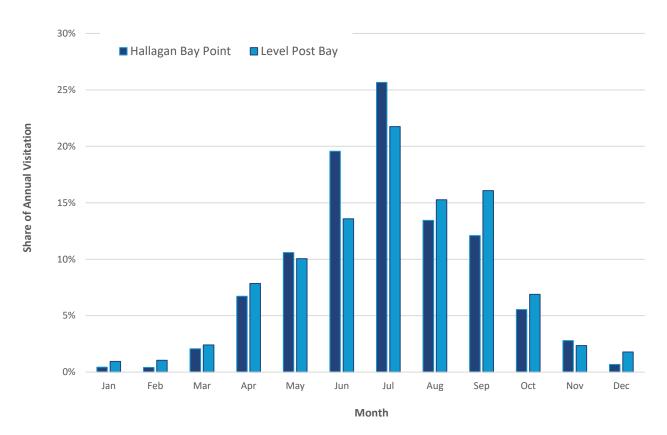
The seasonality of visitation to the Flinders Ranges and Outback region is reflected in accommodation occupancy rates. The peak of the year is the winter months and visitation drops away markedly due to fewer holiday makers in the hot months. In the past ten years, the trend in the number of visitors has been on an upward trajectory paralleling the trend for South Australia as a whole.

Figure 8. Visitation Seasonality and Trends, Flinders Ranges and Outback





Seasonality is also shown in data on visitation to Halligan Bay Pont and Level Post Bay for the period from 2002 to 2019, as informed by traffic counts data to both of these locations on the shores of Lake Eyre. As illustrated in Figure 9, there is a very pronounced visitation peak in June with shoulders extending to April and October. The summer months are very quiet.





Source: National Parks and Wildlife Service South Australia

3.3 Economic Impact of Visitor Spending

Tourism Research Australia has published the following estimates for the Flinders Ranges and Outback Region:

- Direct contribution to GRP •
- \$154m (\$146m Gross value Added)
- Indirect contribution to GRP
- Persons employed direct

•

- \$143m (\$125m Gross value Added)
- 2,200
- Persons employed indirect 900
- Total tourism consumption growth 67% over the past 10 years •

(Source: Tourism Research Australia)

Figure 10 overleaf shows patterns of tourism consumption in the Outback. The biggest category is long distance passenger transportation followed by takeaway and restaurant meals, then shopping, then fuel, then accommodation and then tour operating services.

Figure 11 shows the patterns of tourism employment. It reveals that 35% of 'tourism jobs' are in restaurant and takeaway food services, followed by 17% in accommodation, 15% in retailing and 7% of tourism jobs in travel agency and tour operator services.

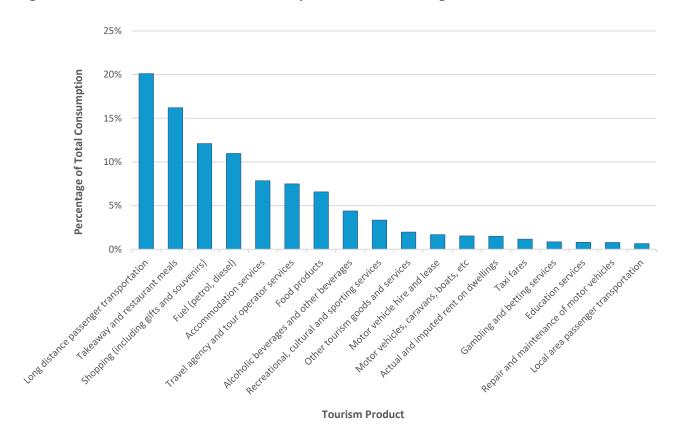


Figure 10. Patterns of Tourism Consumption, Flinders Ranges and Outback, 2017/18

Source: Tourism Research Australia with interpretations by SC Lennon & Associates

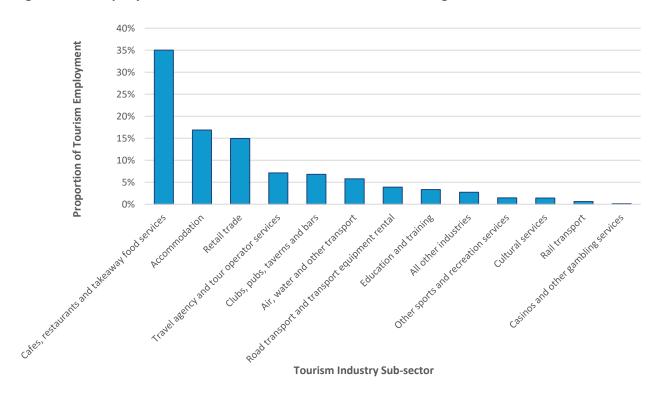


Figure 11. Employment in the Tourism Sector, Flinders Ranges and Outback, 2017/18

Source: Tourism Research Australia with interpretations by SC Lennon & Associates

4. Water Events and Visitation to Lake Eyre

4.1 Evidence of a 'Visitation Uptick'

Flood events since 2002 have been plotted against Lake Eyre visitation data (ground based) as informed by traffic counts in two key locations - Halligan Bay Point and Level Post Bay. The visitation data, illustrated in Figure 12, has been provided by National Parks and Wildlife Service South Australia to inform this study.

It can be seen in the figure that visits to Halligan Bay Point and Level Post Bay coincide with flooding events. For the years between 2002 and 2019, the data reveals a significant increase in visitation during and immediately following years of significant water events, including in 2009-2012 and in 2019. Whether visits increase at one or the other location depends on whether it is the north or the south lake that floods. Generally, the north lake floods well before the south lake due to the source of the water being in the north.

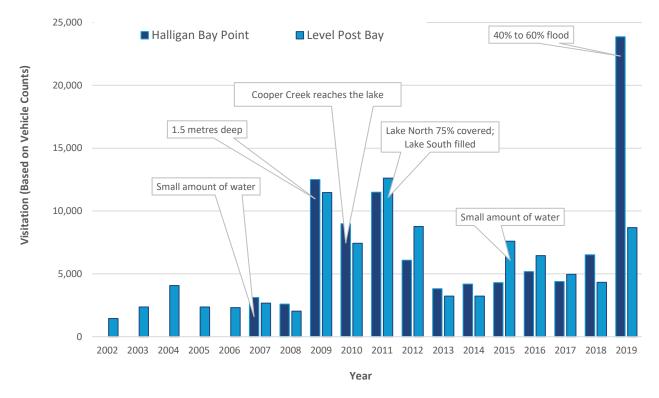


Figure 12. Lake Eyre Visits Correlated with Flooding Events, 2002 to 2019

Source: National Parks and Wildlife Service South Australia with interpretations by SC Lennon & Associates

Visitation to Coober Pedy, which is around 165 kilometres west of William Creek, provides an indicator of visitation to the northern parts of the Outback, as this is a very popular destination for visitors. Coober Pedy is the only location in the region north of Roxby Downs / Olympic Dam that receives commercial flights from Adelaide. As well as receiving visitors by road, some local Lake Eyre tour operators will also collect visitors from Coober Pedy by plane and fly them back to the lake via William Creek.

In a 2012 survey, Coober Pedy was voted the 'top experience' in the Flinders Ranges and Outback Region along with bush camping along the Birdsville, Oodnadatta and Strzelecki Tracks (*Flinders Ranges and Outback Tourism SA Outback Working Party, 2012, How Can the Outback Benefit from and Promote Tourism in the Region When the Lake is Dry?*).

The 'northern parts' of the Flinders Ranges and Outback are defined as that part of the region north of the town of Hawker. This excludes larger towns such as Port Augusta, Port Pirie and Peterborough. Visitation to the southern part of the region is considered to be only loosely related to visitation patterns in Coober Pedy.

A comparison of visitor numbers to Coober Pedy during wet events compared to dry periods is shown in Figure 13. The figure shows Coober Pedy's share of total visitation to South Australia for the purpose of neutralising the effect of historical growth, which has been substantial over the period. The picture that emerges is that there is a 25% uptick in visitation to Coober Pedy when Lake Eyre is experiencing water inundation compared to dry periods. This is a strong indicator of visits to the northern parts of the region on the basis that Coober Pedy is on the itinerary of most visitors to the Outback.

Further evidence was reported by the former proprietor of the Birdsville Hotel (located in Queensland close to the border with South Australia) where sales were reported to increase by around 3.5% for small water events and 21.5% for significant events. Anecdotal evidence gathered through interviews with selected tourism operators in the Outback suggest that the impact of water events on visitation to the area is significant and almost immediate.

Media coverage is considered to be a key factor driving visitation and when a water event (of even a relatively small magnitude) is widely reported, there is a significant uplift in visitation to Kati-Thanda Lake Eyre and surrounds. As reported above, information from local operators suggests that, for Lake Eyre tourism to be commercially-viable, an event resulting in at least 1.5 metres of water in the lake is required. However, this can mean that visitors' expectations of experiencing in a 'flooding event' are not always necessarily met. This suggests there is a need to better communicate the history and nature of different types of 'flooding events' in Lake Eyre as part of a wider Outback tourism experience.

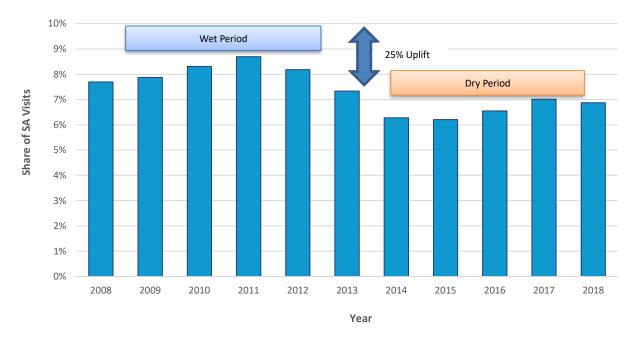


Figure 13. Coober Pedy Share of SA Visits - Wet and Dry Periods, 2008 to 2018

Source: South Australian Tourism Commission with interpretations by SC Lennon & Associates

Towns as far away as Peterborough (500 kilometres south of the lake) report that travellers heading north stop over and some stay overnight. In the busier autumn / winter/ spring period, occupancy rates in hotels, motels, B&Bs and caravan parks are at around 70% to 80%. When there is water in the lake, they are full. The uplift in visitation is estimated to be in the order of 30% to 40% when there is water in Lake Eyre, although some report that the uplift can be somewhat 'volatile'.

4.2 Visitor Numbers and Uptick

The estimated uptick associated with water events is logically applied to the holiday component of visitation to the 'northern parts' of the region (as opposed to visiting friends and relatives and business trips). For the purposes of this analysis the northern parts are defined as the Outback region as illustrated below.

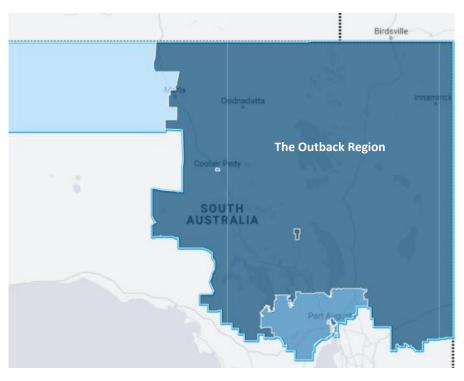


Figure 14. Northern Parts - Outback Region

Source: REMPLAN

In Table 3 the holiday component of these visits is identified showing that this equates to 619,590 visits per annum. The (conservatively estimated) 25% uptick in visitation equates to 46,345 visits per annum and the additional spend associated with this is \$19.5 million per annum.

	Visits pa Average Mar 18 to Mar 20	Holiday %	Holiday Number	Visits to Northern Sector %	Visitors to Northern Sector	25% Uplift	Spend per Visit	Total Spend
International								
Overnight	45,000	87%	39,150	61%	23,882	5,970	\$333	\$1,990,125
Interstate Overnight	234,000	42%	98,280	47%	46,192	11,548	\$543	\$6,267,450
Intrastate Overnight	517,000	42%	217,140	47%	102,056	25,514	\$422	\$10,758,300
Domestic Day Trips	631,000	42%	265,020	5%	13,251	3,313	\$146	\$483,000
Total Visits	1,427,000	43%	619,590	30%	185,380	46,345	\$421	\$19,498,875

Table 3. Outback Region Visitation, 2018-20 - Holiday Component

Source: TRA Visitor Surveys for Flinders Ranges and Outback, SATC for proportion to OCA Region with interpretations by SC Lennon & Associates

5. Visitation Uptick and Economic Impact

5.1 Changes in Output

With an estimated \$19.5 million per annum increase in visitor spending associated with a water event in Lake Eyre, there will be implications for the regional economy. These effects have been modelled using REMPLAN Economy (an Input - Output model of the Outback region). The model estimates the changes in output for the various industry sectors as per Table 4.

Industry Sector	Direct Change in Output by Industry
	(\$m)
Accommodation & Food Services	\$13.80
Ownership of Dwellings	\$2.03
Transport, Postal & Warehousing	\$1.74
Manufacturing	\$0.53
Retail Trade	\$0.51
Arts & Recreation Services	\$0.43
Education & Training	\$0.26
Wholesale Trade	\$0.11
Other Services	\$0.04
Health Care & Social Assistance	\$0.02
Information Media & Telecommunications	\$0.01
Agriculture, Forestry & Fishing	\$0.01
Total Change in Output	\$19.50

Table 4. Changes in Tourism-related Output by Industry Sector, Outback Region

Source: SC Lennon and Associates and REMPLAN Economy

It can be seen that the major change in output occurs in the accommodation and food services sector. Table 5 summarises the regional economy effects of an uplift in visitation associated with a water event in Lake Eyre, with an explanation in the following sections.

Table 5. Regional Economy Effects

Impact Summary	Direct Effect	Supply-Chain Effect	Consumption Effect	Total Effect	Type 1 Multiplier	Type 2 Multiplier
Output (\$M)	\$19.500	\$1.824	\$2.675	\$24.000	1.094	1.231
Value-added (\$M)	\$8.446	\$0.817	\$1.597	\$10.860	1.097	1.286
Employment (Jobs)	103	7	9	119	1.068	1.155

Source: SC Lennon and Associates and REMPLAN Economy

5.2 Output Impact

From Table 5 it can be seen that from a direct increase in output of \$19.500 million the demand for intermediate goods and services would rise by \$1.824 million. This represents a Type 1 Output multiplier of 1.094. These supply-chain effects include multiple rounds of flow-on effects, as servicing sectors increase their own output and demand for local goods and services in response to the direct change to the economy.

The increases in direct and indirect output would typically correspond to the creation of jobs in the economy. Corresponding to this change in employment would be an increase in the total of wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are estimated at \$2.675 million.

Total output, including all direct, supply-chain and consumption effects is estimated to increase by up to \$24.000 million. This represents a Type 2 Output multiplier of 1.231.

5.3 Value Added Impact

From a direct increase in output of \$19.500 million the corresponding increase in direct value-added is estimated at \$8.446 million. From this direct expansion in the economy, flow-on supply-chain effects in terms of local purchases of goods and services are anticipated, and it is estimated that these indirect impacts would result in a further increase to value-added of \$0.817 million. This represents a Type 1 Value-added multiplier of 1.097.

The increase in direct and indirect output and the corresponding boost to jobs in the economy are expected to result in an increase in the wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are expected to further boost value-added by \$1.597 million.

Total value-added, including all direct, supply-chain and consumption effects is estimated to increase by up to \$10.860 million. This represents a Type 2 Value-added multiplier of 1.286.

5.4 Employment Impact

From a direct increase in output of \$19.500 million the corresponding creation of direct jobs is estimated at 103 jobs. From this direct expansion in the economy, flow-on supply-chain effects in terms of local purchases of goods and services are anticipated, and it is estimated that these indirect impacts would result in the gain of a further 7 jobs. This represents a Type 1 Employment multiplier of 1.068.

The increase in direct and indirect output and the corresponding creation of jobs in the economy are expected to result in an increase in the wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are estimated to further boost employment by 9 jobs.

Total employment, including all direct, supply-chain and consumption effects is estimated to increase by 119 jobs. This represents a Type 2 Employment multiplier of 1.155. According to REMPLAN, the Outback region is home to 3,137 jobs. Of those, a total of 1,107 local jobs are in tourism-related industries or industries that have supply chain links to tourism including the accommodation and food services sector, retail trade, agriculture, rental hiring and real estate services, transport, postal and warehousing, arts and recreation services and other service sectors. The creation of 119 jobs resulting from a visitation uplift generated by a water event at Kati-Thanda Lake Eyre, is therefore a significant contribution (10.7%) to total employment in the Outback.

6. The Way Forward for Kati-Thanda Lake Eyre Tourism

6.1 Moving Beyond the COVID-19 Pandemic

In 2019 Tourism Research Australia was forecasting tourism growth of 2% per annum for South Australia, however, at the time of preparing this report (late 2020), the current COVID-19 pandemic is having a major impact. International visitation has effectively ceased, and domestic visitation is severely curtailed. The South Australian Tourism Commission has reported (https://tourism.sa.gov.au/statistics/domestic-statistics) that for the year to June 2020 (for which the results include the impacts of the 2019/20 summer bushfires and four months of the COVID-19 pandemic and related restrictions):

- Domestic visitor expenditure declined by 14 per cent to \$5.6 billion;
- Interstate overnight expenditure fell 21 per cent to \$2.0 billion;
- Intrastate overnight expenditure fell 12 per cent to \$2.0 billion; and
- Day trips expenditure fell 6 per cent to \$1.5 billion.

Strong growth in 2019 hides more significant declines felt in 2020, particularly in the months of April and May. Nevertheless, while the COVID-19 pandemic will impact on tourism movements to and within Australia in the short-term, over the medium to longer-term, growth prospects are positive. Industry research body IBISWorld reports that nationally, domestic tourism is already beginning to slowly start back up, with tourism businesses expected to rely heavily on domestic leisure travellers in 2020-21.

On the basis that Australians may substitute holidays in Australia for overseas trips for a few years after restrictions are eased, it is possible that domestic tourism numbers may recover. In the face of all of the uncertainty confronting the tourism sector and the economy more broadly, the discussion that follows assumes a return to 'normality' at some point in the not-too-distant future.

6.2 The Challenge for Tourism in and Around Lake Eyre

Catering for over 46,000 visitors in a 'wet event' year spending over \$19.5 million poses some challenges, both in addressing existing issues and in taking advantage of opportunities to develop and grow the local visitor economy. Issues that have been raised in the consultations carried out for this study and in past reports are:

- Access to, quality of and the cost of potable water pose ongoing challenges. There is a requirement for expensive desalination of bore water for towns and demand is growing from the mining, petroleum and geothermal industries.
- Unsealed roads need to be closed in wet weather to avoid damage impacting on businesses, industries, residents and visitors. This issue creates some animosity by some locals towards visitors claiming they cause much of the damage.
- Public access roads to Kati-Thanda Lake Eyre are in poor condition.
- There is a need for additional toilets, shelters and facilities for visitors at key destinations.
- Numerous new rest areas are required at strategic attractions and main road locations, for both safety and convenience for the travelling public.
- Poor mobile phone coverage is cited as an ongoing issue throughout the region.

- Accommodation shortfalls have been cited by a number of stakeholders as a constraint on the Outback's capacity to capitalise on water events at Lake Eyre. Temporary 'tent cities' have been proposed as an option worth exploring, including 'glamping' options.
- There is a need to improve airstrips for air charters and self-fly tourists so that higher capacity aircraft can be accommodated. This is considered by some key operators consulted to be a potential 'game-changer' for tourism in the region.
- There is a need for infrastructure investments, particularly in roads and the management of roads (e.g. notification of closures) and for airports (terminals, parking, refueling, toilet dumps, helicopter pad and runway extension to cater for larger planes). Toilets are a constant theme along with rest areas and signage.
- The sensitive Kati-Thanda Lake Eyre and Outback environment needs to be managed sustainably to ensure items of historic and natural value are not damaged and are retained for the benefit of future generations.
- Pastoral Act constraints affect local businesses on properties.
- Visitor expectations regarding what constitutes a 'flooding event' need to be addressed to ensure that the tourism experience matches visitor expectations.
- The negative aspects of a 'wet' Lake Eyre were identified in a survey (reported in Flinders Ranges and Outback Tourism SA Outback Working Party, 2012, How Can the Outback Benefit from and Promote Tourism in the Region When the Lake is Dry?) as including an impact on the local community with an influx of tourists, accommodation shortfalls (including camping opportunities), accidents, damage to roads and low satisfaction due to poor tour operators.
- There is a need for a strong, well-resourced local representative organisation to plan and manage tourism.

6.3 Opportunities for Economic Development

Opportunities that have been raised in the consultations carried out for this study and in past reports are:

- There is a need to stabilise/restore, protect and interpret key historic and heritage assets across the basin.
- The stories of the Outback and Lake Eyre Basin are perhaps its biggest tourist assets (Overland Telegraph, Old Ghan Railway, Aboriginal song lines and trade routes, Birdsville, Strzelecki and Oodnadatta Tracks, the Dog Fence, stock routes, etc.).
- Adopt a project management and mentor approach to develop Aboriginal tourism enterprises in and around Kati-Thanda Lake Eyre.
- Improve protection, public access, management and interpretation of selected Aboriginal sites.
- Develop new interpretive experiences including tours that focus on geology, ecology and cultural heritage.
- Develop a tourism plan for the whole basin (tourists do not acknowledge State borders). A well-resourced local representative tourism organisation could have carriage of the design and implementation of such a plan.
- Increase the range of tourism experiences on pastoral properties.

- Provide high quality ecological accommodation.
- Explore the concept of a temporary 'tent city' which can be established within a few months in response to an anticipated flooding event (it takes a few months for a big rain in the north to flow south into the Lake Eyre Basin).
- A short-term 'wet weather plan', which allows for a coordinated response to flooding events to be capitalised upon (marketing and promotion, accommodation, amenities/facilities, signage, etc.) could bring significant economic benefits to the local communities around the lake while minimising investment risk.
- Kati-Thanda Lake Eyre needs to be promoted as a key piece of a wide array of Outback attractions, during both wet and dry periods.
- Kati-Thanda lake Eyre's online presence could potentially be enhanced with a recognised single point of entry / information portal with buy-in from all stakeholders.
- Improved signage is required to better direct visitors to key sites and to improve knowledge and understanding
 of the Outback.
- Improved airstrips for air charters and self-fly tourists so that higher capacity (50-seat) aircraft can be accommodated could be a 'game-changer' for tourism in the Outback.
- Assistance to tourism businesses through training to improve levels of service, resources, booking systems and marketing would enhance local capacity and encourage economic development.
- Improved infrastructure which caters to the needs and expectations of a diverse visitor market will serve to attract and retain 'higher spend' visitors including high-end travellers who would otherwise fly over the lake from Adelaide and elsewhere.
- The Explorer's Way needs to position itself with new products, accessing new markets and adapt product distribution techniques to emerging technologies.
- The 4WD market is largely untapped around Kati-Thanda Lake Eyre.
- The positive benefits of a 'wet' Lake Eyre were identified in a survey (reported in Flinders Ranges and Outback Tourism SA Outback Working Party, 2012, How Can the Outback Benefit from and Promote Tourism in the Region When the Lake is Dry?) as an increase in visitors, repeat visitors, word of mouth promotion and an increase in bus and air tours. This was seen to increase public awareness of the region with increased profitability for businesses.
- Survey respondents identified a range of 'viable' business opportunities relating to retailing, services, tours, accommodation and events. Marketing was seen as a potential means of increasing visitation significantly.
- Continual market research is required to ensure the needs and expectations of emerging and future visitor markets (e.g. Millennials) is understood.

Collectively, these identified challenges and opportunities inform a way forward to address capacity to meet visitor demand and to capitalise on opportunities for economic development.

6.4 A Way Forward - Addressing Capacity to Meet Visitor Demand

From the foregoing analysis, all indications are that there is a potential 'latent demand' for visitation to Kati-Thanda Lake Eyre, both when the lake is dry and when it is wet. The holiday market is over 600,000 per annum to the Flinders Ranges and Outback Region and 185,000 per annum to the northern parts of this region, with a 46,000 per annum uplift (25%) during water events in the lake.

The economic flow-ons generated from this uplift in visitation are significant, with modelling suggesting that, from a direct increase of \$19.5 million, the Outback's total industry value-added would increase by up to \$10.8 million and, after accounting for all direct, supply-chain and consumption effects, this uplift would generate 119 jobs in the region.

This is the estimated impact of water events in the current landscape. If investments were made in what can be described as the critical 'enablers of a vibrant visitor economy', that is, the infrastructure and facilities, management and information services and governance arrangements required to manage and promote tourism, a target increase in visitation and associated expenditure above and beyond that generated by water events currently, could be expected. For example, it has been demonstrated in other studies that recent commitments to major infrastructure investments such as upgrades to the Strzelecki Track, will serve to enhance the Outback's capacity to accommodate an uplift in tourist numbers throughout the region.

Even if a conservative 'stretch target' increase of 12.5% above and beyond the currently estimated uplift was realised (that is, half of the current uplift again), then further economic benefits could be realised in the order of \$5 million in industry value-added (for a total of around \$16 million) and another 60 jobs (for a total of around 180 jobs in the Outback region).

The lists of challenges and opportunities above suggest there are many things that can be done to attract a substantial number of additional visitors to encourage economic growth and development in the communities around Kati-Thanda Lake Eyre and the wider Outback region. The main capacity constraints are related to accommodation of various types, including new types such as glamping, eco-lodges and property stays, infrastructure (namely roads and airstrip / aerodrome capacity), facilities / amenities, wayfinding and levels of service.

If these identified challenges and opportunities can be addressed in a collaborative fashion, there is significant scope to grow the capacity of Kati-Thanda Lake Eyre and surrounding communities into a central component of a vibrant Outback visitor economy.

Using the information and findings presented in this report is an important first step to delivering a strategic, informed and targeted approach to accommodating visitation to one of Australia's most iconic natural attractions to promote and facilitate sustainable economic development. In order to address the challenges and opportunities effectively, priorities will need to be identified and agreed upon amongst key stakeholders.

6.5 Prioritising Opportunities for Economic Development

To ensure that the challenges and opportunities can be addressed effectively, it is recommended that stakeholders work together on a plan of action to promote and facilitate visitation to Kati-Thanda Lake Eyre. This requires the establishment of a process to confirm the priorities that need to be addressed.

Priorities can be identified based on the application of two broad sets of assessment criteria – *benefit realisation* and *capacity to implement*. Using these criteria can inform the priorities that the Outback Communities Authority, RDA Far North, Flinders Ranges and Outback SA Tourism and other local and regional stakeholders can advance as short-term initiatives.

Without undertaking an exhaustive assessment and analysis of the identified challenges and opportunities, it is considered that, subject to further strategic investigation, the following initiatives be pursued as a priority:

- 1. Prepare a short-term *Kati-Thanda Lake Eyre Water Event Response Plan*, which allows for a coordinated and collaborative approach to flooding events to be taken advantage of when they occur. As demonstrated by the economic analysis presented in this report, this has the potential to benefit local businesses and communities with significant economic flow-ons throughout the rest of the Outback region and beyond.
- Undertake further investigations and, subject to stakeholder consensus, prepare economic needs analyses and / or business cases for investment in critical enabling infrastructure to support visitation to Kati-Thanda Lake Eyre. This includes, for example, visitor accommodation, amenities/facilities, signage, road connections and airstrip / aerodrome capacity.
- 3. Commission the preparation of a *Kati-Thanda Lake Eyre & Outback Destination Management Plan* to establish a strategic, informed and coordinated approach to the infrastructure and facilities, management and information services and governance arrangements required to manage and promote tourism in and around Kati-Thanda Lake Eyre as a catalyst Outback visitor attraction.

In progressing these priorities, cultivating collaborative partnerships will be key. To this end, the findings of this economic analysis should be used to inform and guide RDA Far North, the OCA and their partner stakeholders to drive a strategic approach to advocacy, promotion and facilitation of identified needs and opportunities for investment in the Outback visitor economy.

Approaching both the challenges and opportunities for investment in tourism support infrastructure, services and facilities in and around Kati-Thanda Lake Eyre in a coordinated and sustainable fashion will be the key to supporting long-term growth. Using the evidence presented in this report, a strategic, informed and targeted approach will support stakeholders' engagement with both State and Federal Governments on matters of significance.

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