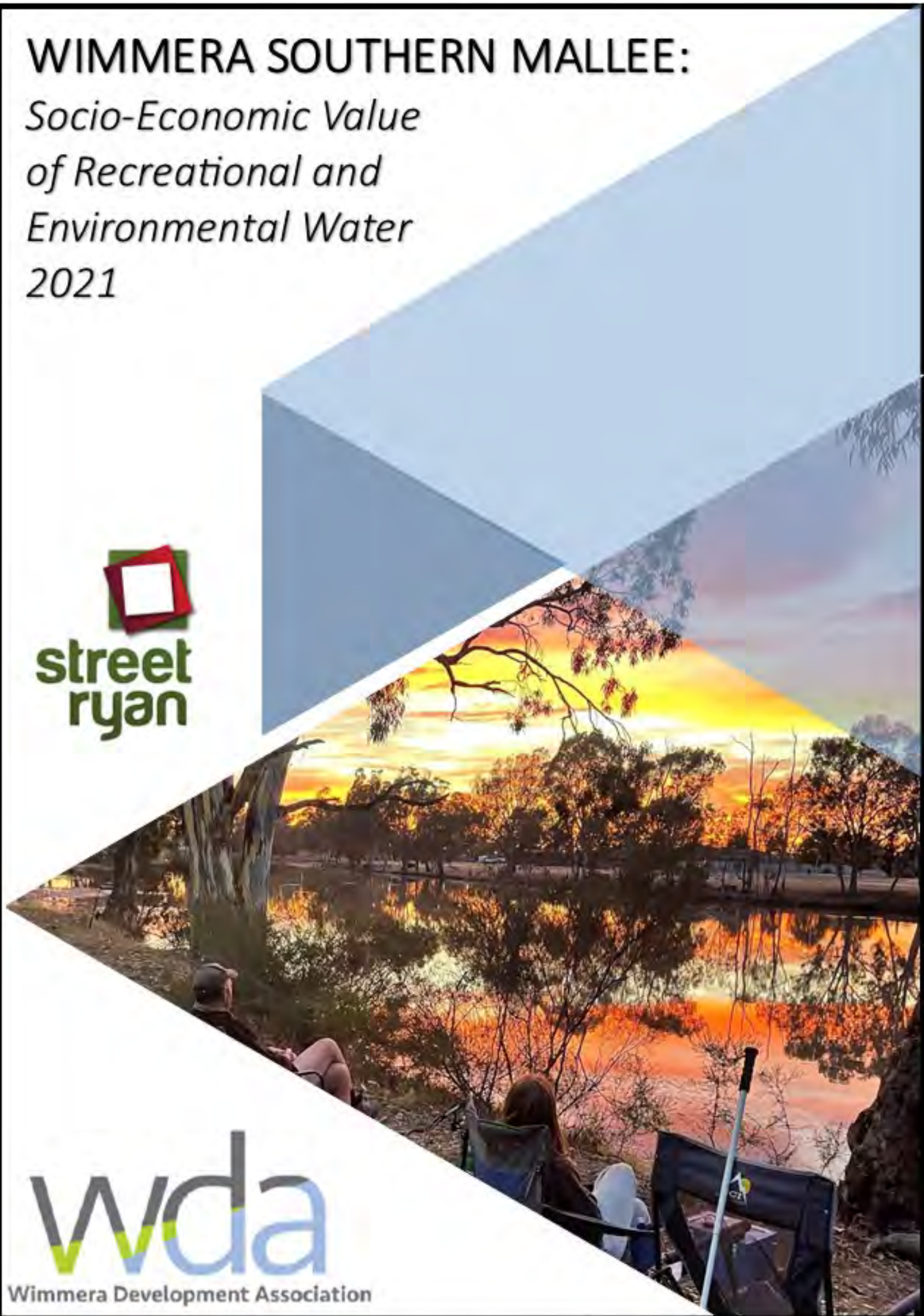


WIMMERA SOUTHERN MALLEE:

*Socio-Economic Value
of Recreational and
Environmental Water
2021*



Wimmera Development Association



The Wimmera Southern Mallee
Socio-Economic Value of Recreational and
Environmental Water report has been made
possible by the following project partners



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EXECUTIVE SUMMARY

E1 Background

This project has been a joint initiative of Wimmera Development Association, GWMWater, the Wimmera Catchment Management Authority, and Local Councils. It is the fifth annual assessment of the economic and social contribution made by the local weirs, lakes and rivers to the regional economy. The project encompassed assessments of 27 lakes, weir pools and rivers around the region.

E2 Recreational Water Facility Visitation and Usage

- Estimated recreational water users in 2020-21 at the selected facilities are:
 - Overnight visitors: 38,355
 - Visit nights: 157,684
 - Local active participation (people using the water facility as a day trip destination for fishing, swimming, boating, picnicking on the banks): 54,948
 - Local passive participation (people engaged in an activity using the foreshore or trails around the water facility due to its amenity, such as walking, cycling, jogging): 158,391
 - Total recreational water participation: 251,694
 - Change on 2019-20: -10.79%
 - Estimated number of people involved: 65,921

- The COVID 19 pandemic first impacted on visitation to Wimmera Southern Mallee waterbodies in late March 2020, forcing cancellation of many planned events over the Easter period and the usually busy Autumn season. Caravan parks and camping grounds at the lakes and weir pools were closed, and overnight visitors were not allowed, with only a few exceptions in circumstances where people demonstrated they had no alternative place to stay. These restrictions effectively continued until the end of the 2019-20 year. In 2020-21 COVID pandemic restrictions were periodic and, although Regional Victoria was often exempted from strict lockdowns imposed on Metropolitan Melbourne, the whole year was plagued with uncertainty and a degree of travel hesitancy. The 2020-21 recreational water assessment has found COVID pandemic impacts included:
 - Further cancellation of events and functions at the lakes and weir pools.
 - A huge drop in interstate visitation to the lakes and weir pools (and a total absence of overseas visitors). The percentage of visitors from interstate and overseas fell from a 'pre-pandemic' 13.7% in 2018-19 to 4.3% in 2020-21.
 - Reduction in visitors from Melbourne Metropolitan area (from 15.5% in 2018-19 to 13.2% in 2020-21).
 - A decrease in recreational water users of 10.8% in 2020-21, compounding the 14.0% decrease recorded in 2019-20. More significantly, the number of overnight visitors decreased an estimated 18.2% in 2020-21 after a 39.0% decrease in 2019-20.
 - Substantially higher average daily expenditure levels (after limited opportunities to eat out, travel and participate in sport and social activities) at several lakes and weir pools located in, or near, towns with more extensive 'visitor services' (hotel/motel accommodation, cafés and restaurants, and other retail outlets) particularly:
 - Halls Gap (Bellfield Reservoir and, to a lesser extent, Lake Fyans)
 - Horsham (Horsham Weir Pool and, to a much lesser extent, Lake Toolondo and Taylors Lake))
 - Dimboola (Dimboola Weir Pool)
 - Nhill (Nhill Lake)
 - Warracknabeal (Warracknabeal Weir Pool)
 - Donald (Folletti Park Lake).

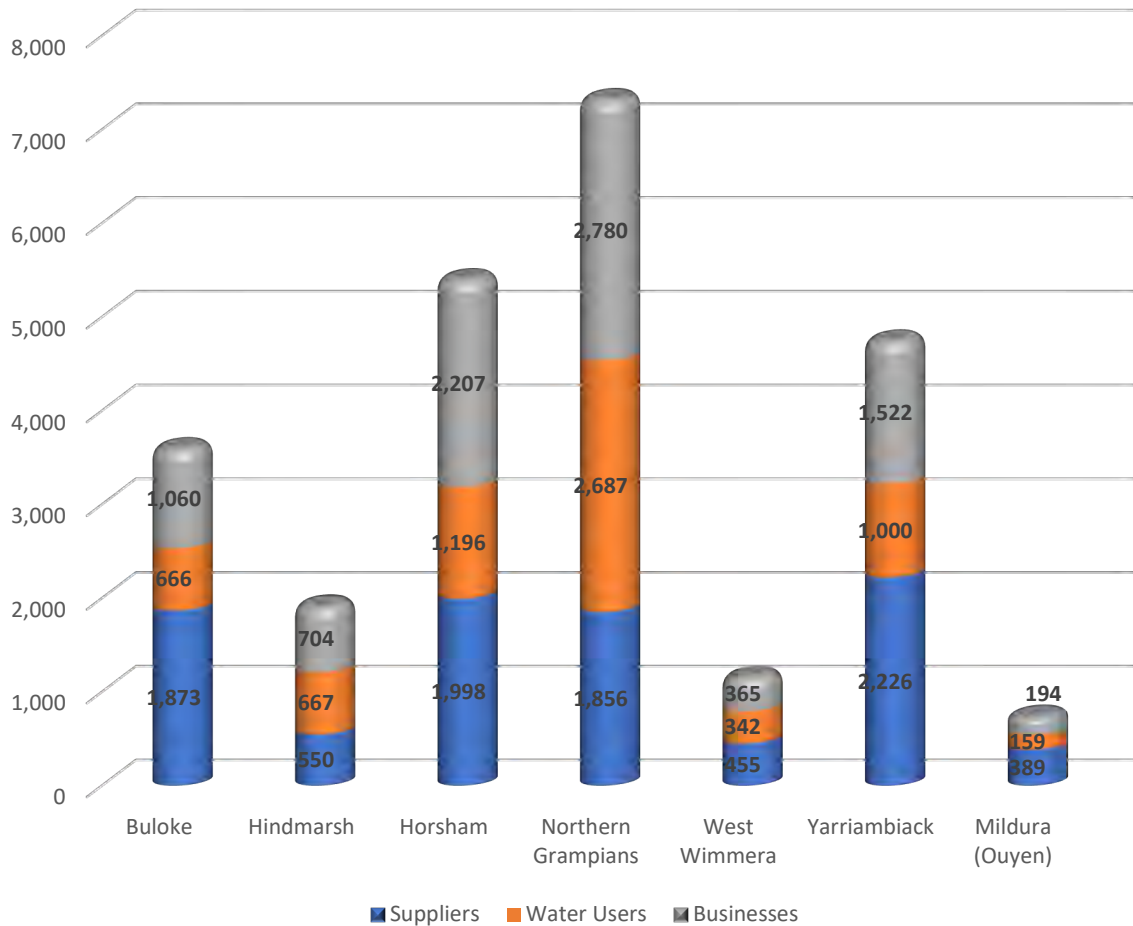
- Conversely, reduced average expenditure was recorded at a few of the waterbodies. Often this was a consequence of limited opportunities for visitors to spend money locally than a willingness or ability to spend. Waterbodies in this category included:
 - Beulah Weir Pool
 - Brim Weir Pool
 - Lake Charlegrark
 - Lake Marma.
- The changes in average expenditure resulted in reduced estimated expenditure by recreational water users of just 3.0% in 2020-21, following a 26.5% reduction in 2019-20. This compares with Tourism Research Australia's estimate of 56% decrease in tourism expenditure in 2020 in the Wimmera region, although noting that a large percentage (49%) of WSM recreational waters are local residents (rather than tourist visitors).
- Low water levels and poor water quality was a major issue affecting several of the 27 lakes and weir pools in 2020-21. The most significant were:
 - Lake Bringalbert in West Wimmera Shire, where the water level was below 10% of capacity throughout the year
 - Green Lake in the Rural City of Horsham, where the water level was less than 40% and too low for sailing and use of boat ramps and fishing pontoons.
 - Lake Lonsdale in Northern Grampians Shire, where water levels were less than 15% and blue-green algae blooms persisted through much of the year.
 - Nhill Lake, where the water level was less than 50% and water quality was poor and there were vegetation hazards around and in the lake.
 - Lake Ratzcastle in West Wimmera Shire, where the water level was less than 1% throughout the year.
 - Lake Toolondo in Rural City of Horsham, where the water level was below 10% and blue-green algae blooms persisted through much of the year.
 - Lake Wallace in West Wimmera Shire, where there was a high coverage of ribbon weed, making fishing and boating unfeasible.
 - Lake Wartook in Northern Grampians Shire, where the water level was below 50% through most of the year.
- Activities and amenity provided at the WSM water facilities are clearly suited to residents and visitors 'for a lifetime', with good levels of participation across all age ranges. Family groups and retirees dominate the overnight visitor users. Older participants continue to be well represented among the waterbody users, with 25% of users aged 45-64 years and 11% aged 65 years and over, although the COVID travel restrictions impacted on 'grey nomad' overnight visits in 2020-21.
- As the COVID pandemic has unfolded a larger majority of visitors (82.5%) to the recreational water facilities in 2020-21 have been residents of the Wimmera Southern Mallee and other parts of regional Victoria compared with 75.1% in 2019-20 and 70.7% in 2018-19.
- Most towns servicing the WSM recreational water facilities have high levels of socio-economic disadvantage. In fact, most are within the most disadvantaged 30% of all 'suburbs' in Victoria (of 2,676 suburbs in total)¹. This suggests the local towns and their residents are likely to achieve greater than average benefits from the economic and social impacts accruing from the regional recreational water facilities.

¹ Australian Bureau of Statistics' SEIFA indices calculate relative advantage and disadvantage using a range of variables on income, education, employment, occupation, housing, and other miscellaneous indicators.

E3 Economic Contribution

- The total estimated regional economic contribution from the 27 selected recreational water facilities in the Wimmera Southern Mallee is \$24.89 million in 2020-21 (a 12.58% decrease on the contribution measured in 2019-20).
- Estimated regional economic contributions of the water facilities generated by respective local areas is:
 - Buloke Shire: \$3.598 million
 - Hindmarsh Shire: \$1.921 million
 - Horsham Rural City: \$5.401 million
 - Northern Grampians Shire: \$7.323 million
 - West Wimmera Shire: \$1.161 million
 - Yarriambiack Shire: \$4.747 million
 - Mildura Rural City (Ouyen): \$0.742 million
 - Total: \$24.894 million.

Figure E1 Estimated Regional Recreational Water Economic Contribution by Local Areas, 2020-21: (\$'000)



Wimmera Southern Mallee Socio – Economic Value of Recreational Water

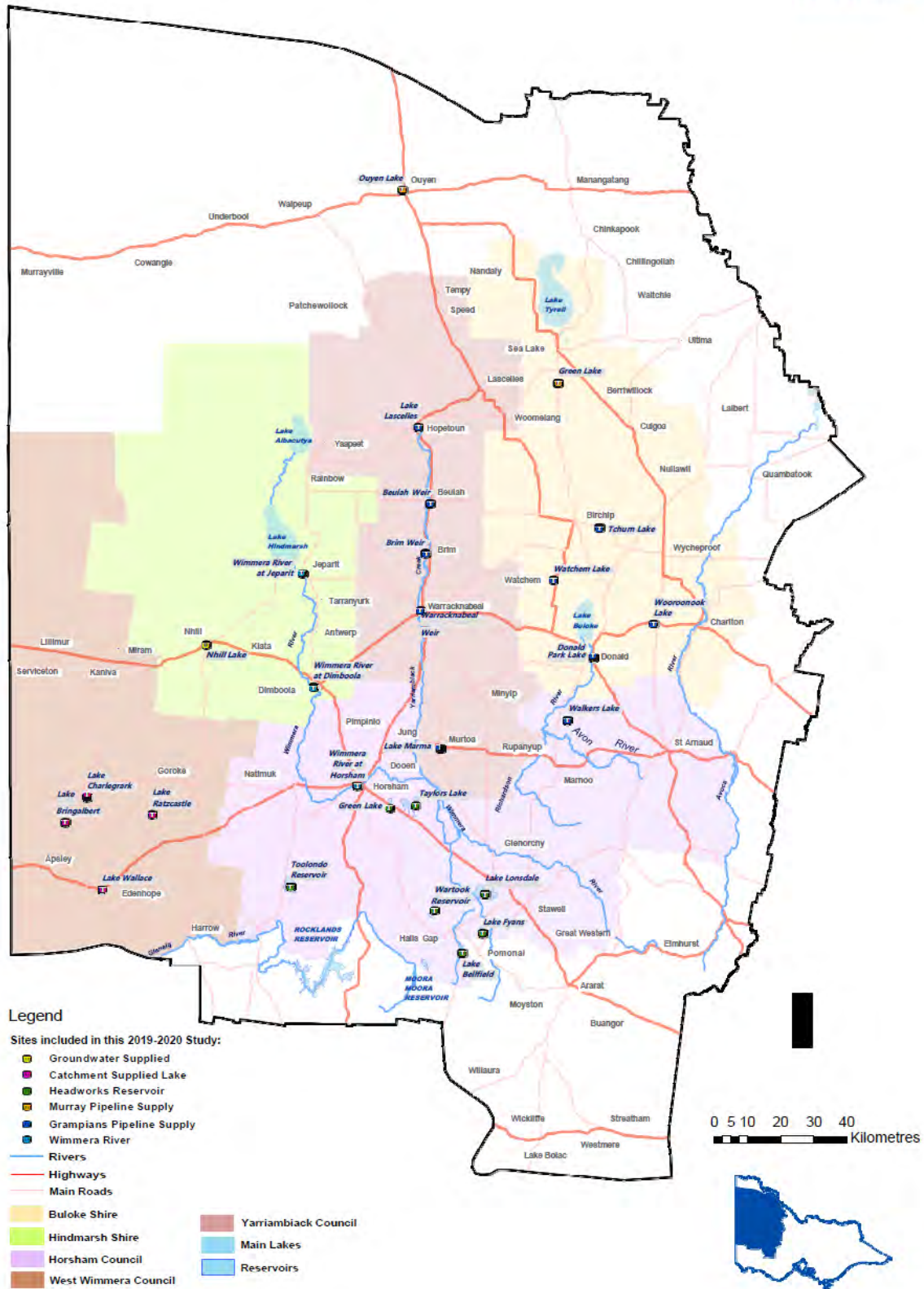
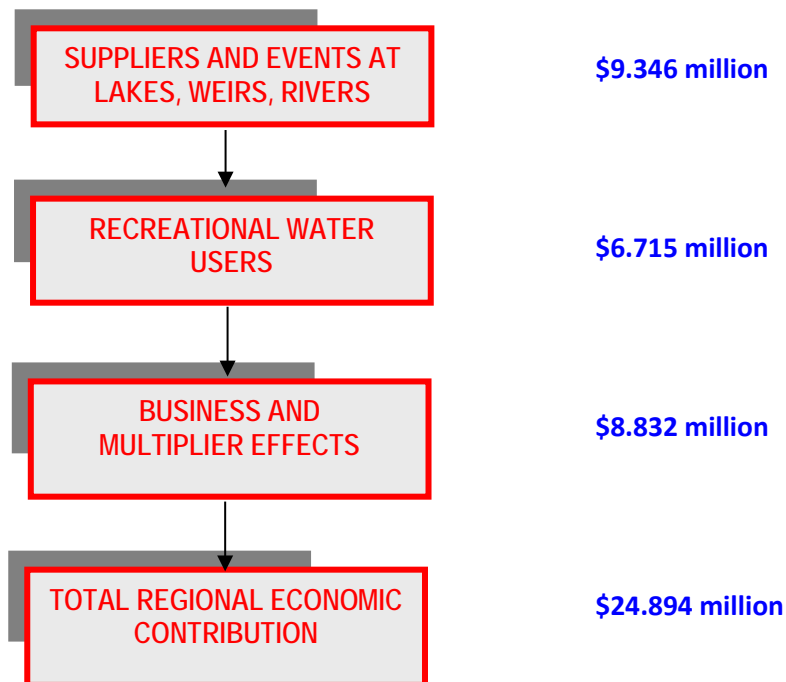


Figure E2 2020-2021 Estimated Recreational Water Economic Contribution: WSM Region

E4 Community and Social Contribution

- The COVID 19 pandemic and the travel restrictions imposed by State Governments created large changes to vacations of WSM recreational water users. A high percentage of interviewed water users, 33.1%, had travel plans disrupted during the 2020-21 year due to periodic lockdowns, concerns over the need to quarantine, and interstate border closures. Of this 33.1% of interviewees, the majority of cancelled trips would have been interstate:
 - 7.9% had planned at least one intrastate trip, which had been cancelled.
 - 84.3% had planned at least one interstate trip, which had been cancelled.
 - 7.9% had planned at least one overseas trip, which had been cancelled.
- The WSM lakes and weir pools have provided very important social and recreational outlets for local residents during the COVID pandemic, at times when intended travel for vacations and other short breaks were necessarily put on hold.
- While the WSM lakes and weir pools were beneficiaries of the cancelled trips, the economic benefits were more than offset by reduced interstate, intrastate and international visitors into the region. The shift to a greater proportion of 'local'² recreational water users began during the first year of COVID restrictions (2019-20) and has been compounded in 2020-21. For example, since 2018-19:
 - The percentage of local recreational water users almost doubled; from 19.5% to 37.2%
 - The percentage of recreational water users from interstate and overseas fell by more than two-thirds; from 13.7% to 4.3%.

² Meaning people from the same Local Government Area

- The estimated total health benefits from WSM residents and all country Victorians participating at WSM recreational water facilities in 2020-21 include:

	WSM Resident Participants	Country Victorian Participants
- Physical: Annual benefit:	\$ 948,553	\$2,455,607
- Mental benefit:	\$ 132,274	\$ 230,749
- Total annual health benefit	\$1,080,828	\$2,686,356
- Last year 2019-20:	\$1,595,466	\$2,561,694

1. INTRODUCTION

1.1 ACKNOWLEDGEMENTS

This project was undertaken during January 2020 to August 2021 by Street Ryan under direction from a Steering Group comprising:

- Mark Fletcher, Project Manager, WDA
- Tony Baker, Statutory and Strategy Manager, Wimmera CMA
- Bernie Dunn, Co-ordinator Water Resources and Recreation Strategy, GWMWater
- James Goldsmith, Wimmera Mallee Recreational Lakes Alliance
- Jeff Woodward, Wimmera Mallee Tourism.

This group provided advice, direction and support in collection of data from Wimmera Southern Mallee businesses, recreational water facility committees of management, and recreational water users. Their input and contribution is gratefully acknowledged.

Street Ryan was also supported by Sport Business Partners in the estimation of health benefits for the recreational water facilities.

1.2 SCOPE

This project was a joint initiative of Wimmera Development Association, Wimmera Catchment Management Authority, GWMWater and Local Councils. It has been designed to assess the economic and social contribution made by the water at local weirs, lakes and rivers to the regional economy and local communities. This is the final assessment in a four-year longitudinal annual study. The project has supported development of facilities and government grant applications as well as planning for future water allocations. It also demonstrates the value of environmental and recreational water to the community and government.

In 2020-21 the project encompassed assessments of 27 lakes, weir pools and rivers around the region and measured contributions in the 'recreational water supply chain' at three levels:

- Level 1: Service providers (supplying products and services to the lakes/weirs) including water, camping/caravanning, maintenance, construction, management, research and catering.
- Level 2: Users of the Recreational Water Lakes/Weir Pools including residents, community groups and visitors.
- Level 3: Local businesses (servicing the users of the lakes/weirs) including accommodation, food services, health, sport and recreation, transport, retail and personal services.

The 2020-21 assessment process involved:

- Level 1: Supplier Organisations
 - Person to person and telephone interviews with Wimmera Southern Mallee recreational water facility supplier organisations.
- Level 2: Recreational Water Users
 - Person to person interviews with 1,976 recreational water facility users (overnight, active and passive day visitors)
- Level 3: Local Businesses
 - Person to person interviews with businesses in towns servicing recreational water facilities (adding to supply chain details of those completed in 2016-17 to 2019-20 to make 150 businesses in total).

The 27 lakes, weir pools and rivers in 2020-21 were:

- Buloke Shire
 - Tchum Lake
 - Lake Watchem
 - Wooroonook Lake
 - Donald Caravan Park Lake (Folletti Lake)
 - Green Lake, Sea Lake
- Horsham Rural City
 - Wimmera River at Horsham
 - Taylors Lake
 - Green Lake
 - Lake Toolondo
- Hindmarsh Shire
 - Wimmera River at Dimboola
 - Wimmera River at Jeparit
 - Nhill Lake
- Northern Grampians Shire
 - Walkers Lake
 - Lake Fyans
 - Lake Bellfield
 - Lake Wartook
 - Lake Lonsdale.
- West Wimmera Shire
 - Lake Charlegrark
 - Lake Wallace
 - Lake Ratzcastle
 - Lake Bringalbert
- Yarriambiack Shire
 - Beulah weir pool
 - Brim weir pool
 - Warracknabeal weir pool
 - Lake Lascelles
 - Lake Marma
- Rural City of Mildura
 - Lake Ouyen.

Person to person interviews were conducted during January 2021 to April 2021. The interview process was restricted by COVID pandemic lockdowns. This affected all participation during the usually very popular Easter and ANZAC holiday periods. Although respondents were asked to comment on their usage of recreational facilities over the entire 2020-21 year, the nature of the individuals and groups may be affected by the months in which interviews were conducted and allowance has been made for COVID 19 restrictions imposed on Metropolitan Melbourne and Regional Victoria throughout the year.

School holiday periods, public holidays and major events (although many of these were cancelled in 2020-21) were explicitly included in the interview processes, and the type of visitation during other seasons is likely to be somewhat different. However, bias associated with a restricted interview period has been addressed in discussions with service providers at the recreational water facilities and committees of management.

1.3 ADJUSTMENTS TO THE ASSESSMENT IN 2020-21

There were no changes to the recreational water assessment approach in 2020-21 nor to the recreational water bodies.

The assessment period was reduced. Interviews with lake, river and weir users were undertaken over a shorter period of time (January to April) with some interruptions due to the COVID 19 pandemic. The number of people interviewed met the targets for the year however the reduced coverage probably changed the relative socio-demographic mix of total annual participation. For example, activities that are strongly represented in the interview sample during January to April such as swimming and water skiing, give way to greater proportional participation in non-water immersion activities (such as fishing, canoeing, and picnicking) in the cooler months. The COVID 19 restrictions also resulted in higher estimates for 'passive' recreational water users through many residents walking, cycling and/or jogging along waterways as a critical part of their exercise 'escape' during pandemic lockdown periods.

2. WIMMERA SOUTHERN MALLEE REGION RESULTS

2.1 DEMOGRAPHIC AND LOCATION CHARACTERISTICS OF INTERVIEWEES

Features of WSM recreational waterbodies in 2020-21 were:

- A majority of male (50.5%) resident and visitor users and 49.5% female users (compared with 52.5% males and 47.5% females in 2019-20).
- Further confirmation that the recreational water offers activities ‘for a lifetime’, with good levels of participation across all age ranges, as shown in Figure 2.1. In 2020-21 there was continuation of strong participation numbers among younger water users (in the less than 15 years and 15-24 years age groups)
- A major source of recreational activities for local residents and country Victorians, even more focused in the years affected by the COVID pandemic.

Families, retired couples, and friendship groups are the most frequent users of the recreational water facilities, with the 25 to 44 years age cohort again being the largest, and 45-64 years the second largest, as shown in Figure 2.1 and Table 2.1.

Figure 2.1 Age Structure of WSM Recreational Water Users

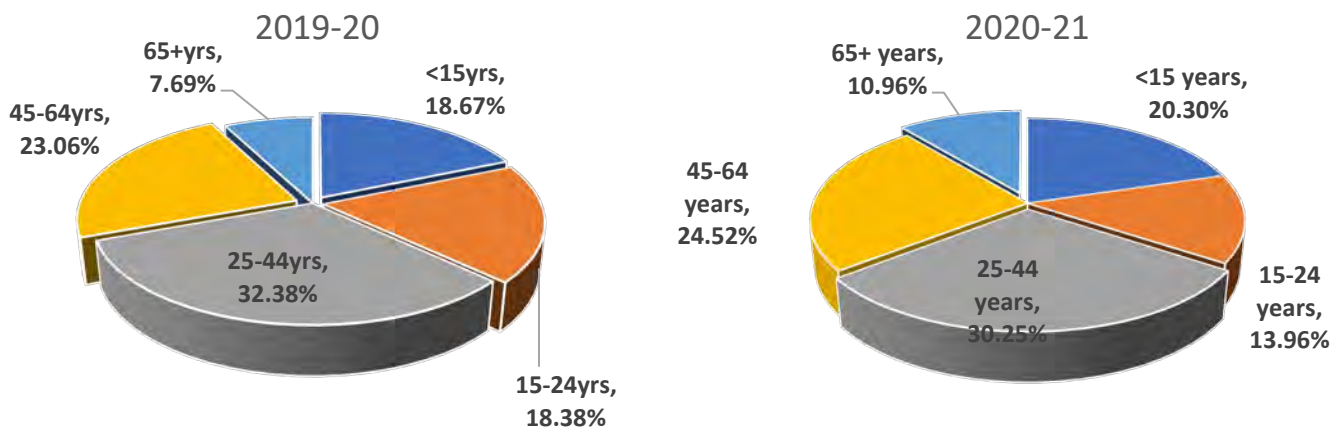
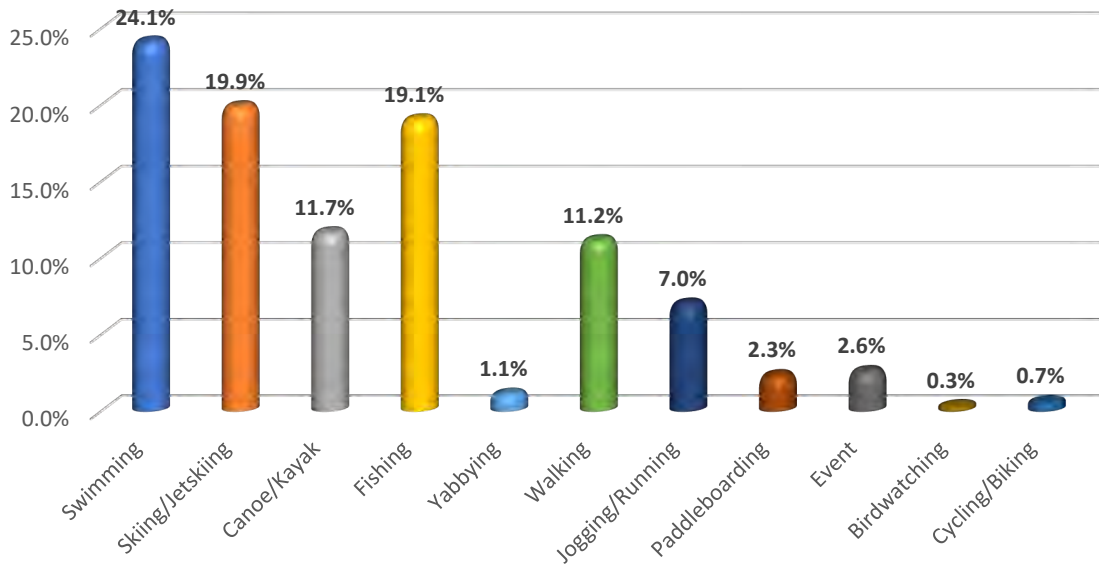


Table 2.1 Recreational Water Users by Age and Local Government Area

	<15 years	15-24 years	25-44 years	45-64 years	65+ years	Total Sample
Buloke Shire	22.36%	17.51%	29.54%	22.57%	8.02%	474
Hindmarsh Shire	27.19%	19.82%	28.11%	18.43%	6.45%	221
Horsham Rural City	11.05%	8.36%	32.35%	36.66%	11.59%	372
Northern Grampians Shire	25.44%	14.63%	35.54%	16.72%	7.67%	288
West Wimmera Shire	17.53%	13.92%	32.99%	18.04%	17.53%	194
Yarriambiack Shire	22.16%	12.78%	22.73%	25.00%	17.33%	352
Mildura Rural City (Ouyen)	12.00%	5.33%	38.67%	38.67%	5.33%	75
Total	20.30%	13.96%	30.25%	24.52%	10.96%	1,976

Recreational water activities of swimming, fishing, power boating (including skiing and jet skiing)³, and unpowered watercraft, were the most popular recreational uses of the waterways in 2020-21 as shown in Figure 2.2. Participation in events decreased substantially in 2020-21 (with many cancellations due to COVID 19 restrictions or uncertainty). On average, water users engaged in 2.3 recreational activities during visits.

Figure 2.2 Recreational Activities at Lakes and Weirs, 2020-21⁴



Estimated recreational water users in 2020-21, detailed in Table 2.2, at the selected facilities are:

- Overnight visitors: 38,355 (18.2% fewer than estimated in 2019-20)
- Visit nights: 157,684 (10.1% fewer than 2019-20)
- Average length visit - overnight visitors: 4.11 nights (compared with 3.75 in 2019-20)
- Local active participation: 54,948 (13.2% less than 2019-20)
- Local passive participation: 158,391 (8.0% more than 2019-20)
- Total recreational water participation: 251,399 (10.9% less than 2019-20)
- Number of people involved: 66,009 people (1.6% fewer than 2019-20)
- Number of WSM residents involved: 32,127 people (6.2% more than 2019-20)
- Number of country Victorian residents: 54,379 people (8.0% more than 2019-20)

³ Power boating is disallowed or restricted at several of the WSM recreational water bodies

⁴ Note: Multiple activities are counted. For example, people who attend an event, say for fishing, are counted as both fishing and attending an event.

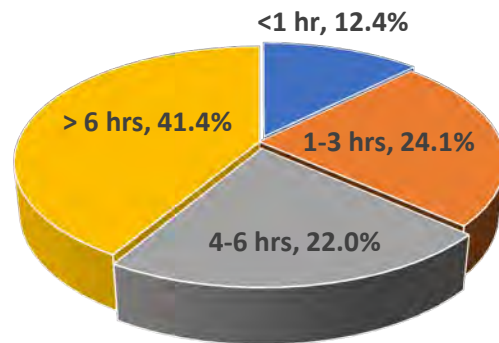
Table 2.2 Estimated Recreational Water Facility Users, 2020-21

	Overnight Visitors	Visit Nights	Active Day Participants	Passive Day Participants	Total Water Participants 2020-21
Buloke Shire					
Donald Folletti Park	933	3,835	1,081	2,995	5,009
Green Lake, Sea Lake	493	3,939	3,120	n.a.	3,613
Tchum	898	4,899	2,050	1,320	4,268
Watchem	847	5,953	581	n.a.	1,429
Wooroonook	1,004	4,345	794	n.a.	1,798
Total Buloke	4,175	22,971	7,626	4,315	16,116
Hindmarsh Shire					
Wimmera - Dimboola	1,955	9,071	4,709	13,850	20,513
Wimmera - Jeparit	533	1,357	1,095	5,850	7,477
Nhill Lake	15	35	350	8,503	8,868
Total Hindmarsh	2,502	10,463	6,153	28,203	36,858
Horsham Rural City					
Wimmera - Horsham	2,418	10,406	9,859	66,730	79,007
Green Lake	0	0	250	500	750
Taylors Lake	1,841	7,771	1,347	n.a.	3,189
Toolondo	45	95	112	n.a.	157
Total Horsham	4,305	18,272	11,568	67,230	83,103
Northern Grampians					
Bellfield	1,380	3,078	1,895	10,064	13,339
Fyans	16,073	61,238	1,823	2,751	20,646
Lonsdale	90	254	0	950	1,040
Walkers	1,067	5,134	1,342	n.a.	2,409
Wartook	66	206	254	345	665
Total Northern Grampians	18,676	69,909	5,313	14,110	38,099
West Wimmera					
Charlegrark	1,055	5,255	1,688	n.a.	2,743
Ratzcastle	55	144	0	n.a.	55
Bringalbert	45	104	0	n.a.	45
Wallace	1,226	3,850	921	12,068	14,215
Total West Wimmera	2,381	9,352	2,609	12,068	17,058
Yarriambiack Shire					
Brim Weir Pool	1,178	3,937	3,643	n.a.	4,822
Beulah Weir Pool	717	2,308	955	n.a.	1,672
Lascelles	1,374	7,348	6,383	4,233	11,990
Marma	1,007	3,596	732	9,250	10,989
Warracknabeal Weir Pool	1,840	8,983	2,464	13,983	18,287
Total Yarriambiack Shire	6,116	26,172	14,178	27,465	47,759
Mildura Rural City					
Lake Ouyen	200	544	7,500	5,000	12,700
Total WSM	38,355	157,684	54,948	158,391	251,694
% change on 2019-20 assessment	-18.16%	-10.08%	-12.83%	-8.04%	-10.79%

Note: There were 27 lakes and weirs in both the 2020-21 and 2019-20 assessments.

Overnight visitor participants are those who are staying on-site at, or near, the selected waterway/waterbody for recreation. Active day participants are people engaging in a direct water related activity (swimming, fishing, canoeing, skiing, etc). Passive day participants are people engaging in a recreational activity in close proximity to the lake, weir or river due to the amenity and facilities offered at the site (walking or running along a track, picnicking, etc). The duration of daily physical activities is most often more than 6 hours, as shown in Figure 2.3, with the majority of users taking advantage of full day visits.

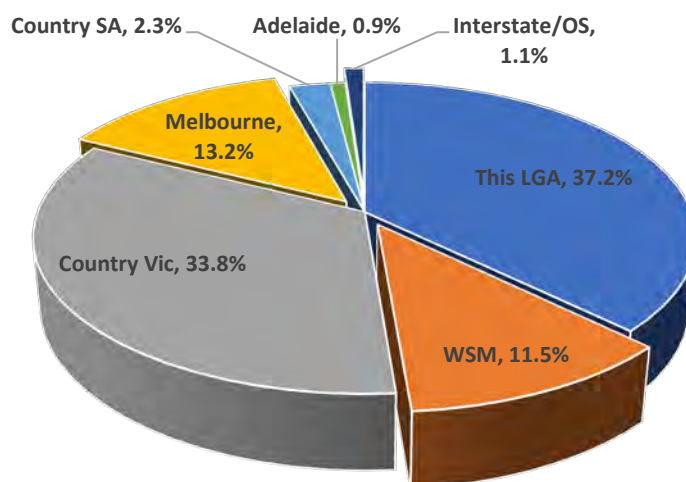
Figure 2.3 Duration of Daily Physical Activities by WSM Recreational Water Users



The majority of users and participants at the recreational water facilities continue to be regional Victorians, as shown in Figure 2.4. The distribution of residential locations of day and overnight visitors to the recreational water facilities in 2020-21 was:

- Visitors who live in the same Shire or City as the facility: 37.2%
- Visitors who live in another part of the Wimmera Southern Mallee: 11.5%
- Visitors from other regional (country) Victoria: 33.8%
- Visitors from regional South Australia: 2.3%
- Visitors from Melbourne: 13.2%
- Visitors from Adelaide: 0.9%
- Visitors, other interstate/overseas locations and no fixed address: 1.1%

Figure 2.4 Residential Location of Recreational Water Visitors



2.2 ECONOMIC CONTRIBUTION

Table 2.3 presents estimates of the economic contribution from the recreational water facilities at the three levels in the supply chain by Local Government Area, revealing:

- Suppliers (including supplier businesses, statutory agencies, community groups and Committees of Management) contributed an estimated \$9.346 million.
- Recreational water users contributed an estimated \$6.715 million to the local areas in which the facilities are located.
- Businesses in the immediate, and nearby, towns and the flow-on effects from this expenditure, contributed an estimated \$8.832 million to the local government areas in the Wimmera Southern Mallee from the recreational water facility users and suppliers.

The 27 assessed recreational water facilities made a total regional economic contribution of \$24.894 million in 2020-21. This comprised:

- Buloke Shire: \$3.598 million
- Hindmarsh Shire: \$1.921 million
- Horsham Rural City: \$5.401 million
- Northern Grampians Shire: \$7.323 million
- West Wimmera Shire: \$1.161 million
- Yarriambiack Shire: \$4.747 million
- Mildura Rural City (Ouyen): \$0.742 million
- Total contribution: \$24.894 million.

Table 2.3 Estimated Economic Contribution by WSM Recreational Water Facilities: Suppliers, Recreational Users and Regional Businesses, 2020-21

	Suppliers	Water Users	Businesses	Total
Buloke	\$1,872,698	\$665,504	\$1,060,296	\$3,598,498
Hindmarsh	\$549,610	\$666,557	\$704,498	\$1,920,665
Horsham	\$1,997,827	\$1,196,466	\$2,207,106	\$5,401,399
Northern Grampians	\$1,856,162	\$2,686,754	\$2,780,156	\$7,323,073
West Wimmera	\$454,591	\$341,715	\$364,866	\$1,161,172
Yarriambiack	\$2,225,853	\$999,750	\$1,521,847	\$4,747,449
Mildura (Ouyen)	\$389,462	\$158,725	\$193,630	\$741,817
Total WSM Region	\$9,346,203	\$6,715,472	\$8,832,398	\$24,894,074

Lake Fyans, in the heart of the Grampians tourism region, was the water facility generating the largest estimated contribution from users, with overnight visitors making the majority of this contribution. Wimmera River at Horsham had the next greatest estimated contribution from users, followed by the Wimmera River at Dimboola, Warracknabeal Weir Pool, Lake Bellfield at Halls Gap and Lake Lascelles at Hopetoun. Lake Fyans and Lake Bellfield are within the Grampians National Park tourism precinct, while all the next five largest economic contribution lakes and weirs are located within the town boundaries of an urban area (including Lake Bellfield which is on the edge of Halls Gap township) and are rated among the top local assets by many residents and visitors. The lakes estimated to have the greatest economic contribution from users that are not within a town boundary or urban area (excluding Lake Fyans) in 2020-21 were Taylors Lake, Lake Charlegrark, and Brim Weir Pool.

These estimates are detailed in Table 2.4. Average daily expenditures by overnight and active day visitors (per person per day) are shown in Figures 2.5 and 2.6.

Table 2.4 Estimated Expenditure by Participants at Recreational Water Facilities 2020-21

	Expenditure Overnight Visitors	Expenditure Active Day Users	Expenditure Passive Day Users	TOTAL	% Change on Last Year 2019-20
Buloke Shire					
Donald Folletti	\$124,689	\$14,408	\$8,394	\$147,491	-18.35%
Green Lake, Sea Lake	\$79,360	\$60,840	n.a.	\$140,200	15.98%
Tchum	\$99,197	\$30,750	\$3,766	\$133,713	-16.81%
Watchem	\$127,597	\$10,556	n.a.	\$138,153	15.00%
Wooroonook	\$93,296	\$12,651	n.a.	\$105,946	0.09%
Total Buloke	\$524,140	\$129,204	\$12,160	\$665,504	-3.31%
Hindmarsh Shire					
Wimmera – Dimboola	\$432,729	\$105,039	\$36,694	\$574,463	29.68%
Wimmera – Jeparit	\$31,984	\$12,785	\$16,394	\$61,163	9.64%
Nhill Lake	\$1,993	\$3,813	\$25,126	\$30,932	-39.26%
Total Hindmarsh	\$466,707	\$121,637	\$78,214	\$666,557	21.26%
Horsham Rural City					
Wimmera River – Horsham	\$583,197	\$188,047	\$210,200	\$981,444	16.29%
Green Lake	\$0	\$4,838	\$1,478	\$6,315	-71.58%
Taylor's Lake	\$176,605	\$24,379	n.a.	\$200,984	7.68%
Toolondo	\$5,539	\$2,184	n.a.	\$7,723	-70.17%
Total Horsham	\$765,341	\$219,448	\$211,677	\$1,196,466	10.92%
Northern Grampians					
Bellfield	\$225,577	\$49,843	\$34,721	\$310,141	-8.57%
Fyans	\$2,185,110	\$26,467	\$8,802	\$2,220,379	1.24%
Lonsdale	\$6,914	\$0	\$2,565	\$9,479	-68.40%
Walkers	\$110,568	\$27,676	n.a.	\$138,243	212.00%
Wartook	\$4,705	\$3,806	\$949	\$8,511	-75.80%
Total Northern Grampians	\$2,532,874	\$107,792	\$47,038	\$2,686,754	1.70%
West Wimmera					
Charlegrark	\$130,800	\$28,527	n.a.	\$159,327	-19.95%
Ratzcastle	\$1,538	\$0	n.a.	\$1,538	-93.07%
Bringalbert	\$2,370	\$0	n.a.	\$2,370	-70.02%
Wallace	\$118,092	\$16,118	\$44,271	\$178,480	-58.07%
Total West Wimmera	\$252,800	\$44,645	\$44,271	\$341,715	-47.81%
Yarriambiack Shire					
Brim	\$98,952	\$67,844	n.a.	\$166,796	-12.73%
Beulah	\$48,919	\$13,590	n.a.	\$62,509	-40.81%
Lascelles	\$176,559	\$108,519	\$12,077	\$297,155	-21.89%
Marma	\$88,561	\$9,957	\$27,334	\$125,852	-23.64%
Warracknabeal Weir Pool	\$284,438	\$27,381	\$35,621	\$347,439	-7.92%
Total Yarriambiack Shire	\$697,428	\$227,291	\$75,031	\$999,750	-18.01%
Mildura Rural City					
Lake Ouyen	\$14,440	\$129,000	\$15,285	\$158,725	36.69%
Total WSM	\$5,253,729	\$979,017	\$483,675	\$6,742,124	-2.97%

Estimates of the direct expenditure by users of the lakes and weirs at local businesses in the Wimmera Southern Mallee municipalities are detailed in Table 2.5.

Table 2.5: Estimated Functional Expenditure by Lake and Weir Users at WSM Businesses from Recreational Water User Customers, 2020-21

User Expenditure at Regional Businesses	Café, Milk bar, Eat in Meal, Takeaway	Supermarkets, Groceries	Fuel, vehicle and equipment maintenance	Hotels, Motels, Entertainment	All Other (inc health needs, sports goods, books, hardware)	Total
Buloke	\$105,433	\$263,706	\$109,788	\$175,354	\$11,224	\$665,504
Hindmarsh	\$302,778	\$137,051	\$25,746	\$187,342	\$13,641	\$666,557
Horsham	\$444,047	\$212,576	\$164,802	\$283,224	\$91,818	\$1,196,466
Northern Grampians	\$353,745	\$846,612	\$160,727	\$1,025,864	\$323,252	\$2,686,754
West Wimmera	\$84,042	\$112,401	\$29,891	\$88,093	\$27,289	\$341,715
Yarriambiack	\$302,025	\$344,464	\$140,827	\$141,774	\$70,660	\$999,750
Mildura (Ouyen)	\$31,962	\$110,934	\$8,650	\$4,829	\$2,350	\$158,725
Total	\$1,620,556	\$2,019,428	\$638,852	\$1,896,403	\$540,233	\$6,715,472

Figure 2.5 Average Expenditure by Overnight Visitors to Recreational Water Facilities (per person per day)

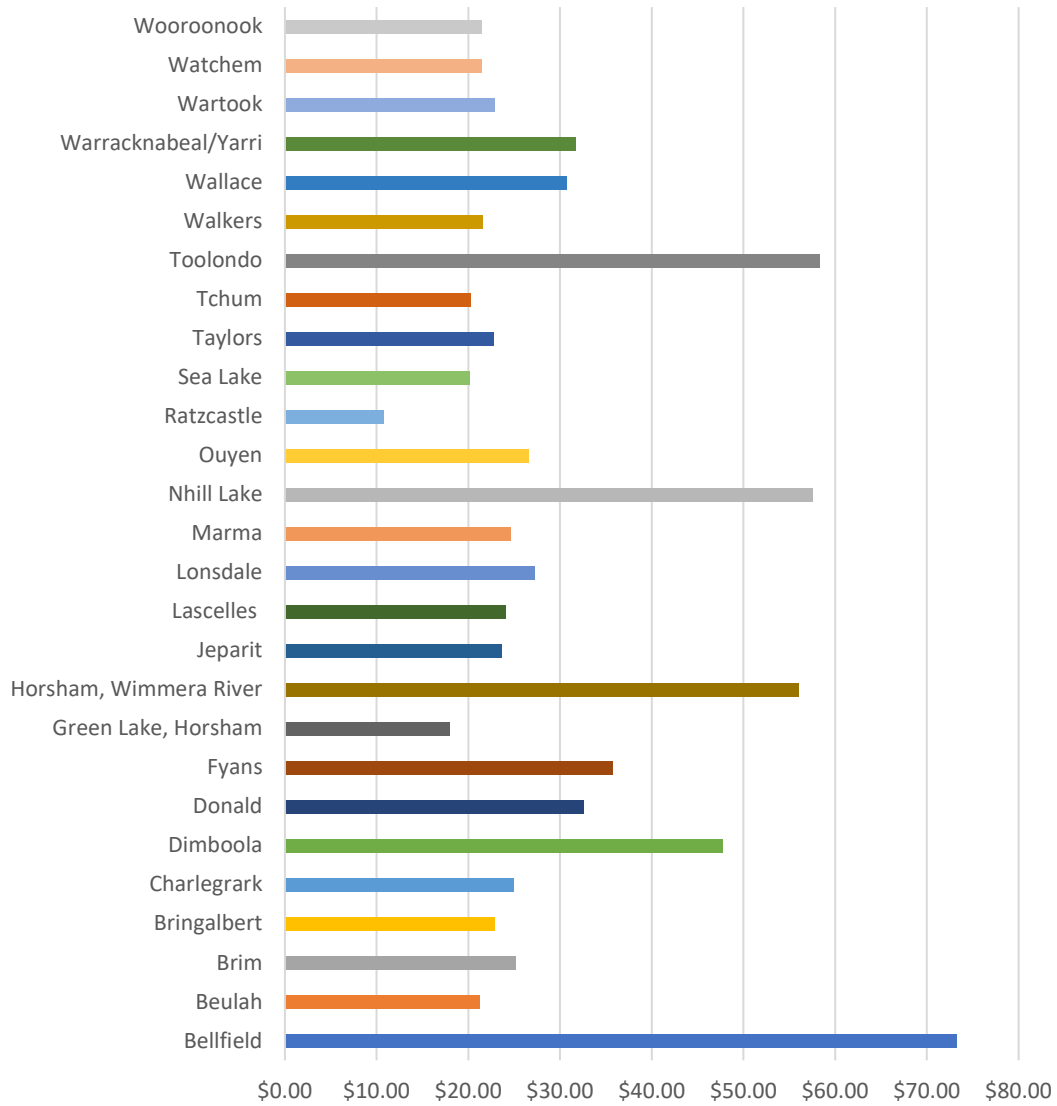
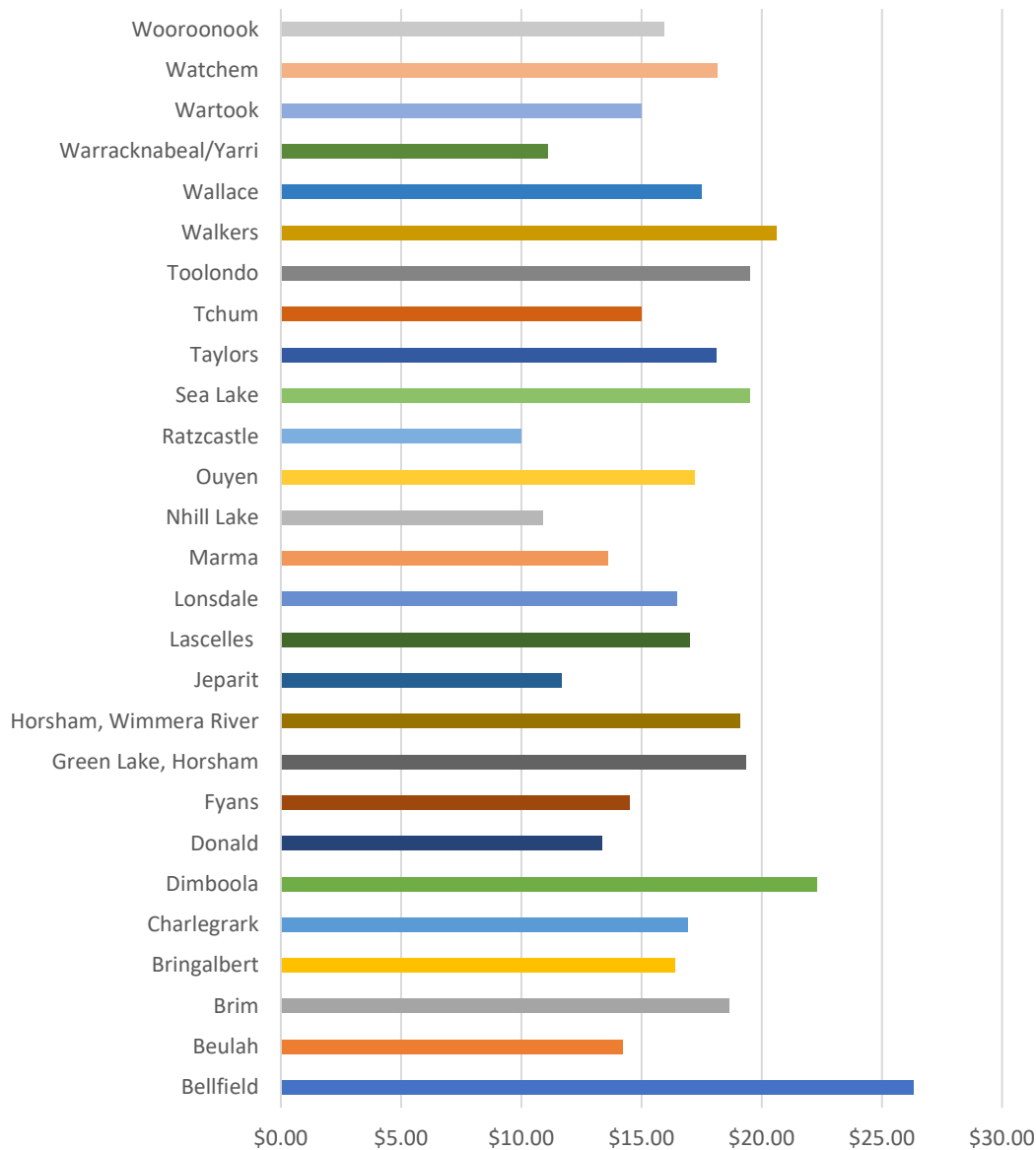


Figure 2.6 Average Expenditure by Active Day Visitors to Recreational Water Facilities (per person per day)



2.3 HEALTH AND COMMUNITY CONTRIBUTION

Local communities report that the Wimmera Southern Mallee’s recreational water facilities make an extremely important contribution to the social fabric of the region’s towns, provide a critical outlet for physical and mental relaxation, enhance the amenity of towns and rural areas, and improve the health of residents and visitors to the region. Community impacts are strong across all recreational water facilities.

Physical health benefits analysed in this assessment are derived from the prevention of chronic diseases (such as breast cancer, coronary heart disease, diabetes, bowel cancer and stroke). Mental health benefits are derived from the prevention of anxiety and depression.

The value of Wimmera Southern Mallee recreational water residents' health contribution has been based on the prevention of these physical and mental diseases among the 2020-21 recreational water participation base⁵ and are considered conservative estimates. They are focussed on selected health issues which are evidenced to be attributed to physical inactivity. Estimated health benefits to country Victorians, directly from the water facilities in 2019-20 and 2020-21 are:

	2020-21	2019-20
- Physical health benefits	\$2,455,607	\$2,266,319
- Mental health benefits	\$ 230,749	\$ 295,375
- Total	\$2,686,356	\$2,561,694.

⁵ Assessment using methodology provided by Sport Business Partners

3. RECREATIONAL WATER FACILITIES IN BULOKE SHIRE

3.1 OVERVIEW

Buloke Shire is the fourth largest local government area in terms of population, and the second largest in area, in the Wimmera Southern Mallee. Although it is serviced by the Wimmera Mallee Pipeline it is frequently included in Victoria's Loddon Mallee North region. At June 30th, 2020 it had an estimated resident population of 6,101⁶ having decreased by 0.4% in the last year; the greatest rate of decrease in the region. The main townships are Wycheproof, Donald, Charlton, Birchip and Sea Lake, with many smaller villages/towns that have dwindled since with the aggregation and automation of grain farming (such as Berriwillock, Culgoa, Watchem, Nullawil and Nandaly). The towns mostly servicing the selected recreational water facilities in Buloke Shire are Donald, Birchip, Charlton, and Watchem.

Buloke's economy is dominated by agriculture (mainly dry land cropping and livestock) which generates more than half the value of production and employed 29.2% of all workers in 2016. The other major employing industries in Buloke Shire are, in order:

- Health care and social assistance (12.2%)
- Education and training (9.8%).
- Retail trade (8.1%)
- Construction (5.4%).

Several Buloke Shire towns have high levels of socio-economic disadvantage. The Australian Bureau of Statistics uses data from its Censuses of Population and Housing to calculate SEIFA Indices (Socio-Economic Indices for Areas). These indices provide an overview or summary measure of Census data, rather than looking at individual items. The indices rank geographic areas across Australia in terms of their relative socio-economic advantage and disadvantage. For each index, every geographic area in Australia is given a SEIFA score which measures how relatively 'advantaged' or 'disadvantaged' that area is compared with other areas in Australia.

Table 3.1 shows that the Shire's larger towns Sea Lake, Donald, Wycheproof, Charlton, and Birchip are within the most disadvantaged 30% of all 'suburbs' in Victoria, with:

- Sea Lake being the most disadvantaged, ranking 106th of all 2,672 suburbs in the State.
- Wycheproof ranking 124th
- Charlton ranking 252nd
- Donald ranking 277th
- Birchip ranking 706th

The smaller communities of Berriwillock, Watchem and Nandaly are relatively advantaged.

⁶ ABS, Regional Population Growth by LGA 2020 (released March 2021)

Table 3.1: SEIFA Indices⁷ for Buloke Shire Suburbs, 2016

	Usual Resident Population	SEIFA Score	Ranking within Victoria			Minimum score for SA1s in area ⁸	Maximum score for SA1s in area
			Rank	Decile	Percentile		
Berriwillock	184	1003	1345	6	31	1003	1003
Birchip	702	970	706	3	27	967	1002
Charlton	1,050	923	252	1	10	907	1038
Donald	1,498	927	277	2	11	891	1036
Nandaly	39	1024	1810	7	68	1024	1024
Sea Lake	640	896	106	1	4	869	1024
Watchem	114	1002	1294	5	49	1002	1002
Wycheproof	635	900	124	1	5	868	1007

Note: The SEIFA Index used in this table relates to Socio-Economic Advantage and Disadvantage, 2016.

The Australian Bureau of Statistics broadly defines relative socioeconomic advantage and disadvantage in terms of people's *access to material and social resources, and their ability to participate in society*. There were 2,672 state suburbs in Victoria. A score of 1,000 or above tends to indicate an area which is relatively advantaged, and a score below 1,000 is an area which is relatively disadvantaged. In any of the Wimmera Southern Mallee 'suburbs' there are likely to be pockets which are relatively more advantaged and disadvantaged than the suburb as a whole. The minimum and maximum scores for these smaller pockets (shown as SA1s, Statistical Area 1s) are presented in the final two columns of the table.

Fisheries Victoria has stocked 231,750 fingerlings and advanced stocker fish in the selected lakes in Buloke Shire during the three-year period including 2020-21⁹. Native species have been the main focus of fish stocking programs (95% of all fish stocked) in Buloke Shire with golden perch and silver perch stocked in all five lakes. Details of the number and species of stockings over this period is summarised in Table 3.2.

Table 3.2 Fish Released in Buloke Shire Selected Waterways 2018-2021

Units stocked (fingerlings and/or advanced stockers)	Rainbow Trout	Murray Cod	Golden Perch	Silver Perch	Total
Donald Folletti Park	2,250		11,000	22,000	35,250
Green Lake, Sea Lake			20,000	30,000	50,000
Tchum Lake	7,000		17,000	32,500	56,500
Watchem Lake			15,000	30,000	45,000
Wooroonook Lake			15,000	30,000	45,000

3.2 SELECTED RECREATIONAL WATER FACILITIES

3.2.1 Lake Wooroonook

Lake Wooroonook is a natural lake situated 13 kilometres west of Charlton on the Borung Highway, 21 kilometres south of Wycheproof and 23 kilometres north-east of Donald. The Lake Wooroonook recreational water facility is located at the western end of a larger natural lake system known as the Wooroonook Lakes. The middle and eastern lakes have irregular water volumes.

⁷ SEIFA indices are calculated by the Australian Bureau of Statistics using a range of variables on income, employment, housing, etc.

⁸ SA1s are Statistical Areas Level 1 – a 'neighbourhood' scale of geography.

⁹ Stocking fish in recreational waterways is considered similar to providing an asset, for which there will be a return on investment over three years.

The lake volume is 700 megalitres. Annual 'top-up' volume from the Wimmera Mallee Pipeline meets the evaporation and seepage losses and is supplemented by natural runoff in wetter periods. The pipeline supply is delivered at a heavily subsidised rate per megalitre which reflects the engagement undertaken by GWMWater with its customer base in development of pricing submissions.

The waterway manager (under the Marine Safety Act, 2010) for Lake Wooroonook is Buloke Shire Council, and foreshore management is the responsibility of the Wooroonook Committee of Management.

The system was an important source of water for Aboriginal communities over tens of thousands of years and, more recently, in Charlton's early colonial settlement as a place for fishing, swimming and boating. The current facilities include 10 powered sites, an amenities block, BBQ, boat launching area, playground and a pontoon. The lake is well suited to nature walks, water skiing, swimming, fishing, and camping or caravanning on the foreshore. Adjacent wetlands in the system are suited to duck hunting in season.



Wooroonook attracts retired couples and small groups seeking a quiet and relatively isolated location for camping and caravanning. On weekends during warmer months, the lake is popular as a fishing destination.

Estimated overnight visitors and day trip users of Lake Wooroonook in 2016-17 to 2020-21 are summarised in Table 3.3. These estimates have been developed through interviews on site, online surveys, and discussions with Wooroonook Committee of Management representatives.

Table 3.3: Estimated Overnight and Day Visitors to Lake Wooroonook, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2016-17	764	3,630	1,094	1,858
2017-18	1,320	4,903	1,092	2,412
2018-19	1,523	6,596	1,105	2,628
2019-20	1,108	4,363	812	1,920
2020-21	1,004	4,345	794	1,798
% per annum change	7.06%	4.60%	-7.69%	-0.82%
% 2019-20 to 2020-21	-9.44%	-0.40%	-2.20%	-6.38%

3.2.2 Tchum Lake

Tchum Lake system is located on the Birchip-Wycheproof road, about 8 kilometres east of Birchip. The natural lakes area includes sections to the north and south of the road. The southern lake has been modified to provide for permanent recreational water activities, while the northern lakes area is an irregular wetlands area.

The recreational (southern) lake volume is approximately 730 megalitres of water. Annual 'top-up' volume from the Wimmera Mallee Pipeline meets the evaporation and seepage losses and is supplemented by natural runoff in wetter periods. The pipeline supply is delivered at a heavily subsidised rate per megalitre which reflects the engagement undertaken by GWMWater with its customer base in development of pricing submissions. The waterway manager (under the Marine Safety Act, 2010) is the Tchum Lake Aquatic Club, and the club is also responsible for foreshore management.

Tchum Lake is a popular holiday spot for campers and water skiers. Lake users also participate in fishing and swimming. The lake is very busy at Easter and other summer holiday periods, and tends to be relatively quiet at other times of the year. As a holiday-period recreational lake facility, Tchum attracts larger family groups rather than the retired and 'grey nomad' caravanning group that are frequent users of other Wimmera Southern Mallee water facilities.

There is a membership structure which allows regular users to access powered and unpowered camping sites at reduced rates. In recent years, the Committee of Management has arranged an on-site manager during busier months.

Estimated overnight visitors and day trip users of Tchum Lake during 2016-17 to 2020-21 are summarised in Table 3.4. These estimates have been developed through interviews on site, online surveys, and discussions with the Committee of Management/Aquatic Club representatives.

Table 3.4: Estimated Overnight and Day Visitors to Tchum Lake, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	1,344	3,830	3,510	1,459	6,313
2017-18	1,208	3,790	3,725	1,500	6,433
2018-19	1,622	5,450	3,455	1,550	6,627
2019-20	912	5,170	2,203	1,318	4,432
2020-21	898	4,899	2,050	1,320	4,268
% per annum change	-9.58%	6.35%	-12.58%	-2.47%	-9.32%
% 2019-20 to 2020-21	-1.54%	-5.25%	-6.93%	0.19%	-3.70%



3.2.3 Lake Watchem

Part of the Djadjawrybg and Djabwyrung traditional lands, Watchem was settled by Europeans in the 1870's. Lake Watchem is located on the Watchem-Warracknabeal road just 1.3 kilometres to the west of Watchem township and the Sunraysia Highway. It is a focal point of the town, which now has a very limited commercial centre (consisting of a general store, hotel, aquatic centre/pool, and other sports facilities).

The lake has a small island in the centre which breaks waves created by speed boats and makes Watchem a good lake for water skiing. The lake is also established for swimming, fishing and camping/caravanning. Powered sites are available for \$20 per night and unpowered sites for \$10 per night.

Lake Watchem holds approximately 260 megalitres of water. Annual 'top-up' volume from the Wimmera Mallee Pipeline meets the evaporation and seepage losses and is supplemented by natural runoff in wetter periods. The pipeline supply is delivered at a heavily subsidised rate per megalitre which reflects the engagement undertaken by GWMWater with its customer base in development of pricing submissions. The waterway manager (under the Marine Safety Act, 2010) is the Lake Watchem Committee of Management, and boating activities are subject to Victorian state boating regulations.



Lake Watchem users peak during the Christmas holiday period when over 350-400 people visit in family groups and again in the Easter period. At other times, the lake is frequented by grey nomad type caravanners, and an estimated 581 local/regional participants in 2020-21.

Estimated overnight visitors and day trip users of Lake Watchem in 2016-17 to 2020-21 are summarised in Table 3.5. These estimates have been developed through interviews on site and discussions with the Committee of Management representatives.

Table 3.5: Estimated Overnight and Day Visitors to Lake Watchem, 2016-17 and 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2016-17	1,139	3,203	900	2,039
2017-18	1,110	3,738	1,030	2,140
2018-19	1,193	5,274	1,076	2,270
2019-20	830	5,041	556	1,387
2020-21	847	3,745	581	1,429
% per annum change	-7.13%	3.99%	-10.35%	-8.51%
% 2019-20 to 2020-21	2.07%	-25.70%	4.49%	3.04%

3.2.4 Donald's Folletti Caravan Park Lake

Folletti Caravan Park Lake is a small recreational facility in the heart of the Donald urban area. It is mostly used for fishing, kayaking/canoeing and environmental amenity (walks, picnics and camping on the foreshore). Powered sites are available for \$20 per night. As a centrally located, urban lake, many of the visitors, in the past, stayed for extended periods to access facilities in Donald township and/or as a base to visit friends and relatives. Since 2017-18 the local football club has had responsibility for many of the management functions at the lake, on behalf of Council (which had previously employed a non-resident part time manager). The number of visitors using the lake and the lake environs improved substantially in 2017-18, (although visit nights reduced somewhat due to removal of some tenants who had become semi-permanent) and overnight visits further increased in 2018-19, while in 2019-20 overnight visit numbers were down but the length of stay increased.

Folletti Caravan Park Lake holds 50 megalitres of water. Annual 'top-up' volume from the Wimmera Mallee Pipeline meets the evaporation and seepage losses and is supplemented by natural runoff in wetter periods. The pipeline supply is delivered at a heavily subsidised rate per megalitre which reflects the engagement undertaken by GWMWater with its customer base in development of pricing submissions. The waterway manager (under the Marine Safety Act, 2010) is Buloke Shire Council, and boating activities are subject to Victorian state boating regulations.

Estimated overnight visitors and day trip users of Folletti Caravan Park Lake during 2016-17 to 2020-21 are summarised in Table 3.6. These estimates have been developed through interviews on site, and discussions with Committee of Management representatives.

Table 3.6: Estimated Overnight and Day Visitors to Folletti Caravan Park Lake, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	912	4,742	2,197	3,645	6,754
2017-18	1,253	4,320	2,341	3,680	7,274
2018-19	1,575	5,607	2,320	3,680	7,575
2019-20	1,110	5,682	1,743	3,652	6,505
2020-21	933	3,835	1,081	2,995	5,009
% per annum change	0.57%	-5.17%	-16.26%	-4.79%	-7.20%
% 2019-20 to 20-21	-15.99%	-32.50%	-37.99%	-17.99%	-23.01%



3.2.5 Green Lake, Sea Lake

Green Lake at Sea Lake was empty during the millennium drought of the early 2000s. It filled from natural inflows and pipeline supply in 2011-12, but the high seepage losses that occurred resulted in a collective decision that there be no further pipeline supply until the seepage issues were addressed. In 2018, following a great deal of work by the community, state and local government agencies a State Government funded remediation project to rework and compact the lake bed was completed.

A GWMWater pipeline supply from the Murray River commenced in September 2018 and reached full supply by September 2019.

The estimated recreational usage of the lake during the early period after its redevelopment, in 2018-19 to 2020-21 is presented in Table 3.7.

Table 3.7: Estimated Overnight and Day Visitors to Green Lake, Sea Lake, 2018-19 to 2020-21

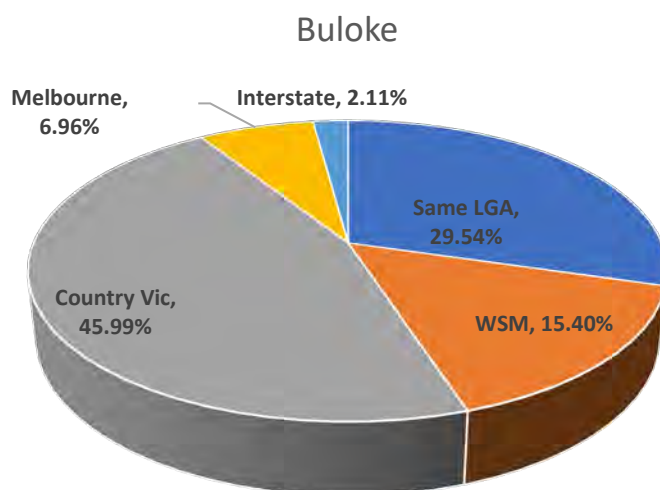
	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2018-19	168	600	1,962	2,129
2019-20	488	3,472	2,722	3,209
2020-21	493	3,939	3,120	3,613
% 2019-20 to 2020-21	1.10%	13.45%	14.64%	12.58%



3.3 ECONOMIC CONTRIBUTION

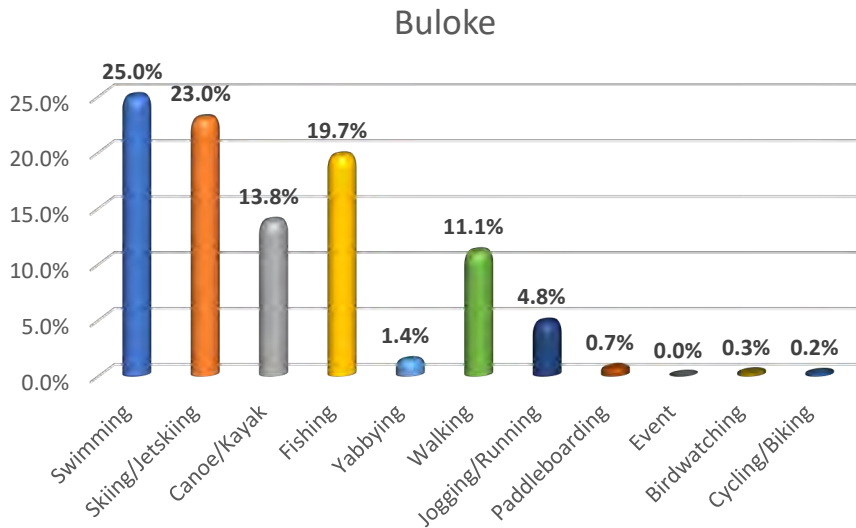
Figure 3.1 shows 45% of recreational water users at Buloke were Wimmera Southern Mallee residents in 2020-21, and over 90% from WSM region and other parts of country Victoria. Melbourne and interstate visitors dropped to just 9% of total visitation.

Figure 3.1 Residential Location of Recreational Water Users, Buloke Shire



During 2018-19 Buloke Shire Council implemented around \$4.0 million in capital works to upgrade amenities at Lake Tchum, Lake Watchem and Lake Wooroonook, and flood road rehabilitation projects. The Lake Tchum project included renovation of toilet and shower areas and a new shower and toilet area with disability access as well as laundry area and storeroom. The Lake Watchem project included construction of new male, female and disability access toilets as well as shower and laundry areas. The work at Lake Wooroonook included construction of new male, female and disability access toilets as well as shower and laundry areas. Relative participation in recreational activities at Buloke lakes in 2020-21 is shown in Figure 3.2.

Figure 3.2 Recreational Activities at Buloke Lakes, 2020-21



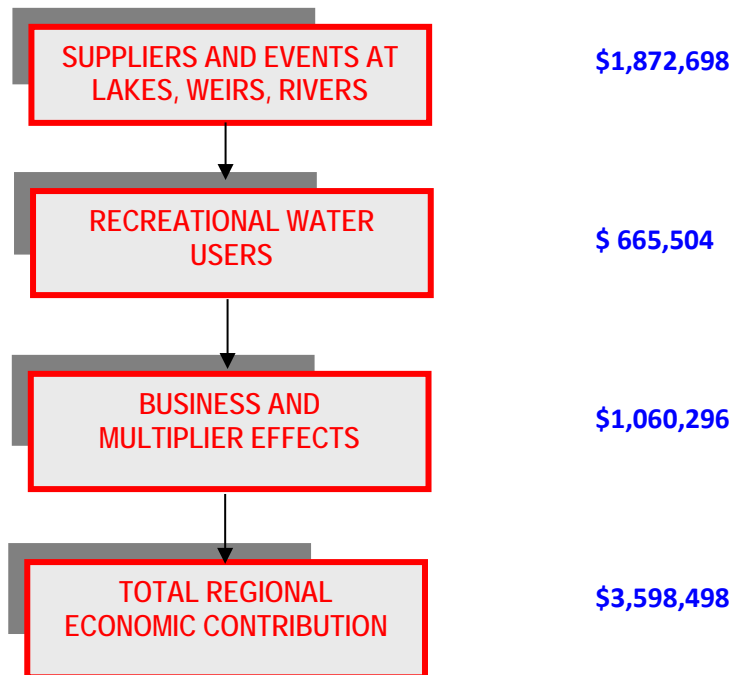
Tables 3.8 and 3.9 and Figure 3.3 detail the estimated 2020-21 economic contribution of the assessed recreational water facilities in Buloke Shire.

Table 3.8: Estimated Economic Contribution 2020-21: Recreational Water Facility Users

	Overnight Visitors	Total Visit Nights	Active Day Visitors	Passive Day Visitors	Total Participation	% Change on 2019-20
Visitation and Participation						
Donald Folletti Lake	933	3,835	1,081	2,995	5,009	-23.00%
Green Lake, Sea Lake	493	3,939	3,120	n.a.	3,613	12.59%
Tchum Lake	898	4,899	2,050	1,320	4,268	-3.69%
Lake Watchem	847	5,953	581	n.a.	1,429	3.00%
Wooroonook Lake	1,004	4,345	794	n.a.	1,798	-6.36%
Total Buloke	4,175	22,971	7,626	4,315	16,116	-7.66%
Visitor Expenditure (\$)						
Buloke Shire						
Donald Folletti		\$124,689	\$14,408	\$8,394	\$147,491	-18.35%
Green Lake, Sea Lake		\$79,360	\$60,840	n.a.	\$140,200	15.98%
Tchum		\$99,197	\$30,750	\$3,766	\$133,713	-16.81%
Watchem		\$127,597	\$10,556	n.a.	\$138,153	15.00%
Wooroonook		\$93,296	\$12,651	n.a.	\$105,946	0.09%
Total Buloke Shire		\$524,140	\$129,204	\$12,160	\$665,504	-3.31%

Table 3.9: Estimated Economic Contribution 2020-21: Supplier Organisations

Suppliers: Direct	
Caravan Parks/Committees of Management	\$101,594
Events and Other Businesses	\$14,000
Statutory Agencies ¹⁰	\$1,757,104
Total Buloke Shire	\$1,872,698

Figure 3.3 2020-21 Estimated Recreational Water Regional Economic Contribution: Buloke Shire

¹⁰ Statutory agencies include Fisheries Victoria, Wimmera CMA and GWM Water

4. RECREATIONAL WATER FACILITIES IN HINDMARSH SHIRE

4.1 OVERVIEW

Hindmarsh Shire is in the north west of the Wimmera Southern Mallee region, with the Western Highway and the Melbourne to Adelaide rail line passing the southern section of the Shire. It is the third largest LGA in area (after West Wimmera and Buloke) and has the second smallest population (West Wimmera Shire has the smallest). In fact, West Wimmera, Buloke and Hindmarsh have the lowest population densities of all LGAs in Victoria. Around 80% of Hindmarsh's population reside in its four main townships; Dimboola, Jeparit, Nhill and Rainbow. The largest of these townships (Nhill) is 74 kilometres north of the urban area of Horsham.

At June 2020, Hindmarsh had a population of 5,592¹¹, having increased by 0.1% in the last year.

Hindmarsh's major industry is agriculture (principally grain, sheep, oilseeds and legumes) which accounted for 26.1% of its workers in 2016, although decreasing at a rate of 1.76% per year. Value adding to agriculture is also important, with major duck processing, and grain handling businesses helping to make manufacturing the third largest employing industry (at 8.1%). Other significant industries include health services (which is the second largest employing industry at 19.1% of all jobs, and has been increasing at 0.86% per annum), and retail and employment/training (the equal fourth largest employing industries). Hindmarsh Shire has a concentration of grain storage businesses (silo and conveyance equipment manufacturers) that is unique in Victoria. Tourism is recognised as an emerging industry and Hindmarsh Shire is part of the Wimmera Mallee Tourism regional grouping.

Hindmarsh Shire towns have high levels of socio-economic disadvantage. Table 4.1 shows that the four main towns are within the most disadvantaged 20% of all 'suburbs' in Victoria, with:

- Jeparit being the most disadvantaged, ranking 37th of all 2,672 suburbs in the State.
- Dimboola ranking 189th
- Nhill ranking 347th
- Rainbow ranking 371st.

Table 4.1: SEIFA Indices for Hindmarsh Shire Suburbs, 2016

	Usual Resident Population		Ranking within Victoria			Minimum score for SA1s in area	Maximum score for SA1s in area
		Score	Rank	Decile	Percentile		
Dimboola	1,730	913	189	1	8	837	1012
Jeparit	477	849	37	1	2	799	975
Nhill	2,184	939	347	2	13	897	1042
Rainbow	683	943	371	2	14	874	1044

Note: The SEIFA Index used in this table relates to Socio-Economic Advantage and Disadvantage.

The Australian Bureau of Statistics broadly defines relative socioeconomic advantage and disadvantage in terms of people's *access to material and social resources, and their ability to participate in society*. There are 2,672 state suburbs in Victoria. A score of 1,000 or above tends to indicate an area which is relatively advantaged, and a score below 1,000 is an area which is relatively disadvantaged. In any of the Wimmera Southern Mallee 'suburbs' there are likely to be pockets which are relatively more advantaged and disadvantaged than the suburb as a whole. The minimum and maximum scores for these smaller pockets (shown as SA1s, Statistical Area 1s) are presented in the final two columns of the table.

¹¹ ABS, Regional Population Growth by LGA 2020 (released March 2021)

Fisheries Victoria has stocked 600 advanced stocker rainbow trout in Nhill lake during the three-year period including 2020-21¹². This was the only recreational water facility in Hindmarsh Shire explicitly stocked. However, there were fish stocking programs for the Wimmera River, reported in the Horsham City section, which undoubtedly provide fish stocks downstream at Dimboola and Jeparit.

4.2 SELECTED RECREATIONAL WATER FACILITIES

4.2.1 Wimmera River Dimboola

The Wimmera River rises in the Pyrenees Ranges near Ararat, flows through Horsham and Dimboola and eventually drains into Lake Hindmarsh, a short distance beyond Jeparit. It is the longest land-locked river in Victoria. In Dimboola, the River flows between the town and the Little Desert. In high rainfall years river flow can be large with occasional floods. During times of low rainfall, the weir retains water near the town while elsewhere the river becomes a series of pools¹³.

Dimboola district was occupied by the Wotjobaluk people prior to white settlement, and when settled by Europeans, the prolific branches and tributaries of the Wimmera River led to the town being initially called 'Nine Creeks'. An area along and adjacent to the river, near the centre of Dimboola is still known as the Nine Creeks run, and this forms part of the recreational water facilities of the Wimmera River. Environmental flows have substantially reduced the periods when the river has been too low for water to flow regularly, although flows can cease in droughts.

In 2020-21 a total of 3,911 megalitres of regulated environmental water and 2,133 megalitres of passing flows were provided to the Wimmera River which greatly improved the ambience and recreational opportunities in Dimboola.

¹² Stocking fish in recreational waterways is considered similar to providing an asset, for which there will be a return on investment over three years.

¹³ Sourced from Dimboola.com.au



There are some private farm stay and camping sites along the Wimmera River in Dimboola (particularly in the Horseshoe Bend area), but the main accommodation provision is the Riverside Holiday Park owned and operated by Hindmarsh Shire Council. The park has 55 powered sites, a flexible range of unpowered sites, several furnished cabins and two camp kitchens. It is estimated that around 40% of visitors to the Holiday Park are attracted by the river participate in either active or passive activities (ie utilise the amenity of the river) during their visit.

In addition to regular swimming, fishing and boating activities on the river, the main river events are the Dimboola Fishing Classic (promoted as the Wimmera's only “bank and boat” community- based fishing event) and the Rowing Regatta. As a water course which runs through the Dimboola township, the Wimmera River has a relatively higher number of passive day users than many other Wimmera Southern Mallee recreational water facilities.

The *Wimmera River Discovery Trail* walking and cycling trail along the Wimmera River (Stage 1 between Dimboola and Jeparit), currently under construction, adds another tourism attraction intrinsically related to the Wimmera River and is expected to increase the active and passive visitation. Many events along the river at Dimboola were either cancelled or scaled-back to be COVID-safe in 2020-21.

Estimated overnight visitors and day trip users of Wimmera River at Dimboola in 2016-17 and 2020-21 are summarised in Table 4.2. These estimates have been developed through interviews on site, online surveys, and data from Hindmarsh Shire Council, and discussions with the Riverside Holiday Park management.

Table 4.2: Estimated Overnight and Day Visitors to Wimmera River, Dimboola 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	2,800	8,197	6,380	13,680	22,860
2017-18	3,744	10,599	6,445	13,550	23,739
2018-19	3,057	13,974	6,970	13,753	23,780
2019-20	2,614	8,334	5,518	14,331	22,463
2020-21	1,955	9,071	4,709	13,850	20,513
% per annum change	-8.59%	2.57%	-7.31%	0.31%	-2.67%
% 2019-20 to 2020-21	-25.21%	8.85%	-14.67%	-3.36%	-8.68%

4.2.2 Wimmera River, Jeparit

The Wimmera River flows through Jeparit, south of Rainbow, as its final town, prior to draining into Lake Hindmarsh. It flows alongside the Jeparit township. Lake Hindmarsh was not included in the 2017-18 or 2019-20 assessments since it has little or no water for recreational activities at present. In very wet conditions, Lake Hindmarsh fills and overflows into Outlet Creek and Lake Albacutya, then several smaller lakes beyond. During times when Lake Hindmarsh has a good level of water (such as 2010-11 when it was around two thirds full) the recreational water use brings significant increases to the local visitor economy.

Prior to white settlement the Jeparit area was occupied by the Gromiluk (part of the Wotjobaluk people). Explorer Edward Eyre camped at Lake Hindmarsh in 1838 while searching for an overland route from Melbourne to Adelaide, and the land, which included the site of Jeparit townsite, was taken up by Robert von Stieglitz in 1846. The *Edward John Eyre Heritage River Walk* follows alongside the river through town.

In 2020-21 a total of 3,911 megalitres of regulated environmental water and 2,133 megalitres of passing flows were provided to the Wimmera River which greatly improved the ambiance and recreational opportunities in Jeparit.

There are many camping sites along the Wimmera River around Jeparit and Lake Hindmarsh, and the main accommodation provision is the Jeparit Caravan Park, owned and operated by Hindmarsh Shire Council. The park has large powered and unpowered sites, barbecues, laundry, toilet and showers facilities. Two new cabins were installed in 2017 on the river foreshore. As in Dimboola, the river runs through the Jeparit township, and has a relatively high number of both active and passive day users.

The annual Jeparit Fishing Competition, held on Sunday of the Easter long weekend, is the major local event using the river. The COVID 19 pandemic meant the event was cancelled in 2020, but it resumed in 2021 with 385 entrants.



Overnight visitation numbers increased in 2020-21 to around the 2018-19 level, but day visitation declined, with fewer WSM residents making a daytrip to Jeparit.

Estimated overnight visitors and day trip users of Wimmera River at Jeparit in 2016-17 to 2020-21 are summarised in Table 4.3. These estimates have been developed through interviews on site, online surveys and data from Hindmarsh Shire Council and the Jeparit Anglers Club.

Table 4.3: Estimated Overnight and Day Visitors to Wimmera River, Jeparit and Lake Hindmarsh 2016-17 and Jeparit only in 2017-18 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	1,155	3,935	1,396	7,295	9,846
2017-18	390	1,411	1,350	6,250	7,990
2018-19	538	1,517	1,414	6,450	8,402
2019-20	318	1,008	1,155	6,156	7,629
2020-21	533	1,357	1,095	5,850	7,477
% per annum change	-17.59%	-23.37%	-5.90%	-5.37%	-6.65%
% 2019-20 to 2020-21	67.36%	34.62%	-5.21%	-4.97%	-1.99%

4.2.3 Nhill Lake

Nhill Lake is a man-made recreation facility constructed in 1960. It is very much a lake built for local users, with shaded areas, a playground, and provision for swimming, fishing, boating and barbecues. A track around the lake provides 1 kilometre of flat surface which is suited to walking, cycling and running activities. The lawn area is used to host community events.

The Nhill Lake is run by a volunteer Committee of Management. A recently upgraded boardwalk links the lake to Jaypex Park on the Western Highway. GWMWater supplements the catchment, or stormwater runoff, into Nhill Lake with bore water from the GWMWater Groundwater Entitlement. The recreation levy is charged for bore water, and a volume up to 150 megalitres is supplied.

Nhill Lake is near the Nhill shopping centre on the southern edge of the urban area, in almost an ornamental botanic gardens type setting. It is a small lake and boat ramp access at the end of Clarence Street. Nhill Lake was originally part of Nhill Swamp. When full and clear there is boating, fishing, a boardwalk and plenty of bird life.

There are no camping sites on the foreshore of Nhill Lake. Nhill Caravan Park is close to the lake but is separated from it by the Nhill Swamp Wildlife Reserve. There was a bridge providing access from the Caravan Park to the lake, but this has been recently removed. The Caravan Park is privately owned and operated. It has 8 cabins, 45 powered sites, and a few non-powered sites. The majority of park stays are 1 to 2 nights, with most people staying as a stopover location between Melbourne and Adelaide or other major destinations.

The Nhill Lake Park Run has become a well-established weekly event, with the course running around much of the lake foreshore. Nhill Lake Park Run in Nhill (commenced in February 2018) and attracts 20-45 participants per week and 5-7 volunteers. Parkrun is part of an international program involving free, weekly, timed, walking, jogging, running, and volunteering events. There are millions of registered participants around the world and people are able to join a Park Run on a Saturday morning at 8 am whenever and wherever they are at home or travelling. Increasing numbers of people schedule holidays or regular travel to enable them to attend a 'trail of Park Runs'. People from intrastate and interstate stay over at Nhill just to participate in the Park Run (usually 5-10% of participants) and many Park Run participants have breakfast at a café nominated on each Saturday by the Nhill Park Run Director (such as the Nhill Dine Inn, Wimmera Bakery, or Mr Le café) around 5-10% of weekly Park Run participants make overnight stays in the host town. A lot of weekly Park Runs have been cancelled during periods of the strictest lockdowns in 2020 and 2021 due to the COVID 19 pandemic.



Since 2014 there has been an annual *February Fiesta* at the Nhill Lake, with activities every Friday evening in February. Nhill Lake Reserve lights up to music, food, dancing, children's entertainment and art. Problems with the pump system (from nearby bores) in 2019-20 resulted in the water level, and water quality, being poor for the period July 2019 to January 2020, but was restored in time for the February Fiesta. The lake was shallow, weedy and water quality was poor in 2020-21 and most lakeside activities were cancelled, including the annual *February Fiesta*.

Estimated overnight visitors and day trip users of Nhill Lake in 2016-17 to 2020-21 are summarised in Table 4.4. These estimates have been developed through interviews on site and discussions with community groups and caravan park owners.

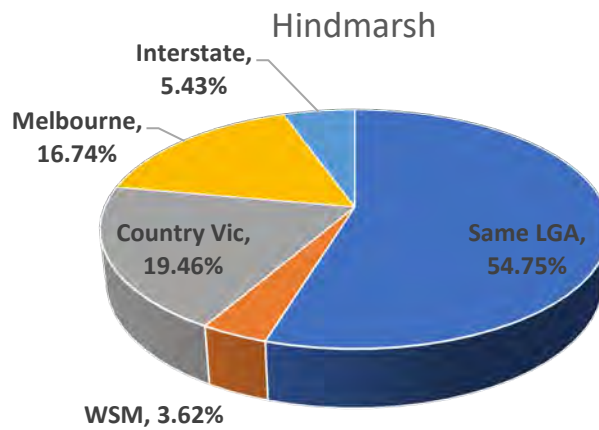
Table 4.4: Estimated Overnight and Day Visitors to Nhill Lake 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	501	1,053	6,460	10,025	16,986
2017-18	596	1,254	6,730	10,560	17,886
2018-19	472	611	3,991	10,200	14,663
2019-20	52	104	979	10,353	11,383
2020-21	15	35	350	8,503	8,868
% per annum change	-58.40%	-57.40%	-51.75%	-4.03%	-15.00%
% 2019-20 to 2020-21	-71.11%	-66.67%	-64.23%	-17.87%	-22.10%

4.3 ECONOMIC CONTRIBUTION

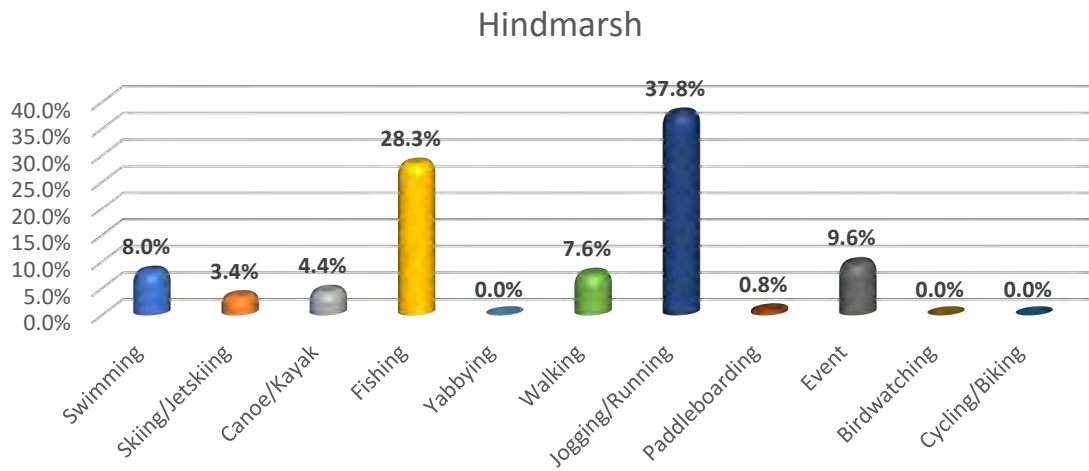
Figure 4.1 shows 58% of recreational water users at Hindmarsh Shire were residents of the Wimmera Southern Mallee and a further 19% were country Victorian residents in 2020-21. The number of visitors from Melbourne and interstate was 22%.

Figure 4.1 Residential Location of Recreational Water Users, Hindmarsh Shire



Relative participation in recreational activities at Hindmarsh lakes and weirs in 2020-21 is shown in Figure 4.2.

Figure 4.2 Recreational Activities at Hindmarsh Lakes and Weirs, 2020-21



Tables 4.5 and 4.6 and Figure 4.3 detail the estimated 2020-21 economic contribution of the assessed recreational water facilities in Hindmarsh Shire.

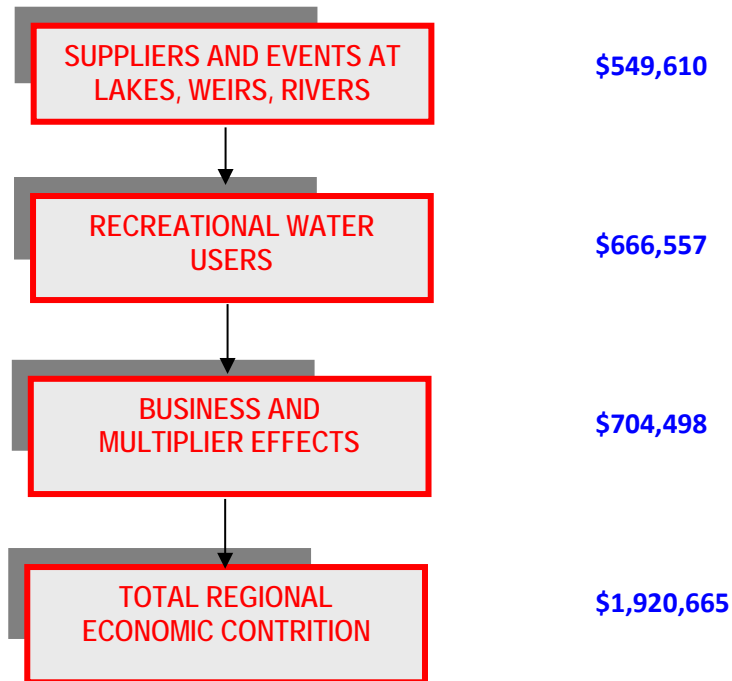
Table 4.5: Estimated Economic Contribution 2020-21: Recreational Water Facility Users

	Total Overnight Visitors	Total Visit Nights	Active Day Visitors	Passive Day Visitors	Total Participation	% Change on 2019-20
Visitation and Participation						
Wimmera River - Dimboola	1,955	9,071	4,709	13,850	20,513	-8.68%
Wimmera River - Jeparit	533	1,357	1095	5,850	7,477	-1.99%
Nhill Lake	15	35	350	8,503	8,868	-22.10%
Total Hindmarsh Shire	2,502	10,463	6,153	28,203	36,858	-11.13%
Visitor Expenditure (\$)						
Wimmera River - Dimboola		\$432,729	\$105,039	\$36,694	\$574,463	29.68%
Wimmera River - Jeparit		\$31,984	\$12,785	\$16,394	\$61,163	9.64%
Nhill Lake		\$1,993	\$3,813	\$25,126	\$30,932	-39.26%
Total Hindmarsh Shire		\$466,707	\$121,637	\$78,214	\$666,557	21.26%

Table 4.6: Estimated Economic Contribution 2020-21: Supplier Organisations

Suppliers: Direct	
Caravan Parks/Committees of Management	\$157,208
Events and Other Businesses	\$ 18,500
Statutory Agencies ¹⁴	\$373,902
Total Hindmarsh Shire	\$549,610

Figure 4.3 2020-21 Estimated Recreational Water Economic Contribution: Hindmarsh Shire



¹⁴ Statutory agencies include Fisheries Victoria, Wimmera CMA and GWM Water

5. RECREATIONAL WATER FACILITIES IN THE HORSHAM RURAL CITY

5.1 OVERVIEW

The Horsham Rural City is home to 37% of the population in the Wimmera Southern Mallee region (including Buloke Shire). It is in the central south of the region, around 300 kilometres north west of Melbourne and, at 4,267 square kilometres, is the smallest in area of all municipalities in Wimmera Southern Mallee.

Three highways pass through the LGA (the Western Highway, the Wimmera Highway and the Henty Highway) all passing through Horsham and providing connections between Horsham and Melbourne, Hamilton and Portland, Mildura and Adelaide. The Melbourne–Adelaide rail line also passes through Horsham.

The 2020 estimated resident population of Horsham was 20,018¹⁵ and increased by 0.5% in the past year. Around 75% of the population live within the urban area of Horsham. There are, however, about 40 other localities within the municipality.

Horsham is a service centre for the surrounding rural hinterland and, indeed, the region with higher order health, education facilities (including secondary colleges, a university campus and an agricultural college), retail and recreation and leisure facilities. The major industry is dryland and broadacre agriculture and it is home to a nationally acclaimed agricultural research centre, the Grains Innovation Park. Major employing industries are health care and social assistance (16.6% of jobs), retail (11.8%) and agriculture (9.2%).

Horsham urban area has high levels of socio-economic disadvantage. Table 5.1 shows that the ‘suburb’ of Horsham ranks 334th most disadvantaged of all 2,672 suburbs in the State. Natimuk ranks 549th. The smaller ‘suburb’ communities of Horsham Rural City (Brimpaen, Toolondo and McKenzies Creek) are relatively advantaged.

Table 5.1: SEIFA Indices¹⁶ for Horsham Rural City Suburbs, 2016

	Usual Resident Population	SEIFA Score	Ranking within Victoria			Minimum score for SA1s in area ¹⁷	Maximum score for SA1s in area
			Rank	Decile	Percentile		
Horsham	14,543	938	334	2	13	644	1058
Brimpaen	79	1067	2380	9	90	1067	1067
Drung	147	989	1032	4	39	989	989
Natimuk	514	958	549	3	21	934	1041
McKenzie Creek	136	1051	2237	9	84	1051	1051
Toolondo	59	1000	1235	5	47	1000	1000

Note: The SEIFA Index used in this table relates to Socio-Economic Advantage and Disadvantage.

The Australian Bureau of Statistics broadly defines relative socioeconomic advantage and disadvantage in terms of people's *access to material and social resources, and their ability to participate in society*. There are 2,672 state suburbs in Victoria. A score of 1,000 or above tends to indicate an area which is relatively advantaged, and a score below 1,000 is an area which is relatively disadvantaged. In any of the Wimmera Southern Mallee ‘suburbs’ there are likely to be pockets which are relatively more advantaged and disadvantaged than the suburb as a whole. The minimum and maximum scores for these smaller pockets (shown as SA1s, Statistical Area 1s) are presented in the final two columns of the table.

¹⁵ ABS, Regional Population Growth 2020 (March 2021)

¹⁶ SEIFA indices are calculated by the Australian Bureau of Statistics using a range of variables on income, employment, housing, etc.

¹⁷ SA1s are Statistical Areas Level 1 – a ‘neighbourhood’ scale of geography.

Fisheries Victoria has stocked 1,010,984 fingerlings and advanced stocker fish in the selected lakes and the Wimmera River in Horsham Rural City during the three-year period including 2020-21¹⁸. Native species make up the overwhelming majority of stockings, except in Lake Toolondo which is a popular 'trophy trout' fishing destination. Those in the Wimmera River are potentially servicing recreational fishers along the downstream locations through Horsham Rural City and Hindmarsh Shire.

Details of the number and species of stockings over this period are summarised in Table 5.2.

Table 5.2 Fish Released in Horsham Rural City Selected Lakes and River 2018-2021

Units stocked (fingerlings and/or advanced stockers)	Brown Trout	Rainbow Trout	Murray Cod	Golden Perch	Silver Perch	Total
Horsham Rural City						
Green Lake Horsham				50,000		50,000
Wimmera River				330,000	120,000	450,000
Taylors Lake			209,984	246,500		456,484
Toolondo Reservoir	39,000	15,000				54,500

5.2 SELECTED RECREATIONAL WATER FACILITIES

5.2.1 Wimmera River at Horsham

The Wimmera River is naturally an inland intermittent river. It rises in the Pyrenees, on the northern slopes of the Great Dividing Range, and flows generally north by west and drains into Lake Hindmarsh and Lake Albacutya, a series of ephemeral lakes. While they do not directly empty into a defined watercourse, this system is part of the catchment in the Murray-Darling basin.

The river weaves through suburban Horsham, with parkland and red gums lining long stretches of the river. The Wimmera River is popular for kayaking, canoeing and fishing. Horsham Rowing Club has a clubhouse and base on the riverbank. In 2020-21 a total of 3,911 megalitres of regulated environmental water and 2,133 megalitres of passing flows were provided to the Wimmera River which greatly enhanced the ambiance and recreational opportunities in Horsham.

There are several boat ramps and picnic areas available for use. A healthy number of Horsham residents use the riverside pathways for daily exercise routines; walking, jogging, or cycling. The Lawrie Rudolph Walk follows the path of the river along its northern bank, and there are several designated walking trails encouraging residents and visitors to experience the river, including:

- The Yanga Track (1.2 kilometres walk including two boardwalks across the river)
- Southbank trail
- Burnt Creek trail
- Weir Park/Wetlands trail
- Riverside trail.

¹⁸ Stocking fish in recreational waterways is considered similar to providing an asset, for which there will be a return on investment over three years.

The number of day users at the Wimmera River at Horsham is the greatest of all recreational water facilities in the Wimmera Southern Mallee. Fishing is the most popular Wimmera River activity, with walking, running and exercising along the river were the activities in which people participated most frequently (ie the passive day users group). These passive activities increased during the COVID 19 pandemic restricted period.



Conducting and establishing events that take advantage of the environment and ambience of the Wimmera River have emerged in recent years. Park Runs are among the most prominent of these. Wimmera River Parkrun in Horsham commenced in August 2018 and attracts an average of 90 participants per week plus 7-10 volunteers. Parkrun is part of an international program involving free, weekly, timed, walking, jogging, running, and volunteering events. There are millions of registered participants around the world and people are able to join a Park Run on a Saturday morning at 8 am whenever and wherever they are at home or travelling. Increasing numbers of people schedule holidays or regular travel to enable them to attend a 'trail of Parkruns'. Usually 5-10% of Parkrunners at the Wimmera River Parkrun are interstate or intrastate visitors who attend, and even stay overnight, just to participate in the run. Most Park Run participants have breakfast at a Park Run sponsor café in town (eg Fig Tree Café in Horsham) and around 5-10% of weekly Park Run participants make overnight stays in the host town. Park Runs have been cancelled periodically in 2020 and 2021 during the stricter lockdown periods.

Other major events at the river are:

- Horsham Fishing Competition; conducted annually on the March Labour Day long-weekend. It is a family-oriented event which encourages participants to combine fishing with camping. Family and friends who wish to fish together in a quiet and relaxed environment can fish in an allocated area along the river reserved for this specific purpose. Angling clubs are allocated designated free camping and fishing areas. The fishing competition is a widely supported community event with considerable cash and in-kind contributions from local businesses, community organisations, Horsham Rural City Council, and Wimmera CMA. The Fishing Competition was conducted in 2020-21 but the format was amended to be COVID safe with reduced numbers of entrants and a greater proportion of local participants.

- Great Wimmera River Duck Race in November at Sawyer Park. This event is a fundraiser for the Wimmera Health Care Group and part of the Kannamaroo Festival weekend, with around 350 active participants.
- In 2018-19 there was also a statewide Dragon Boat Regatta, held in November.

There is a vast array of accommodation options in Horsham, including hotels and motels and caravan parks well located for access to the river. The number of day users at the Wimmera River at Horsham is the greatest of all recreational water facilities in the Wimmera Southern Mallee.

Total estimated overnight visitors and day users of the Wimmera River at Horsham in 2016-17 to 2020-21 are presented in Table 5.3. These estimates have been developed through interviews on site and in Horsham business area, and liaison with Horsham Angling Club, Fishing Competition management, and Wimmera Lakes Caravan Park.

Table 5.3: Estimated Overnight and Day Visitors to Wimmera River at Horsham, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	3,401	7,001	13,510	61,446	78,357
2017-18	2,981	8,086	13,806	62,592	79,379
2018-19	3,625	10,700	14,377	66,564	84,566
2019-20	3,161	9,614	11,382	69,559	84,103
2020-21	2,418	10,406	9,859	66,730	79,007
% per annum change	-8.17%	10.42%	-7.57%	2.08%	0.21%
% 2019-20 to 2020-21	-23.50%	8.24%	-13.38%	-4.07%	-6.06%

5.2.2 Green Lake

Green Lake is a small, attractive lake with a volume of 5,350 megalitres. It is an off-stream reservoir with its own catchment from Diggers Creek and was originally used for irrigation purposes. GWMWater advises that, since construction of the Wimmera Mallee Pipeline, Green Lake is no longer used as a water supply reservoir but plays an important role in managing the water quality within the headworks system.

Green Lake is adjacent to the Western Highway, just 12 kilometres from Horsham. The lake has a long sandy beach, boat ramp, jetty and picnic facilities. The Horsham Yacht Clubhouse is located at Green Lake and runs regattas and events when water levels are suitable. There are no camping facilities at this lake, so most overnight visitors stay in Horsham.

Green Lake is popular for fishing, swimming, boating and windsurfing. In early 2017 a large number of visitors were fishing for yabbies. However, the lake was very quiet throughout the summer and autumn of 2017-18, with blue-green algae presence declared during the season. This situation was further exacerbated throughout most of 2018-19 but improved in the summer of 2019-20 until February when blue-green algae returned followed by the COVID 19 restrictions. The fact that water quality at Green Lake was quite good during the December – January summer holiday period made it popular for groups who took advantage of the chance to hold Christmas and New Year outdoor functions and to use the lake for water-skiing (despite some complaints about low water level). This led to increased expenditure during visits (food, beverages and boat fuel in particular).

In 2020-21 water levels at Green Lake were too low to facilitate significant levels of recreational water usage.



Estimated overnight visitors and day users of Green Lake near Horsham in 2016-17 to 2020-21 are summarised in Table 5.4. These estimates have been developed through interviews on site and in the Horsham business area, online surveys, and discussions with the Horsham Angling Club, and other stakeholders.

Table 5.4: Estimated Overnight and Day Visitors to Green Lake, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	469	1,631	9,544	0	10,013
2017-18	363	653	3,680	850	4,893
2018-19	110	240	1,000	900	2,010
2019-20	76	167	875	795	1,746
2020-21	0	0	250	500	750
% per annum change	-100.00%	-53.26%	-54.91%	n.a.	-44.13%
% 2019-20 to 2020-21	-100.00%	-100.00%	-71.43%	-37.11%	-57.05%

5.2.3 Taylors Lake

Taylors Lake is another off-stream reservoir and a reliable water source for the region. It is located 20 kilometres south-east of Horsham and is supplied from upstream storages within the Wimmera-Glenelg headworks. Nearby Potters Creek also serves as a small natural catchment for Taylors Lake. Water can also be harvested into Taylors Lake from the Wimmera River, McKenzie River, Burnt Creek and Mount William Creek.

The lake has an important role in supplying environmental water to the Wimmera River and also a backup reservoir for the WMP supply, should Lake Bellfield be unable to supply WMP, and is very popular with Horsham locals for recreation, especially fishing and water skiing. When other lakes are dry, Taylors Lake will often still have water to enjoy. The lake does not have a formal caravan park/camping ground but camping and campfires are permitted in designated areas, and permanent toilet facilities have been installed on both the east and west sides of the lake in the past three years.

Estimated overnight visitors and day users of Taylors Lake in 2016-17 to 2020-21 are summarised in Table 5.5. These estimates have been developed through interviews on site and discussions with the Taylors Lake stakeholders.

Table 5.5: Estimated Overnight and Day Visitors to Taylors Lake, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2016-17	2,051	6,289	1,612	3,663
2017-18	2,530	7,436	1,515	4,045
2018-19	2,608	11,005	1,585	4,193
2019-20	2,116	9,029	1,421	3,537
2020-21	1,841	7,771	1,347	3,189
% per annum change	-2.66%	5.43%	-4.39%	-3.41%
% 2019-20 to 2020-21	-12.99%	-13.94%	-5.20%	-9.86%

5.2.4 Lake Toolondo

Lake Toolondo is an off-stream reservoir, well known for trout fishing and as a popular recreational destination in the Wimmera Southern Mallee region. The lake supply is reliant on transfers from Rocklands Reservoir¹⁹ as per the storage management rules to achieve recreation objectives at Lake Toolondo. The lake is also supplied partially by the small Mt Talbot Creek catchment. The configuration of inlet and outlet structure of Lake Toolondo results in a large volume of 'dead water'. This means that water in Lake Toolondo does not flow through to another source; it can only be pumped out (unless the water level is high enough for gravity release to a channel).

The northern, southern and eastern ends of Lake Toolondo all have a boat ramp, however, these ramps become unusable during periods of drought due to the onset of low water levels. Lake Toolondo is also used by water skiers (when water levels permit) and swimmers.

Fishing activity has not been at its peak since 2017-18. In particular, there was an absence of “trophy trout” for the enthusiastic sports anglers, although there were good returns for those fishing for redfin during the summer and spring months. Fisheries Victoria advises: *“The stocked trout fishery of Toolondo Reservoir is most productive when, following a period of low water, water levels increase significantly and flood the margins. This creates a trophic upsurge in nutrients, plant-life, insects, fish and other aquatic life that drives feed supply for foraging trout (and redfin). Conversely, when water levels stabilise, fishery productivity falls and stabilises which moderates the performance of the fishery. Over the last few years the growth rates and condition of Toolondo trout has fallen while redfin fishing has remained strong. The presence of carp may also impact on the trout fishery, particularly if carp abundance results in changes to water turbidity”*. Low water levels further decimated the recreational use of Lake Toolondo in 2019-20.

In 2020-21 the water level dropped to less than 10% and the congregation of exotic species impacted adversely on trout and native fish stocks.

¹⁹ GWMWater information

Supplier businesses servicing Lake Toolondo include:

- Wash Tomorrow Caravan Park located at Telangatuk East Road, Toolondo. The park has powered and unpowered sites and there are 11 sites occupied by on-site vans/cabins owned by regular visitors. However this park closed in 2020-21.
- Victorian Inland Fishing Charters, offering day and overnight fishing charters, especially targeting trophy trout.
- 3-4 rental cabins in adjacent privately-owned land (available for visitors making bookings).

Estimated overnight visitors and day users of Lake Toolondo in 2017-18 and 2020-21 are summarised in Table 5.6. These estimates have been developed through interviews on site and discussions with suppliers to the lake.

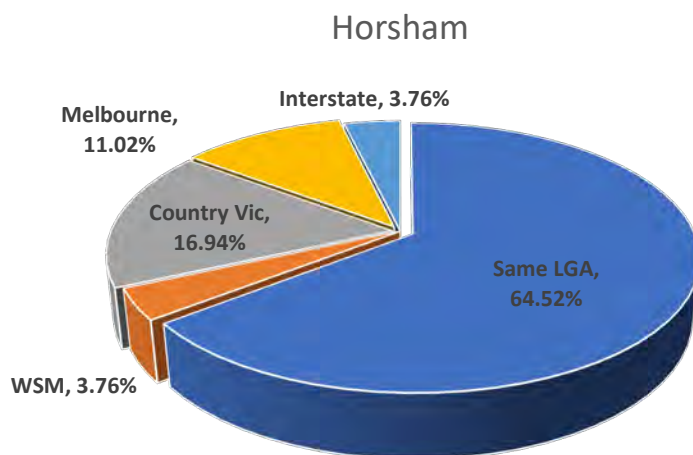
Table 5.6: Estimated Overnight and Day Visitors to Lake Toolondo, 2017-18 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2017-18	1,741	4,250	1,599	3,340
2018-19	670	2,099	1,050	1,720
2019-20	140	465	218	358
2020-21	45	95	112	157
% pa change	-70.43%	-71.84%	-58.78%	-63.91%
% 2019-20 to 2020-21	-67.76%	-79.57%	-48.62%	-56.09%

5.3 ECONOMIC CONTRIBUTION

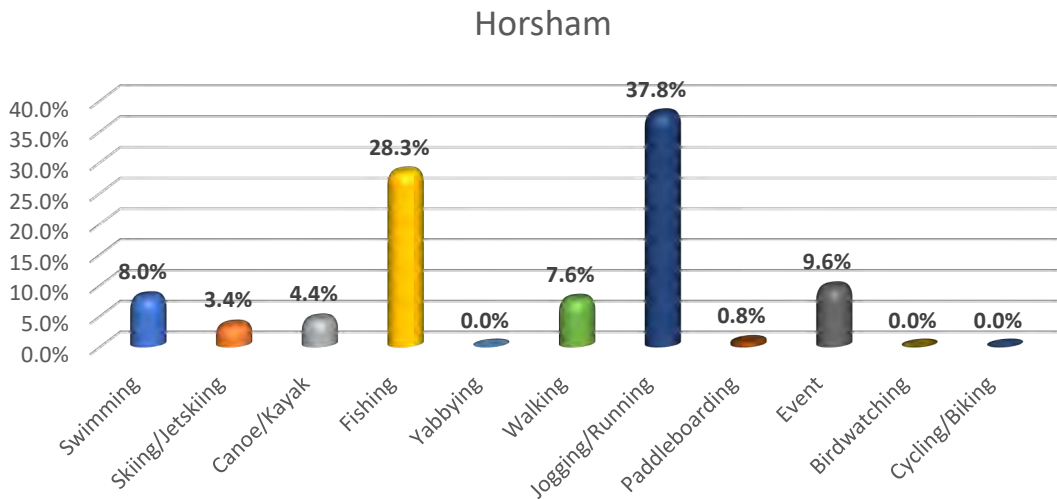
Figure 5.1 shows the massive increase in local recreational water users at Horsham Rural City sites: 68% were Wimmera Southern Mallee residents in 2020-21, and a further 17% were from other parts of country Victoria. Melbourne metropolitan visitation dropped to 11% due to extended lockdowns, while interstate visitors made up a total of 4% of visitation.

Figure 5.1 Residential Location of Recreational Water Users, Horsham Rural City



Relative participation in recreational activities at Horsham lakes and weirs in 2020-21 is shown in Figure 5.2.

Figure 5.2 Recreational Activities at Horsham Lakes and Weirs, 2020-21



Tables 5.8 and 5.9 and Figure 5.3 detail the estimated 2020-21 economic contribution of the assessed recreational water facilities in the Horsham Rural City.

Table 5.8: Estimated Economic Contribution 2020-21: Recreational Water Facility Users

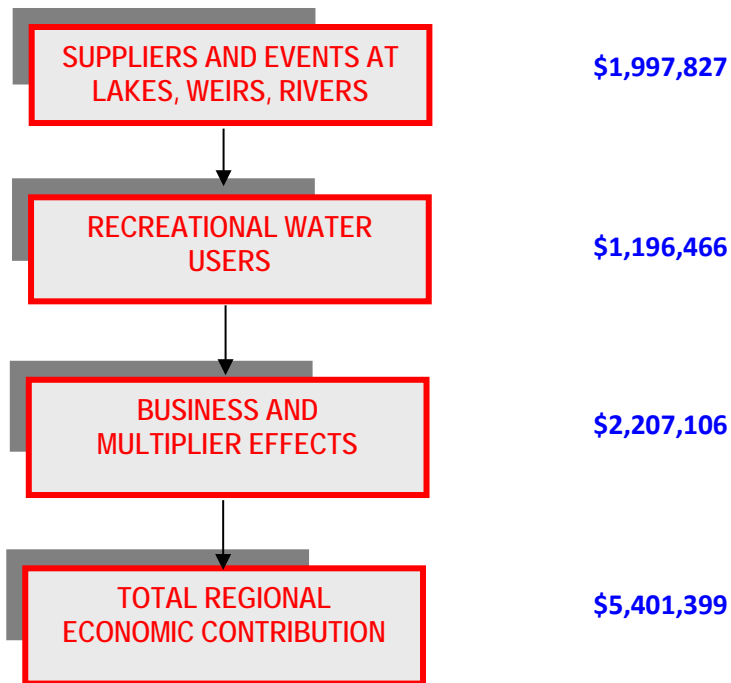
	Total Overnight Visitors	Total Visit Nights	Active Day Visitors	Passive Day Visitors	Total Participation	% Change on 2019-20
Wimmera River - Horsham	2,418	10,406	9,859	66,730	79,007	-0.55%
Green Lake	0	0	250	500	750	-13.12%
Taylors Lake	1,841	7,771	1,347	n.a.	3,189	-15.63%
Toolondo	45	95	112	n.a.	157	-79.21%
Total Horsham	5,494	19,275	13,896	70,354	89,744	-2.97%
Visitor Expenditure (\$)						
Wimmera River - Horsham		\$583,197	\$188,047	\$210,200	\$981,444	16.29%
Green Lake		\$0	\$4,838	\$1,478	\$6,315	-71.58%
Taylors Lake		\$176,605	\$24,379	n.a.	\$200,984	7.68%
Toolondo		\$5,539	\$2,184	n.a.	\$7,723	-70.17%
Total Horsham Rural City		\$765,341	\$219,448	\$211,677	\$1,196,466	10.92%

Table 5.8: Estimated Economic Contribution 2020-21: Supplier Organisations

Suppliers: Direct	
Caravan Parks/Committees of Management	\$235,618
Events and Other Businesses	\$42,000
Statutory Agencies ²⁰	\$1,720,209
Total Horsham Rural City	\$1,997,827

²⁰ These agencies include Wimmera CMA, GWM Water, and Fisheries Victoria

Figure 5.3 2020-21 Estimated Recreational Water Regional Economic Contribution: Horsham Rural City



6. RECREATIONAL WATER FACILITIES IN NORTHERN GRAMPIANS SHIRE

6.1 OVERVIEW

Northern Grampians is at the eastern end of the Wimmera Southern Mallee region. Its major centres are Stawell in the south (just off the Western Highway) and St Arnaud in the north (on the Sunraysia Highway). Smaller centres include Great Western, Halls Gap, Glenorchy, Navarre, Marnoo and Stuart Mill. Stawell and St Arnaud are both service centres for their surrounding rural communities.

The population of Northern Grampians in 2020 was 11,403²¹, having remained static in the past year. It is the second most populous municipality in the region and most of the population live in the southern part of the Shire.

The structure of Northern Grampians economy is quite different from the remainder of the region. There is a history of gold mining and, while agriculture and agricultural product processing are key industries, it has a diversity of agricultural enterprises including the more traditional dryland pursuits of wool, broad acre grazing and cereal cropping, but also significant horticultural sectors (wine, olives and emerging hydroponics). Health services (16.0% of all jobs), agriculture (13.1%) and manufacturing (11.1%) are the Shire's largest employing industries.

Tourism is very a significant industry for the Shire, particularly in the south associated with the Grampians National Park. This is also the location of four of the assessed recreational water facilities in the Shire, with only Walkers Lake in the northern part of the Shire.

Some Northern Grampians Shire towns have high levels of socio-economic disadvantage, the two largest, Stawell and St Arnaud being the most significant. Table 6.1 shows the SEIFA rankings of the five 'suburbs' compared with all those in Victoria, revealing:

- St Arnaud is the most disadvantaged, ranking 90th of all 2,672 suburbs in the State.
- Stawell is the next most disadvantaged, ranking 96th
- Other towns near the recreational water sites rank in the 'more advantaged' percentiles: Moyston and Halls Gap (near Lake Fyans and Lake Bellfield) ranking around the middle of all suburbs, and Marnoo (near Walkers Lake) ranking 2035th.

Table 6.1: SEIFA Indices for Northern Grampians Shire Suburbs, 2016

	Usual Resident Population		Ranking within Victoria			Minimum score for SA1s in area	Maximum score for SA1s in area
		Score	Rank	Decile	Percentile		
Halls Gap	430	1006	1405	6	53	998	1011
Marnoo	122	1038	2035	8	77	1038	1038
Moyston	348	999	1224	5	46	999	999
St Arnaud	2,193	892	90	1	4	854	988
Stawell	6,032	894	96	1	4	837	981

Note: The SEIFA Index used in this table relates to Socio-Economic Advantage and Disadvantage.

The Australian Bureau of Statistics broadly defines relative socioeconomic advantage and disadvantage in terms of people's *access to material and social resources, and their ability to participate in society*. There are 2,672 state suburbs in Victoria. A score of 1,000 or above tends to indicate an area which is relatively advantaged, and a score below 1,000 is an area which is relatively disadvantaged. In any of the Wimmera Southern Mallee 'suburbs' there are likely to be pockets which are relatively more advantaged and disadvantaged than the suburb as a whole. The minimum and maximum scores for these smaller pockets (shown as SA1s, Statistical Area 1s) are presented in the final two columns of the table.

²¹ ABS, Regional Population Growth 2020 (March 2021)

Fisheries Victoria has stocked 442,770 fingerlings and advanced stocker fish in the selected lakes in Northern Grampians Shire (except Lake Lonsdale) during the three-year period including 2020-21²². The fish stocking in this Shire is the only one in WSM region where introduced (trout) species are so numerous (about 33% of the native species stockings). Details of the number and species of stockings over this period is summarised in Table 6.2.

Table 6.2 Fish Released in Northern Grampians Shire Selected Lakes 2018-2021

Units stocked (fingerlings and/or advanced stockers)	Brown Trout	Rainbow Trout	Murray Cod	Golden Perch	Silver Perch	Total
Northern Grampians Shire						
Lake Bellfield	15,000	50,020	70,000	190,000		325,020
Lake Fyans	21,000	12,750				33,750
Lake Wartook	24,000	25,000				49,000
Walkers Lake				15,000	20,000	35,000

6.2 SELECTED RECREATIONAL WATER FACILITIES

6.2.1 Lake Bellfield

Lake Bellfield is located in the eastern Grampians Ranges near Halls Gap. Lake Bellfield is the main source of water supply for the Wimmera Mallee Pipeline system, supplies water to Halls Gap and Pomonal and also transfers water to Lake Fyans. The lake is used for recreational activities such as boating, fishing and picnicking. Combustion engine boats are not permitted on Lake Bellfield.

Lake Bellfield is located in the Halls Gap urban area. Therefore, accommodation is available at several premises throughout Halls Gap. The Lakeside Tourist Park is a major facility and is adjacent to the lake, although below the dam wall. A small proportion of overnight visitors at the Tourist Park are lake users. Most water uses are low impact, such as fishing, canoeing, kayaking and picnics on the banks.

Estimated overnight visitors and day trip users of Lake Bellfield in 2016-17 to 2020-21 are summarised in Table 6.3. These estimates have been developed through interviews on site, discussions with the Halls Gap Lakeside Tourist Park management, and fishing enthusiasts.

Table 6.3: Estimated Overnight and Day Visitors to Lake Bellfield, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	1,177	4,453	2,173	14,842	18,192
2017-18	1,786	5,061	2,355	14,660	18,801
2018-19	1,815	7,417	2,650	14,566	19,032
2019-20	1,465	5,652	2,129	12,156	15,750
2020-21	1,380	3,078	1,895	10,064	13,339
% per annum change	4.06%	-8.82%	-3.37%	-9.26%	-7.46%
% 2019-20 to 2020-21	-5.82%	-45.53%	-10.99%	-17.21%	-15.31%

²² Stocking fish in recreational waterways is considered similar to providing an asset, for which there will be a return on investment over three years.



6.2.2 Lake Lonsdale

Lake Lonsdale is a large, shallow water reservoir on Mount William Creek. It fills from its own catchment and is reliant on natural inflows. Although the catchment can be a substantial producer of water during wet years, it covers a very large area and is not reliable during dry years. As a lake with relatively shallow depth, it has high evaporation losses over summer months.

Since the introduction of the Wimmera Mallee Pipeline, the lake is rarely used by GWMWater for domestic or stock water supply, however it remains a key source of water for the environment. Lake Lonsdale is important to the surrounding communities, especially Stawell, as a recreational lake offering fishing, yabbying, boating, swimming, camping and water skiing. The surrounding land provides opportunity for trekking, hiking and wildlife watching. Camping is available at four designated camping areas along the lake. During 2018-19 the lake fell below 20% water level, and fell to 16% by the end of the 2019-20 year.

Estimated overnight visitors and day trip users of Lake Lonsdale in 2016-17 to 2020-21 are summarised in Table 6.4. These estimates have been developed through interviews on site and discussions with Lake Lonsdale stakeholders.

Table 6.4: Estimated Overnight and Day Visitors to Lake Lonsdale, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	469	1,995	1,500	5,000	6,969
2017-18	314	1,980	1,280	4,780	6,374
2018-19	173	819	655	3,875	4,703
2019-20	130	670	556	2,345	3,030
2020-21	90	254	0	950	1,040
% per annum change	-33.81%	-40.29%	-100.00%	-33.98%	-37.85%
% 2019-20 to 2020-21	-30.64%	-62.17%	-100.00%	-59.49%	-65.68%

6.2.3 Lake Wartook

Lake Wartook is an important water resource in the region. It is the primary water source for Horsham and Natimuk, and an important resource for “Supply System 6” of the Wimmera Mallee Pipeline. The lake also provides substantial environmental flows.

Located on the MacKenzie River in the central Grampians, Lake Wartook is popular with locals, particularly for fishing with trout as the target species. Around 15,000 rainbow and brown trout are stocked in the lake each year.

Horsham Angling Club has a lodge located on the foreshore of Lake Wartook, and this is the main accommodation facility. The club has 300 to 400 fishing members, not all of whom are active. Many of the members join specifically to access the club’s lodge facilities at Wartook and Rocklands Reservoir.

Estimated overnight visitors and day trip users of Lake Wartook in 2016-17 to 2020-21 are summarised in Table 6.5. These estimates have been developed through interviews on site and discussions with the Horsham Angling Club (Wartook Lodge operators).

Table 6.5: Estimated Overnight and Day Visitors to Lake Wartook, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	641	3,938	660	0	1,301
2017-18	221	741	615	1,100	1,936
2018-19	287	893	670	1,000	1,957
2019-20	203	1,016	647	758	1,608
2020-21	66	206	254	345	665
% per annum change	-43.34%	-52.20%	-21.26%	n.a.	-15.45%
% 2018-19 to 2019-20	-67.50%	-79.78%	-60.76%	-54.50%	-58.66%

6.2.4 Lake Fyans

Lake Fyans is part of the GMMWater headworks reservoir supply system. Lake Fyans has a small natural catchment and it relies on water transfers from Lake Bellfield to fulfil its role in providing water supply to the towns of Ararat, Stawell and Great Western and to some ‘supply by agreement’ customers of GMMWater.

The lake is one of the most important recreational lakes in the region. It hosts a number of activities including sailing, jet skiing, hunting and caravanning, and is the base for:

- Lake Fyans Holiday Park which is the largest accommodation facility dedicated to servicing any of the 25 selected recreational water facilities in the Wimmera Southern Mallee. The Holiday Park has 20 cabins, 120 powered sites, 200 unpowered sites, and associated resort facilities.
- Stawell Yacht Club which organises regular sailing races and learn to sail programs (tackers).
- Scouts Victoria’s Lake Fyans Scout Camp on 10 hectares a of bushland at the edge of Lake Fyans. The camp has 100 patrol camp sites, a campfire circle, disabled access shelter and storm hut, and a self-contained kitchen. It provides canoeing, games room, hiking and bush walking, and water activities. There is also a lodge accommodating up to 40 people.



A new walking track at Lake Fyans was opened in 2017-18. The project has developed a 9.6 kilometres walking track around the southern perimeter of Lake Fyans, with fencing, shade shelters, upgraded and new toilets, signage, nature trails and bird trails. It will better connect the recreational, cultural and natural heritage of the lake surrounding Lake Fyans Holiday Park. Splinter tracks off the main trail encourage walkers to explore the diverse plant life, observe fauna activity and to preserve local cultural heritage. The project complements the Grampians Peaks Trail project by promoting the greater region as a place to enjoy the nature and beauty of the Grampians by foot and bicycle. This development was expected to add around 15% to the visitation numbers at the lake.

Estimated overnight visitors and day trip users of Lake Fyans in 2016-17 to 2020-21 are summarised in Table 6.6. These estimates have been developed through interviews on site and discussions with the Lake Fyans Holiday Park, and GWMWater.

Table 6.6: Estimated Overnight and Day Visitors to Lake Fyans, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	21,649	66,456	2,681	3,485	27,815
2017-18	23,385	78,613	2,768	3,415	29,568
2018-19	22,223	79,336	2,799	3,420	28,442
2019-20	18,033	65,872	2,287	3,266	23,586
2020-21	16,073	61,238	1,823	2,751	20,646
% per annum change	-7.18%	-2.02%	-9.19%	-5.74%	-7.18%
% 2019-20 to 2020-21	-10.87%	-7.04%	-20.29%	-15.78%	-12.46%



6.2.5 Walkers Lake

Walkers Lake is located at Avon Plains, with the nearest Wimmera Southern Mallee towns being Donald, St Arnaud, Marnoo, Rupanyup and Minyip. The lake is overseen by a Committee of Management and is open for camping (with some toilet facilities).

Walkers Lake has a basin volume of 900 megalitres. Annual ‘top-up’ volume from the Wimmera Mallee Pipeline meets the evaporation and seepage losses and is supplemented by natural runoff in wetter periods. The pipeline supply is delivered at a heavily subsidised rate per megalitre which reflects the engagement undertaken by GMMWater with its customer base in development of pricing submissions. When full, it covers an area of around 27 hectares.



There are no specific clubs or organisations making regular use of facilities at Walkers Lake, but a few host events at the lake from time to time, for example the St Arnaud Anglers Club. The lake is a relatively un-promoted gem for people looking for a great fishing, kayaking and boating spot in a secluded location. It is very popular with locals. However, participation in 2019-20 was decimated. From mid-November until late-February the lake was closed to recreational use due to blue-green algae and there were massive fish mortalities during this period (in early February). The official blue-green algae warning period extended from November 17th, 2019 to February 24th and then again from 17th March to 27th May, 2020 (the latter overlapping with the start of COVID 19 pandemic restrictions).

Following the decimation of participation in 2019-20, Walkers Lake rebounded somewhat in 2020-21 despite the ongoing COVID pandemic affects. It was one of very few WSM waterbodies to record an increase in participation.

Estimated overnight visitors and day trip users of Walkers Lake in 2016-17 to 2020-21 are summarised in Table 6.7. These estimates have been developed through interviews on site and discussions with the Committee of Management.

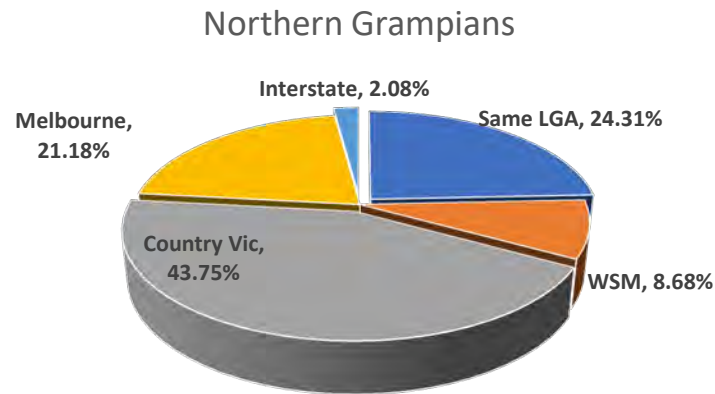
Table 6.7: Estimated Overnight and Day Visitors to Walkers Lake, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2016-17	768	3,101	1,430	2,198
2017-18	1,225	4,112	1,494	2,719
2018-19	1,256	6,040	1,540	2,796
2019-20	469	1,500	580	1,049
2020-21	1,067	5,134	1,342	2,409
% per annum change	8.58%	13.43%	-1.58%	2.32%
% 2019-20 to 20-21	127.70%	242.26%	131.37%	129.73%

6.3 ECONOMIC CONTRIBUTION

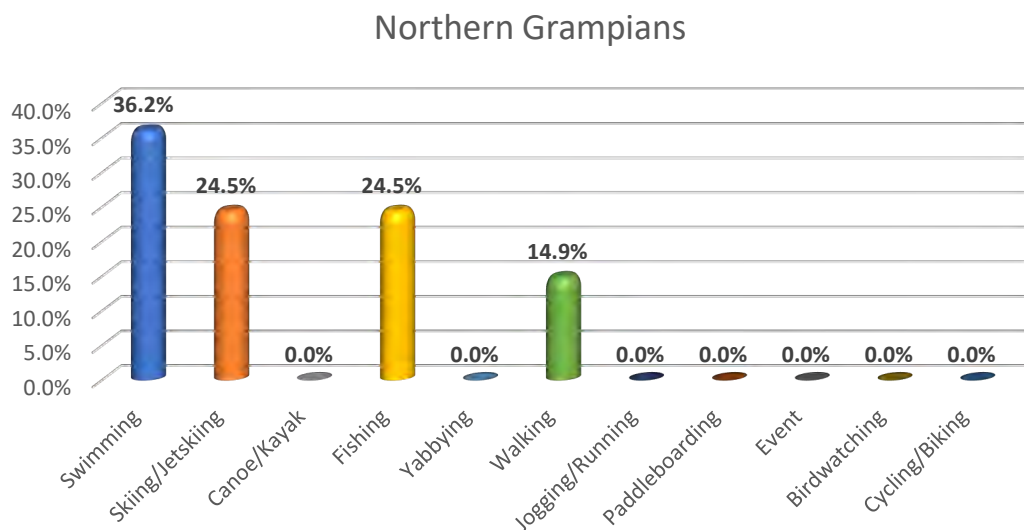
Figure 6.1 shows 33% of recreational water users at Northern Grampians Shire sites were Wimmera Southern Mallee residents in 2020-21 (an increase on 2020-21), and a further 44% were from other parts of country Victoria. Melbourne metropolitan visitation has been higher than other parts of the WSM throughout the past five years and this continued, albeit lower than previous years, at 21%, while interstate visitors made up only 2% of visitation.

Figure 6.1 Residential Location of Recreational Water Users, Northern Grampians Shire



Relative participation in recreational activities at Northern Grampians lakes and weirs in 2020-21 is shown in Figure 6.2.

Figure 6.2 Recreational Activities at Northern Grampians Lakes and Weirs, 2020-21



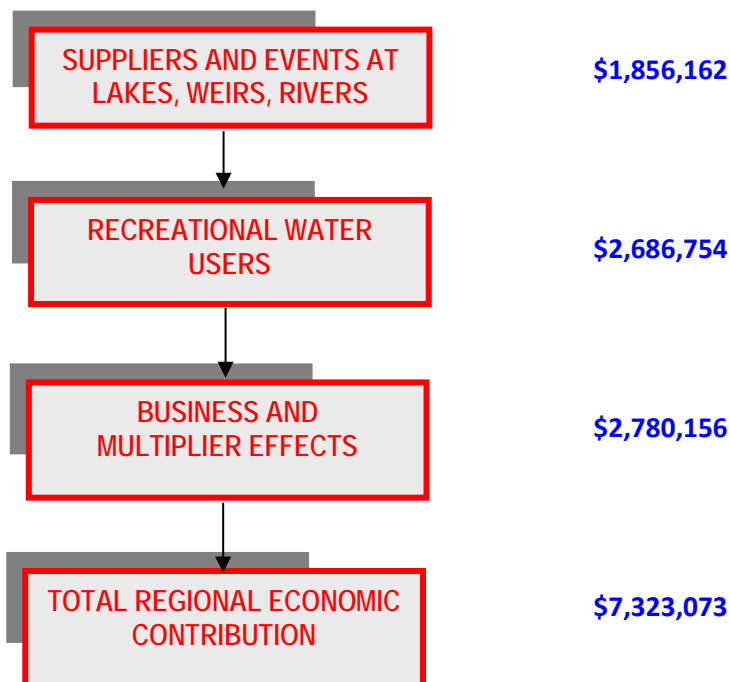
Tables 6.8 and 6.9 and Figure 6.3 detail the estimated 2020-21 economic contribution of the assessed recreational water facilities in Northern Grampians Shire.

Table 6.8: Estimated Economic Contribution 2020-21: Recreational Water Facility Users

	Total Overnight Visitors	Total Visit Nights	Active Day Visitors	Passive Day Visitors	Total Participation	% Change on 2019-20
Visitation and Participation						
Lake Bellfield	1,380	3,078	1,895	10,064	13,339	-15.31%
Lake Fyans	16,073	61,238	1,823	2,751	20,646	-12.46%
Lake Lonsdale	90	254	0	950	1,040	-65.68%
Walkers Lake	1,067	5,134	1,342	n.a.	2,409	129.65%
Lake Wartook	66	206	254	345	665	-58.66%
Total Northern Grampians	18,676	69,909	5,313	14,110	38,099	-15.38%
Visitor Expenditure (\$)						
Lake Bellfield		\$225,577	\$49,843	\$34,721	\$310,141	-8.57%
Lake Fyans		\$2,185,110	\$26,467	\$8,802	\$2,220,379	1.24%
Lake Lonsdale		\$6,914	\$0	\$2,565	\$9,479	-68.40%
Walkers Lake		\$110,568	\$27,676	n.a.	\$138,243	212.00%
Lake Wartook		\$4,705	\$3,806	\$949	\$8,511	-75.80%
Total Northern Grampians		\$2,532,874	\$107,792	\$47,038	\$2,686,754	1.70%

Table 6.9: Estimated Economic Contribution 2020-21: Supplier Organisations

Suppliers: Direct	
Caravan Parks/Committees of Management	\$1,029,629
Events and Other Businesses	\$28,000
Statutory Agencies ²³	\$798,533
Total Northern Grampians Shire	\$1,856,162

Figure 6.3 2020-21 Estimated Recreational Water Regional Economic Contribution: Northern Grampians Shire²³ Statutory agencies include Fisheries Victoria, Wimmera CMA and GWMWater

7. RECREATIONAL WATER FACILITIES IN WEST WIMMERA SHIRE

7.1 OVERVIEW

As the name implies, West Wimmera is at the western edge of the Wimmera Southern Mallee region adjoining the South Australian border. Its largest townships are Edenhope (on the Wimmera Highway) and Kaniva (on the Western Highway).

West Wimmera is the smallest of the region's LGAs in terms of population and the largest in area and has the lowest density of population of all LGAs in Victoria. At June 2020, West Wimmera had a population of 3,810²⁴. Its population has been declining over many years with the rate of decline slightly slowing. In the past year the rate of decline was 0.8%.

The major industry in the Shire is agriculture, encompassing grains, small seeds, wool, beef, pork, olives, vegetables, timber and hay. It contributes 44.0% of jobs in the Shire, although the number of jobs in agriculture has been decreasing at 2.1% per annum. It also has a sizeable transport cartage industry, primarily associated with the agricultural resource base. Health care and social assistance has become the second largest employing industry in the Shire over the past two decades to 2016; now 12.4% of all jobs and increasing at 0.3% per annum (at a time when total jobs have been decreasing by 1.4% per annum). Edenhope's hospital and aged care facilities are located on the foreshore of Lake Wallace.

Some West Wimmera Shire towns have high levels of socio-economic disadvantage, with Goroce and Minimay being exceptions. Table 4.1 shows the SEIFA rankings of the five 'suburbs' compared with all those in Victoria, revealing:

- Edenhope is the most disadvantaged, ranking 171st of all 1,516 suburbs in the State.
- Apsley ranking 317th
- Kaniva ranking 351st
- Goroce ranking 530th
- Minimay ranking quite highly at 1,173rd and in more advantaged 20% of suburbs.

Table 7.1: SEIFA Indices for West Wimmera Shire Suburbs, 2016

	Usual Resident Population		Ranking within Victoria			Minimum score for SA1s in area	Maximum score for SA1s in area
		Score	Rank	Decile	Percentile		
Apsley	277	936	324	2	13	936	936
Edenhope	946	937	332	2	13	902	1016
Goroce	299	915	200	1	8	866	1051
Kaniva	803	975	775	3	29	927	1032
Minimay	84	1049	2194	9	83	1049	1049

Note: The SEIFA Index used in this table relates to Socio-Economic Advantage and Disadvantage.

The Australian Bureau of Statistics broadly defines relative socioeconomic advantage and disadvantage in terms of people's *access to material and social resources, and their ability to participate in society*. There are 2,672 state suburbs in Victoria. A score of 1,000 or above tends to indicate an area which is relatively advantaged, and a score below 1,000 is an area which is relatively disadvantaged. In any of the Wimmera Southern Mallee 'suburbs' there are likely to be pockets which are relatively more advantaged and disadvantaged than the suburb as a whole. The minimum and maximum scores for these smaller pockets (shown as SA1s, Statistical Area 1s) are presented in the final two columns of the table.

²⁴ ABS, Regional Population Growth 2020 (March 2021)

Fisheries Victoria has stocked 51,739 fingerlings and advanced stocker fish in the selected lakes in West Wimmera Shire during the three-year period including 2020-21²⁵. Each Lake features different species: Trout in Lake Wallace, Murray cod at Charlegrark, and golden perch at Ratzcastle. Details of the number and species of stockings over this period is summarised in Table 7.2.

Table 7.2 Fish Released in West Wimmera Shire Selected Lakes 2018-2021

Units stocked (fingerlings and/or advanced stockers)	Brown Trout	Rainbow Trout	Murray Cod	Golden Perch	Silver Perch	Total
West Wimmera Shire						
Lake Charlegrark			20,539			20,539
Lake Bringalbert				6,000		6,000
Lake Ratzcastle				6,000		6,000
Lake Wallace	6,700	13,500			5,000	25,200

In 2020-21, the four selected lakes in West Wimmera Shire experienced the most difficult set of circumstances in the five years since the commencement of *WSM Socio-Economic Value of Recreational Water* assessments. There was a confluence of factors which led to recreational water participation and socio-economic value being well down in 2020-21 compared with previous years:

- Water levels were too low for recreational activities at lakes Ratzcastle and Bringalbert.
- The water level was lower and the water quality was poor at Lake Wallace due to a high coverage of ribbon weed.
- Significant events were cancelled at Lake Charlegrark and Lake Wallace as a consequence of the COVID pandemic.
- The Shire's proximity to South Australia and ongoing restrictions and uncertainties over border closures and a 'border bubble' during COVID outbreaks had a large effect on the normal attraction of South Australian residents to the West Wimmera waterbodies.

7.2 SELECTED RECREATIONAL WATER FACILITIES

7.2.1 Lake Wallace

Lake Wallace, or Connadoyen, is a freshwater lake surrounded by the Edenhope township. The lake is part of a natural wetland chain system fed by Back Swamp and was home to Aboriginal people for thousands of years prior to European settlement of the district. Connadoyen was renamed Lake Wallace in 1845 after the first European visitor to the region, William Wallace. In 1866, the banks of the lake became the main training area for an Aboriginal cricket team that later became the first Australian team to tour England in 1868.

The lake supports an incredibly wide range of birdlife, plants and native frogs, including rare and endangered and migratory species.

²⁵ Stocking fish in recreational waterways is considered similar to providing an asset, for which there will be a return on investment over three years.

Residents of Edenhope overwhelmingly believe that Lake Wallace is one of, if not the, key physical asset in the community, and is the town's lifeblood. Although historically a permanent wetland, during the Millennium drought from 2001 until 2016 Lake Wallace was largely empty, greatly affecting town morale. Many residents regularly visit, walk, run and picnic around the lake's 5.5km perimeter foreshore, and capture photographs of wildlife, sunrises and the pier. Lake Wallace is frequently used for boating, fishing and swimming. It is known for good fishing from bank or boat. The lake contains redfin and is stocked annually by Fisheries Victoria with brown and rainbow trout. Annual events include Henley on Lake Wallace and the Edenhope Fishing Competition.

The prominence of Lake Wallace in Edenhope means that it has a direct effect on amenity, liveability, business activity, tourism and real estate values around its perimeter. Along with 70 houses, two schools, a hospital; various recreational and sporting facilities enjoy lake views. Edenhope Lakeside Tourist Park, on the south bank, has cabins, powered and unpowered sites. During the annual fishing competition, free camping is offered on the north and east sides of the lake.



Reduced travel to the region and restrictions on physical activities due to COVID-19 in 2020 resulted in the lake being closed during Autumn 2020 and the disruptions and travel restrictions continued periodically into 2020-21. South Australian Border closures and cancellation of the November 2020 fishing competition and other local events affected visitation.

Thick weed and lower water levels compounded COVID pandemic issues throughout 2020-21 with power boating and fishing becoming untenable. Residents continued to enjoy the ambiance of the lake perimeter walking track and its amenities, but there was an obvious drop in interstate and intrastate visitors using these facilities.

Increased confidence in water levels in Lake Wallace encouraged the community to run additional events during 2017-18 to 2019-20, increasing the number of recreational users considerably. A good growth rate from stocked trout, an annual fishing event in November, and other competitions also attract recreational fishers. In 2019-20 there was an increase in passive users of the lake although the number of boat fishers due to a build-up of weed and the discontinuation of a 'tagged fish' competition, and this decline was compounded by the COVID 19 restrictions from late March.

Estimated overnight visitors and day trip users of Lake Wallace at Edenhope in 2016-17 to 2020-21 are summarised in Table 7.3. These estimates have been developed through interviews on site, data and discussions with Edenhope community organisations.

Table 7.3: Estimated Overnight and Day Visitors to Lake Wallace, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	4,481	19,834	2,038	9,842	16,361
2017-18	5,557	20,783	2,465	9,860	17,882
2018-19	6,018	25,870	3,435	9,868	19,321
2019-20	3,761	10,576	2,591	12,265	18,617
2020-21	1,226	3,850	921	12,068	14,215
% per annum change	-27.67%	-33.62%	-18.01%	5.23%	-3.45%
% 2019-20 to 2020-21	-67.40%	-63.59%	-64.45%	-1.61%	-23.65%

7.2.3 Lake Charlegrark

Lake Charlegrark is a natural lake located between Kaniva and Edenhope. The nearest township is Goroke (the traditional owners', Wotjobaluk people, name for magpie) and the small community of Minimay is just 3 kilometres to the north-west. Lake Charlegrark has only been dry twice in history; from 1870 to 1877 (8 years) and then 2005 to 2009. The Lake has a depth of 3.5 to 5 metres.

Fish were first stocked in Lake Charlegrark in the 1950s, all Murray cod. The largest caught in recent years (2-3) has been 82 cm. There have been 20,539 fingerlings released in the past three years. The lake also contains a few redfin, but there is not a problem with carp infestation at Charlegrark.

This lake is popular for water skiing and fishing during holiday periods over warmer months. Families are attracted to the camping ground where there are powered facilities, a shower block and barbecue area. Camp fees are \$7.00 per person (free for children under 12 years). Powered sites are \$25. There are also self-contained cottages and a house available for bookings.

There is private boutique style accommodation on the eastern side of the lake (opposite the main camping and caravan park) and a lodge (Langley Lodge) about 3 kilometres from the lake and suitable for large groups, functions and worker accommodation.

Regular maintenance works and small capital improvements are made by the Foreshore Committee. In the 2016-17 year this included installation of 2 new electric barbecues in Crabtree Hall (the functions facility) within the reserve, upgrading of navigational aids on the lake, a solar panel for Crabtree Hall, and new water pumps. In 2017-18 there was an upgrade to three phase power and construction of an all-abilities amenities block, together with upgrades to barbecue and seating areas.

An on-site catering businesses Charlie's Diner and 'Café La Demi' operate from time to time at the lake over the summer season.

The main events normally held at Lake Charlegrark were cancelled in 2020-21. However, good water quality and adequate water levels resulted in family and group visit nights and active day participation at Charlegrark being greater than any of the other recreational waterbodies in West Wimmera Shire.



Estimated overnight visitors and day trip users of Lake Charlegrark in 2016-17 to 2020-21 are summarised in Table 7.4. These estimates have been developed through interviews on site and discussions with the Lake Charlegrark foreshore management.

Table 7.4: Estimated Overnight and Day Visitors to Lake Charlegrark, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2016-17	1,697	6,873	2,215	3,912
2017-18	1,745	7,776	2,200	3,945
2018-19	1,467	7,792	2,400	3,867
2019-20	1,122	5,322	1,938	3,060
2020-21	1,055	5,255	1,688	2,743
% per annum change	-11.20%	-6.49%	-6.57%	-8.49%
% 2019-20 to 2020-21	-5.99%	-1.26%	-12.90%	-10.37%

7.2.3 Lake Ratzcastle

Lake Ratzcastle is located 10 kilometres south of Goroke on the Goroke-Harrow Road. When full the lake covers a surface area of around 14 hectares. The lake only fills on a seasonal basis but is an iconic wetland. The lake and its environs are understood to have significant Aboriginal cultural heritage values.

Camping is permitted at Lake Ratzcastle, at a good selection of unpowered sites, but there are no booking arrangements or camping fees. Access to the camping area is along 2 kilometres of unsealed road. Picnic facilities for day visitors are available, including barbecues and picnic tables. Flush toilets and a solar-heated shower are provided. No drinking water is supplied, although there is limited unpotable water at the on-site rainwater tanks.

The lake foreshore is well maintained by the Goroke Lions Club.

The lake was effectively dry throughout 2020-21; preventing all normal recreational activities, and only a few overnight visitors were attracted by the serenity of the camping sites and the flora and fauna of the area.



Estimated overnight visitors and day trip users of Lake Ratzcastle for 2017-18 to 2020-21 are summarised in Table 7.5. These estimates have been developed through interviews on site and discussions with the Lake Ratzcastle Committee/Lions Club.

Table 7.5: Estimated Overnight and Day Visitors to Lake Ratzcastle, 2017-18 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2017-18	1,653	6,265	1,150	2,803
2018-19	1,537	6,641	1,100	2,637
2019-20	426	1,048	385	811
2020-21	55	144	0	55
% per annum change	-67.84%	-71.60%	-100.00%	-73.03%
% 2019-20 to 2020-21	-87.09%	-86.31%	-100.00%	-93.22%

7.2.4 Lake Bringalbert

Lake Bringalbert was included in the lakes and weirs assessment for the first time in 2018-19. The lake is just 18 minutes' drive from the border with South Australia and is particularly popular with visitors from country South Australia who, in past years, made up almost 85% of recreational users. Of course, South Australian visitation has been restricted for long periods during the COVID pandemic. As well the water level at Bringalbert was extremely low during 2020-21 to the point where recreational activities were neither practical nor enjoyable.

Estimated overnight visitors and day trip users of Lake Bringalbert in 2018-19 to 2020-21 are summarised in Table 7.6. These estimates have been developed through interviews on site and discussions with the Committee of Management.

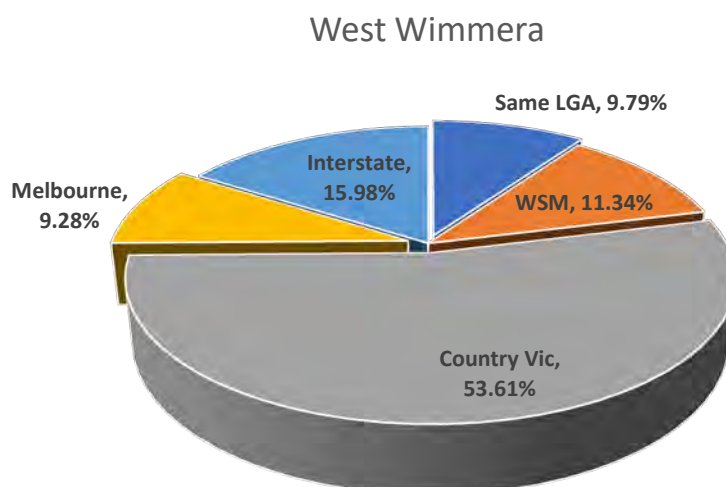
Table 7.6: Estimated Overnight and Day Visitors to Lake Bringalbert Reservoir 2018-19 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2018-19	743	3,046	1,750	2,493
2019-20	70	235	197	267
2020-21	45	104	0	45
% per annum change	-75.39%	-81.55%	-100.00%	-86.56%
% 2019-20 to 2020-21	-35.40%	-55.90%	-100.00%	-83.12%

7.3 ECONOMIC CONTRIBUTION

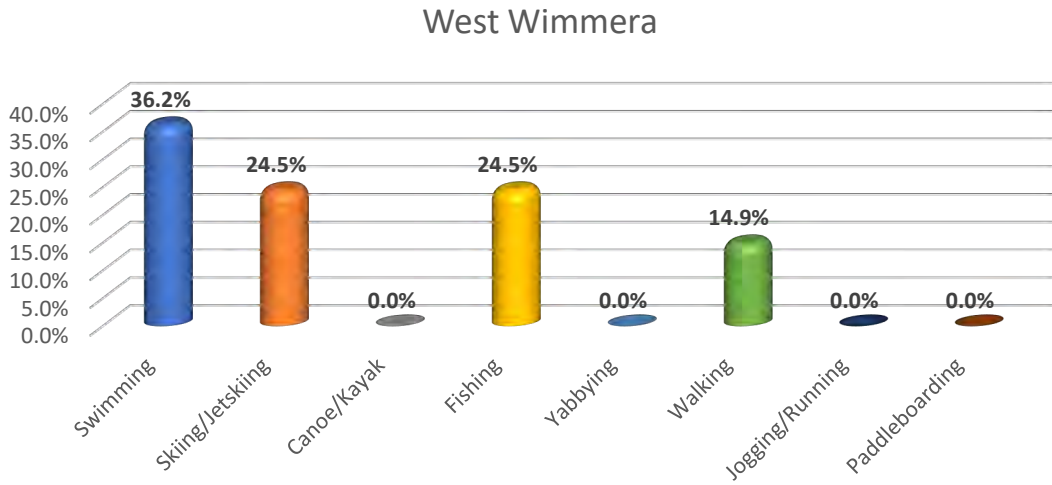
Figure 7.1 shows 21% of recreational water users at West Wimmera Shire sites were Wimmera Southern Mallee residents in 2020-21, and a further 44% were from other parts of country Victoria. Melbourne metropolitan visitation was 9%, while interstate visitors made up 16% of visitation (well below previous years but still overwhelmingly from South Australia).

Figure 7.1 Residential Location of Recreational Water Users, West Wimmera Shire



Relative participation in recreational activities at West Wimmera lakes and weirs in 2020-21 is shown in Figure 7.2.

Figure 7.2 Recreational Activities at West Wimmera Lakes and Weirs, 2020-21



Tables 7.7 and 7.8 and Figure 7.3 detail the estimated 2020-21 economic contribution of the assessed recreational water facilities in West Wimmera Shire.

Table 7.7: Estimated Economic Contribution 2020-21: Recreational Water Facility Users

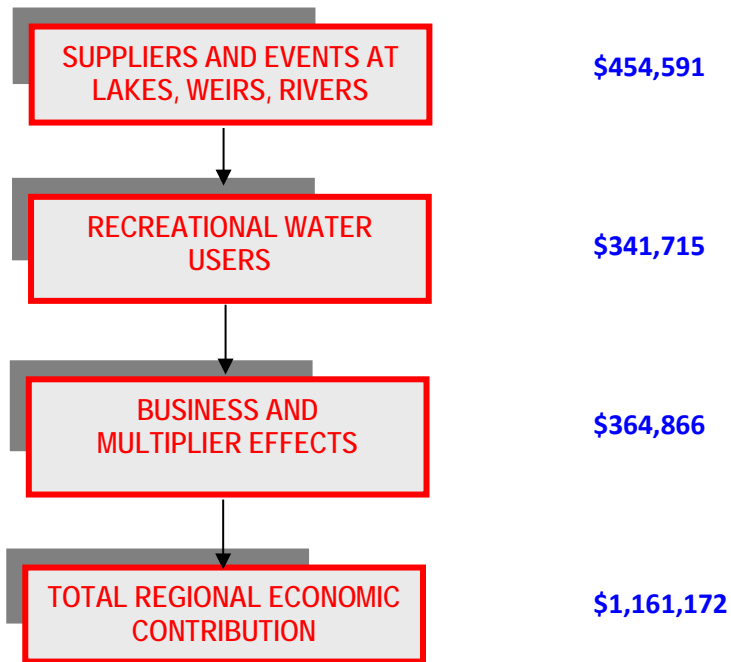
	Total Overnight Visitors	Total Visit Nights	Active Day Visitors	Passive Day Visitors	Total Participation	% Change on 2019-20
Visitation and Participation						
Lake Charlegrark	1,055	5,255	1,688	n.a.	2,743	-10.36%
Lake Ratzcastle	55	144	0	n.a.	55	-93.22%
Lake Bringalbert	45	104	0	n.a.	45	-83.15%
Lake Wallace	1,226	3,850	921	12,068	14,215	-23.64%
Total West Wimmera	2,381	9,352	2,609	12,068	17,058	-25.04%
Visitor Expenditure (\$)						
Lake Charlegrark		\$130,800	\$28,527	n.a.	\$159,327	-19.95%
Lake Ratzcastle		\$1,538	\$0	n.a.	\$1,538	-93.07%
Lake Bringalbert		\$2,370	\$0	n.a.	\$2,370	-70.02%
Lake Wallace		\$118,092	\$16,118	\$44,271	\$178,480	-58.07%
Total West Wimmera		\$252,800	\$44,645	\$44,271	\$341,715	-47.81%

Table 7.8: Estimated Economic Contribution 2020-21: Supplier Organisations

Suppliers: Direct	
Caravan Parks/Committees of Management	\$83,174
Events and Other Businesses	\$16,000
Statutory Agencies ²⁶	\$355,417
Total West Wimmera Shire	\$454,591

²⁶ Statutory agencies include Fisheries Victoria, Wimmera CMA and GWM Water

Figure 7.3 2020-21 Estimated Recreational Water Economic Contribution: West Wimmera Shire



8. RECREATIONAL WATER FACILITIES IN YARRIAMBIACK SHIRE

8.1 OVERVIEW

Yarriambiack Shire is in the north east of the Wimmera Southern Mallee region. The north of the Shire is characterised by the dunes of the Lowan Mallee and sandy plains of the Mallee, while the south of the Shire is part of the undulating plains of the Wimmera. Warracknabeal is the largest township in the Shire, followed by Murtoa, Hopetoun, Minyip, Rupanyup and Beulah. Warracknabeal is centrally located in the Shire; 57 kilometres north of Horsham and around 350 kilometres north east of Melbourne.

The Shire economy is highly dependent on broadacre farming and so are the Shire's urban centres, which have economies that have built their business bases to contribute to agribusiness supply chains and to provide services to farming communities. The agricultural activity is dominated by wheat, barley, lambs and wool, grain legumes, and oilseeds. This agricultural focus has given the Shire and its towns many distinctive features, strong resilience and connected communities, but it has also led to decades long population decline as farms have become bigger and more automated, and the financial returns from agricultural commodities have continued to decline in an increasingly competitive global environment. In 2016, agriculture contributed 27.5% of all jobs in the Shire, with health care and social services being the second largest employing industry (19.8% of jobs).

Tourism is an emerging sector in Yarriambiack in the past few years, as the Shire which pioneered the concept of an art silo trail. This tourism stimulus is having a flow-on effect to other local attractions such as the lakes and weir pools, annual events, and historic attractions (such as the 'stick shed' and agricultural machinery museums).

The resident population of Yarriambiack Shire has been decreasing by an annual average of 1.1% over the past decade. In 2020, the population was 6,588 (having declined by 0.7% in the past year)²⁷.

Yarriambiack towns have high levels of socio-economic disadvantage. Table 8.1 shows the SEIFA rankings of the eight 'suburbs' compared with all those in Victoria, revealing:

- Minyip is the most disadvantaged, ranking 145th of all 1,516 suburbs in the State.
- Warracknabeal ranking 161st
- Murtoa ranking 225th
- Hopetoun ranking 264th
- Brim and Beulah ranking 437th and 603rd, respectively.

²⁷ ABS Regional Population Growth, Australia 2020 (March 2021)

Table 8.1: SEIFA Indices for Yarriambiack Shire Suburbs, 2016

	Usual Resident Population		Ranking within Victoria			Minimum score for SA1s in area	Maximum score for SA1s in area
	Score	Rank	Decile	Percentile			
Beulah	329	946	408	2	16	868	1036
Brim	171	993	1104	5	42	993	993
Hopetoun	739	938	335	2	13	871	1036
Minyip	524	911	167	1	7	871	1038
Murtoa	865	923	250	1	10	872	1065
Patchewollock	133	983	903	4	34	964	1016
Rupanyup	536	959	561	3	21	902	1077
Warracknabeal	2744	925	161	2	11	855	1056

Note: The SEIFA Index used in this table relates to Socio-Economic Advantage and Disadvantage.

The Australian Bureau of Statistics broadly defines relative socioeconomic advantage and disadvantage in terms of people's *access to material and social resources, and their ability to participate in society*. There are 2,672 state suburbs in Victoria. A score of 1,000 or above tends to indicate an area which is relatively advantaged, and a score below 1,000 is an area which is relatively disadvantaged. In any of the Wimmera Southern Mallee 'suburbs' there are likely to be pockets which are relatively more advantaged and disadvantaged than the suburb as a whole. The minimum and maximum scores for these smaller pockets (shown as SA1s, Statistical Area 1s) are presented in the final two columns of the table.

Fisheries Victoria has stocked 117,200 fingerlings and advanced stock in Lake Lascelles, Lake Marma and Yarriambiack Creek (servicing the weir pools) in Yarriambiack Shire during the three-year period including 2018-21²⁸. Details of the number and species of stockings over this period is summarised in Table 8.2.

Table 8.2 Fish Released in Yarriambiack Shire 2018-2021

Units stocked (fingerlings and/or advanced stockers)	Rainbow Trout	Murray Cod	Golden Perch	Silver Perch	Total
Yarriambiack Shire					
Lake Lascelles		8,000	15,000	65,000	88,000
Lake Marma	2,200		9,000		11,200
Weir Pools – Yarriambiack Creek			18,000		18,000

8.2 SELECTED RECREATIONAL WATER FACILITIES

8.2.1 Lake Lascelles

Lake Lascelles has a basin volume of 440 megalitres. It is located within the Hopetoun town area and is a very popular holiday and day visit destination. Annual 'top-up' volume from the Wimmera Mallee Pipeline meets the evaporation and seepage losses and is supplemented by natural runoff in wetter periods. The pipeline supply is delivered at a heavily subsidised rate per megalitre which reflects the engagement undertaken by GWMWater with its customer base in development of pricing submissions.

It is attractive for walking, swimming, boating, skiing, fishing and bird watching. Increased water security from Wimmera Mallee Pipeline allocation has given the lake more security to people who choose to return annually. A dedicated fishing 'precinct' adjacent to the lake was completed in 2019.

²⁸ Stocking fish in recreational waterways is considered similar to providing an asset, for which there will be a return on investment over three years.

Lake Lascelles has a variety of accommodation options including free unpowered sites, powered sites for \$20 per night and the eclectic collection of cabins/units at the Mallee Bush Retreat, made to replicate structures from the district's pioneering heritage (such as silos, cow sheds, stables and machinery sheds). The Bush Retreat also has a 'shearing shed' accommodating a functional shared kitchen, fireplace, and television room, which is used for functions, dining and as a multi-purpose area. The Committee of Management was successful in securing grant funds in 2020 for a new all abilities amenities block at the Bush Retreat, which will improve the appeal of the lake to a wide range of potential users.

Lake Lascelles tends to be one of the Wimmera Southern Mallee recreational water facilities that is utilised year-round, although at lower occupancy in the winter months. During the COVID pandemic a few couples and families, without alternative accommodation arrangements, stayed at Lake Lascelles throughout some of the lockdown periods. While there was a decrease in active participation at the lake in 2020-21 this was partially offset by increased average length of stay.



Estimated overnight visitors and day trip users of Lake Lascelles in 2016-17 to 2020-21 are summarised in Table 8.3. These estimates have been developed through interviews on site, Yarriambiack Shire records, and discussions with the Lake Lascelles Committee of Management.

Table 8.3: Estimated Overnight and Day Visitors to Lake Lascelles, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	1,428	6,320	8,052	5,005	14,485
2017-18	1,305	8,228	8,157	5,100	14,562
2018-19	1,609	8,712	8,200	5,100	14,909
2019-20	1,475	8,920	6,492	4,838	12,804
2020-21	1,374	7,348	6,383	4,233	11,990
% per annum change	-0.97%	3.84%	-5.64%	-4.10%	-4.62%
% 2019-20 to 2020-21	-6.84%	-17.63%	-1.67%	-12.50%	-6.36%

8.2.2 Lake Marma

Lake Marma is a small lake, with a basin volume of 170 megalitres. Annual 'top-up' volume from the Wimmera Mallee Pipeline meets the evaporation and seepage losses and is supplemented by natural runoff in wetter periods. The pipeline supply is delivered at a heavily subsidised rate per megalitre which reflects the engagement undertaken by GWMWater with its customer base in development of pricing submissions.

Marma is in the heart of Murtoa's urban area. The 'Lake Marma Loop' encircles the main lake and takes in the main area of the town of Murtoa, giving Murtoa a reputation as a lakeside town. There is a selection of Murtoa - Lake Marma walking trails which encompass natural and historic areas of interest.

Originally a small dammed natural swamp it became incorporated into the Wimmera Mallee water supply system over a century ago and was the source of Murtoa's drinking water until recently, when it became piped to town.

This lake is a tranquil oasis with abundant birdlife and treed surrounds. The Lake has always been a haven for wildlife, due to its safe location within Murtoa, and is famous for sunset and sunrise views. The lake consistently has amounts of ribbon weed, and the Committee of Management is trying to control the extent of weed to reduce impact on recreational activities (fishing, swimming and kayaking).

There is a small caravan park at Lake Marma which is particularly popular with grey-nomad type travellers who tend to stay for extended periods of time. Three new cabins have recently completed, complementing the caravan park sites.

Estimated overnight visitors and day trip users of Lake Marma in 2016-17 to 2020-21 are summarised in Table 8.4. These estimates have been developed through interviews on site and discussions with Lake Marma's Public Park and Gardens Reserve Committee of Management. Participation in 2019-20 was improved by increases in local users and the completion of three new cabins, before the impact of COVID 19. In 2020-21, overall numbers reduced but there was an increase in the average length of stay at the caravan park and cabins.



Table 8.4: Estimated Overnight and Day Visitors to Lake Marma, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	1,110	2,453	1,365	9,237	11,712
2017-18	1,268	2,678	1,456	9,100	11,824
2018-19	1,613	3,711	1,055	9,546	12,214
2019-20	1,097	3,368	791	9,555	11,444
2020-21	1,007	3,596	732	9,250	10,989
% per annum change	-2.40%	10.03%	-14.42%	0.03%	-1.58%
% 2019-20 to 2020-21	-8.17%	6.77%	-7.47%	-3.20%	-3.97%

8.2.3 Brim Weir Pool

Brim weir pool is one of the smallest recreational water facilities in the Wimmera Southern Mallee, with a basin volume of 120 megalitres. Beulah weir pool is larger, with a basin volume of 140 megalitres. Annual 'top-up' volume from the Wimmera Mallee Pipeline meets the evaporation and seepage losses (for both weir pools) and is supplemented by natural runoff in wetter periods. The pipeline supply is delivered at a heavily subsidised rate per megalitre which reflects the engagement undertaken by GWMWater with its customer base in development of pricing submissions.

Redda's Park is the recreational complex on the Yarriambiack Creek at the Brim Weir. It offers camping in a bushland setting, amenities, walking tracks, powered and non-powered sites and BBQ facilities. The park was landscaped and constructed by Brim Lions Club in 2001. Toilets have two hot and cold showers each, timed by push button. The campground is illuminated at night. Powered sites are \$10 per night.

The Yarriambiack Silo Art Trail was pioneered with the artwork on silos at Brim, and the Reserve Committee of Management suggests that it is difficult to separate specific visitation for the Weir (including those people camping or caravanning on-site). Visitor numbers dropped considerably in 2020-21 but the reduction was somewhat compensated by increases in the average length of stay by overnight visitors.



Estimated overnight visitors and day trip users of the Brim Weir Pool in 2016-17 to 2020-21 are summarised in Table 8.5. These estimates have been developed through interviews on site and discussions with the Brim Reserve Committee of Management.

Table 8.5: Estimated Overnight and Day Visitors to Brim Weir Pool, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2016-17	2,172	7,343	5,198	7,370
2017-18	2,483	7,937	5,260	7,743
2018-19	2,245	8,532	5,302	7,547
2019-20	1,667	3,334	4,155	5,822
2020-21	1,178	3,937	3,643	4,822
% per annum change	-14.18%	-14.43%	-8.50%	-10.06%
% 2018-19 to 2019-20	-29.32%	18.10%	-12.32%	-17.19%

8.2.4 Beulah Weir Pool

The Beulah weir is also constructed across the Yarriambiack Creek, creating another recreation ground with powered and unpowered camping sites, a playground, barbecue facilities. Recent new amenities have been installed including a landscaped grassed area and rubbish disposal facilities. The Beulah park is within the town's recreation precinct, offering access to a municipal swimming pool, tennis courts and playground.

Boating is permitted on the Beulah Weir Pool and fishing, bird watching and walking is popular. There is also a public swimming pool in the grounds. Two new cabins, overlooking the weir pool, were constructed at the Beulah Reserve in 2019 and these provide a good complement to the caravan park sites. Unfortunately, the Beulah Hotel closed in 2020 and the town’s supermarket was destroyed by fire in the previous year (and a convenience store operation is trading on an interim basis, until a new community-based supermarket can be established). These commercial realities have reduced the opportunities for visitors to Beulah’s weir pool to spend money locally.



Estimated overnight visitors and day trip users of the Beulah Weir Pool in 2016-17 to 2020-21 are summarised in Table 8.6. These estimates have been developed through interviews on site and discussions with the Beulah Reserve Committee of Management.

Table 8.6: Estimated Overnight and Day Visitors to Beulah Weir Pool, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2016-17	783	3,117	1,176	1,959
2017-18	930	3,282	1,190	2,120
2018-19	1,114	3,825	1,288	2,402
2019-20	882	2,461	989	1,871
2020-21	717	2,308	955	1,672
% per annum change	-2.19%	-7.24%	-5.07%	-3.89%
% 2019-20 to 2020-21	-18.70%	-6.23%	-3.45%	-10.63%

8.2.5 Warracknabeal Weir Pool

Yarriambiack Creek is an inland intermittent watercourse of the Wimmera catchment. The Weir Pool on the Yarriambiack Creek at Warracknabeal, with a basin volume of 210 megalitres, provides recreational water security through an annual volume allocation from the Wimmera Mallee Pipeline to meet evaporation and seepage losses and to supplement natural flows and runoff in wetter periods. The pipeline supply is delivered at a heavily subsidised rate per megalitre which reflects the response by GWMWater to its engagement with the customer base in developing pricing submissions.

In Warracknabeal, the weir pool and the creek meandering through town are part of the recreational water facilities. Warracknabeal Caravan Park is located near the banks of the weir pool section of the creek, providing powered and unpowered sites, bathroom amenities, barbecues and laundry facilities, with cabins proposed for development in 2021-22.



As with the Wimmera River in Horsham, Warracknabeal Weir Pool is used widely by local residents and community groups for walking and other forms of regular exercise: A use which became more important to residents during the restrictions imposed by the 2020 COVID 19 pandemic. The creek banks also offer many sites for tranquil picnics, fishing and relaxation. There is a fauna park in a main section of the creek, near Warracknabeal's commercial district, and several walking tracks that transect walking bridges across the creek. Among the many regular users of the creek and weir pool at Warracknabeal are:

- The Warracknabeal Angling Club,
- Warracknabeal Ski Club.
- Woodbine Centre Incorporated, visiting most days with its 12-seater bus.
- Primary, secondary and disabled schools
- Informal walking groups.

Membership of both the angling club and ski club have declined slightly in the past three years, and the number of people using ski boats (largely on weekends) declined as well. Warracknabeal’s annual Easter festival, the Y-Fest, focuses strongly on activities along the Creek. It was cancelled due to COVID 19 restrictions in 2020 and again in 2021, although some of the individual ‘component’ events were held in 2021.

Estimated overnight visitors and day trip users of the Warracknabeal Weir Pool in 2016-17 to 2020-21 are summarised in Table 8.7. These estimates have been developed through interviews on site, discussions with the Committee of Management and Yarriambiack Shire Council records.

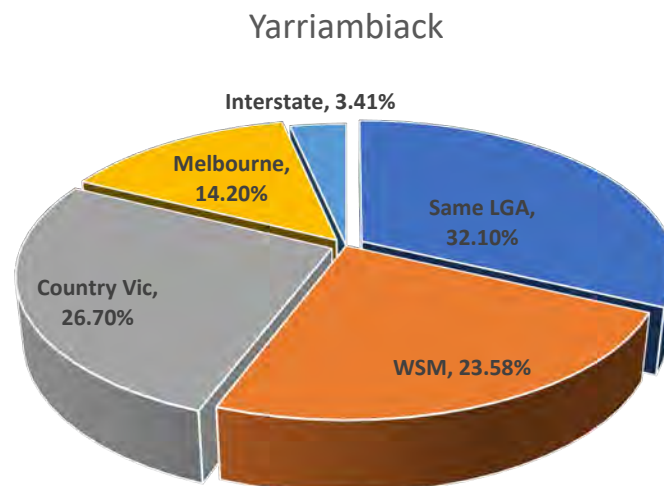
Table 8.7: Estimated Overnight and Day Visitors to Warracknabeal Weir Pool, 2016-17 to 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Users	Total Participants
2016-17	5,101	18,492	3,512	16,415	25,028
2017-18	2,919	10,403	3,319	15,939	22,177
2018-19	2,756	12,277	3,305	16,150	22,211
2019-20	2,251	11,158	2,699	16,392	21,342
2020-21	1,840	8,983	2,464	13,983	18,287
% per annum change	-22.50%	-16.51%	-8.48%	-3.93%	-7.55%
% 2019-20 to 2020-21	-18.25%	-19.49%	-8.70%	-14.70%	-14.32%

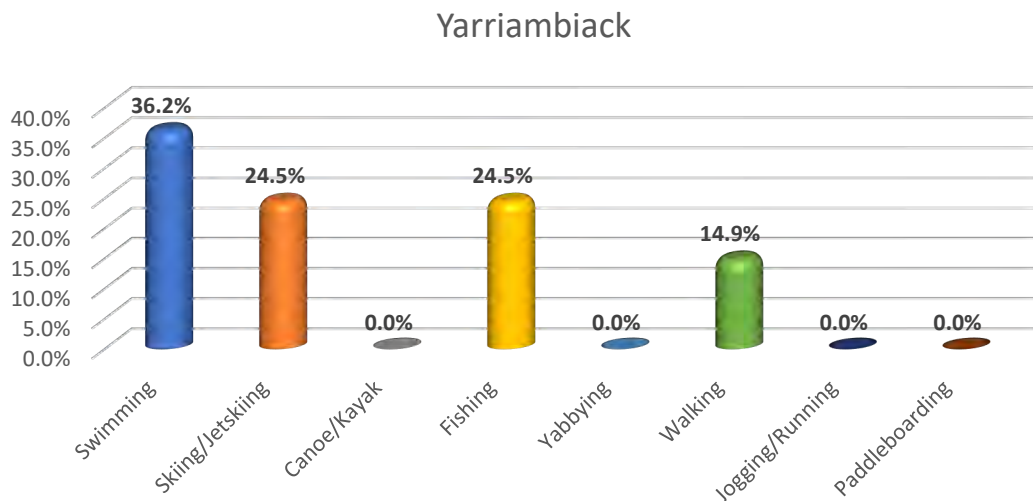
8.3 ECONOMIC CONTRIBUTION

Figure 8.1 shows the majority (56%) of recreational water users at Yarriambiack Shire sites were Wimmera Southern Mallee residents in 2020-21, and a further 27% were from other parts of country Victoria. Melbourne metropolitan area visitation was 14%, while the interstate visitation generated by the Silo Art Trail fell to just 3% in the pandemic affected 2020-21 year.

Figure 8.1 Residential Location of Recreational Water Users, Yarriambiack Shire



Relative participation in recreational activities at Yarriambiack lakes and weirs in 2020-21 is shown in Figure 8.2.

Figure 8.2 Recreational Activities at Yarriambiack Lakes and Weirs, 2020-21

Tables 8.8 and 8.9 and Figure 8.3 detail the estimated 2020-21 economic contribution of the assessed recreational water facilities in Yarriambiack Shire.

Table 8.8: Estimated Economic Contribution 2020-21: Recreational Water Facility Users

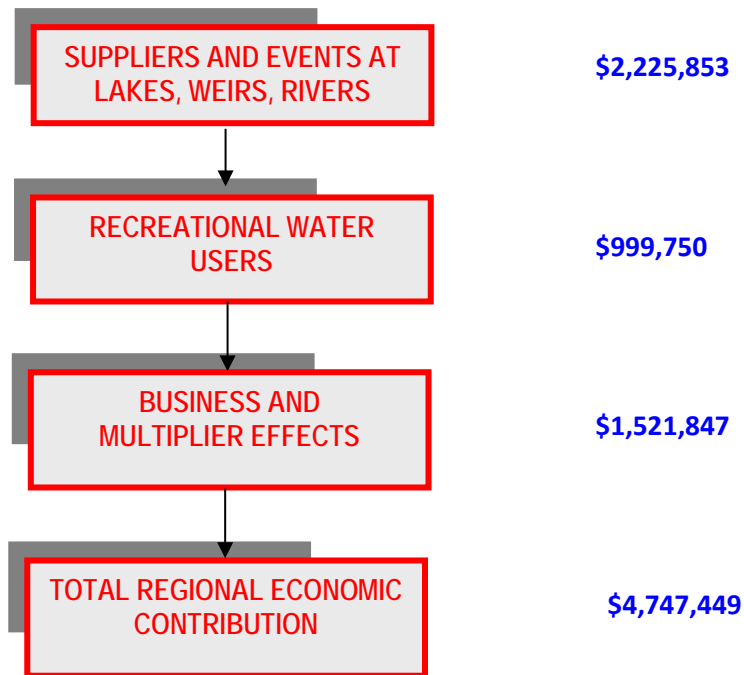
	Total Overnight Visitors	Total Visit Nights	Active Day Visitors	Passive Day Visitors	Total Participation	% Change on 2019-20
Visitation and Participation						
Brim Weir Pool	1,178	3,937	3,643	n.a.	4,822	-17.18%
Beulah Weir Pool	717	2,308	955	n.a.	1,672	-10.65%
Lake Lascelles	1,374	7,348	6,383	4,233	11,990	-6.36%
Lake Marma	1,007	3,596	732	9,250	10,989	-3.98%
Warracknabeal Weir Pool	1,840	8,983	2,464	13,983	18,287	-14.32%
Total Yarriambiack Shire	6,116	26,172	14,178	27,465	47,759	-10.37%
Visitor Expenditure (\$)						
Brim Weir Pool		\$98,952	\$67,844	n.a.	\$166,796	-12.73%
Beulah Weir Pool		\$48,919	\$13,590	n.a.	\$62,509	-40.81%
Lake Lascelles		\$176,559	\$108,519	\$12,077	\$297,155	-21.89%
Lake Marma		\$88,561	\$9,957	\$27,334	\$125,852	-23.64%
Warracknabeal Weir Pool		\$284,438	\$27,381	\$35,621	\$347,439	-7.92%
Total Yarriambiack Shire		\$697,428	\$227,291	\$75,031	\$999,750	-18.01%

Table 8.9: Estimated Economic Contribution 2020-21: Supplier Organisations

Suppliers: Direct	
Caravan Parks/Committees of Management	\$160,713
Events and Other Businesses	\$36,500
Statutory Agencies ²⁹	\$2,028,640
Total Yarriambiack Shire	\$2,225,853

²⁹ Statutory agencies include Fisheries Victoria, Wimmera CMA and GWM Water

Figure 8.3: 2020-21 Estimated Recreational Water Economic Contribution: Yarriambiack Shire



9. RECREATIONAL WATER FACILITY IN RURAL CITY OF MILDURA

9.1 OVERVIEW

Ouyen is a town name derived from the traditional owners' (Wergaia people) word 'wuya-wuya' meaning either ghost waterhole or pink eared duck. Ouyen is an important dryland agricultural centre in the Rural City of Mildura at the junction of the Calder and Mallee Highways. It is 105 kilometres south of Mildura, and 441 kilometres northwest of Melbourne. The town has a population of approximately 1,000.

Establishment of a recreational lake for the people of the Ouyen district has been a highly prioritised project for many years. The townspeople have been lobbying for recreational and environmental water since 1998. At the turn of the twenty first century, water supply for north west Victoria was transitioned from a gravity fed open channel system to a reticulated pipeline. Recreational and environmental water was not part of the initial planning process but was encompassed in the next stage of development of the Wimmera Mallee pipeline. Walpeup Lake Committee was formed with the idea of re-establishing a lake near the small town of Walpeup. After many years of hard work by a dedicated group of individuals, it was determined that the site at Walpeup was not a viable option for a lake and as a result, the project has moved to Ouyen and the existing pipeline.

9.2 SELECTED WATERWAY: LAKE OUYEN

The Ouyen Lake was completed in the 2018-19 and by 2019-20 was fully operational as a recreational waterway. Support infrastructure around the lake such as landscaping, a toilet block and outdoor furniture is still being developed but the lake is full and open to the public. There are strict rules in place, while the rest of the project is undertaken, and at this stage overnight camping is not permitted. Water is delivered to Ouyen Lake by GWMWater through the Northern Mallee Pipeline. It has a basin volume of 450 megalitres.



Fish stocked at Lake Ouyen in the past three years included the following fingerlings and advanced stockers:

- Rainbow trout: 1,005
- Golden Perch: 35,000
- Silver Perch: 74,000

Some of the stocked fish reached legal sizes by 2020-21 and attracted local anglers. Participation at Ouyen Lake is likely to build over future years as the infrastructure around the lake is further enhanced and the landscaped vegetation matures. The COVID pandemic has slowed this growth in 2020-21.

Estimated overnight visitors and day trip users of Lake Ouyen in 2020-21 are summarised in Table 9.1. These estimates have been developed through interviews on site and discussions with the Lake Ouyen Committee of Management.

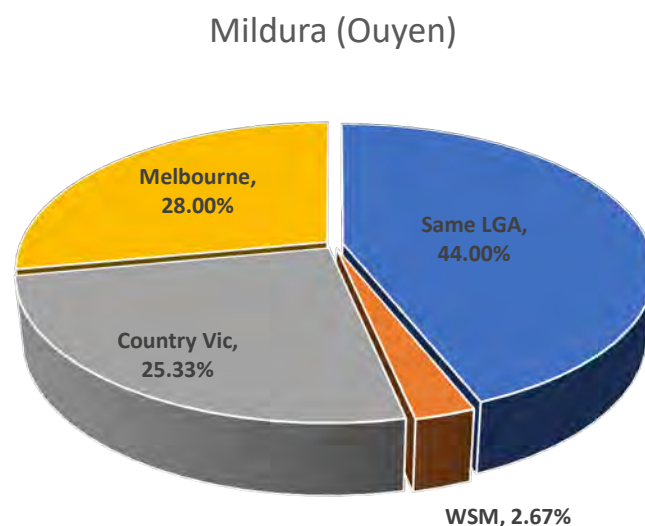
Table 9.1: Estimated Overnight and Day Visitors to Lake Ouyen, 2020-21

	Overnight Visitors	Total visit nights	Active Day Users	Passive Day Visitors	Total Participants
2019-20	0	0	7,020	4,500	11,520
2020-21	200	544	7,500	5,000	12,700
% change 2019-20 to 2020-21	n.a.	n.a.	6.84%	11.11%	10.24%

9.3 ECONOMIC CONTRIBUTION

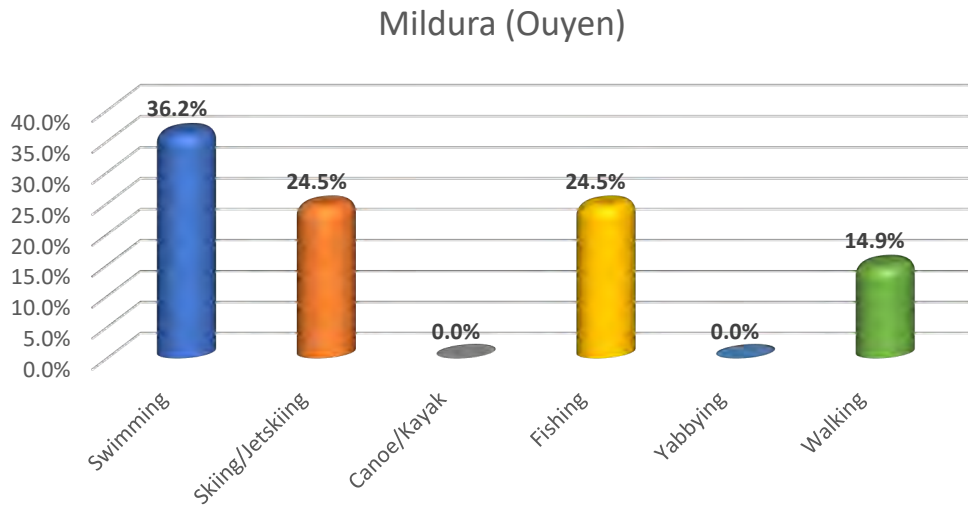
Figure 9.1 shows 44% of recreational water users at Lake Ouyen were locals (Rural City of Mildura residents) in 2020-21, and a further 28% were from WSM and other parts of country Victoria. Melbourne metropolitan visitation was 28%, with no recorded interstate users.

Figure 9.1 Residential Location of Recreational Water Users, Mildura Rural City (Ouyen)



Relative participation in recreational activities at Lake Ouyen in 2020-21 is shown in Figure 9.2.

Figure 9.2 Recreational Activities at Lake Ouyen, 2020-21



Tables 9.2 and 9.3 and Figure 9.3 detail the estimated 2020-21 economic contribution of the assessed recreational water facilities in Mildura Rural City (Ouyen).

Table 9.2: Estimated Economic Contribution 2020-21: Recreational Water Facility Users

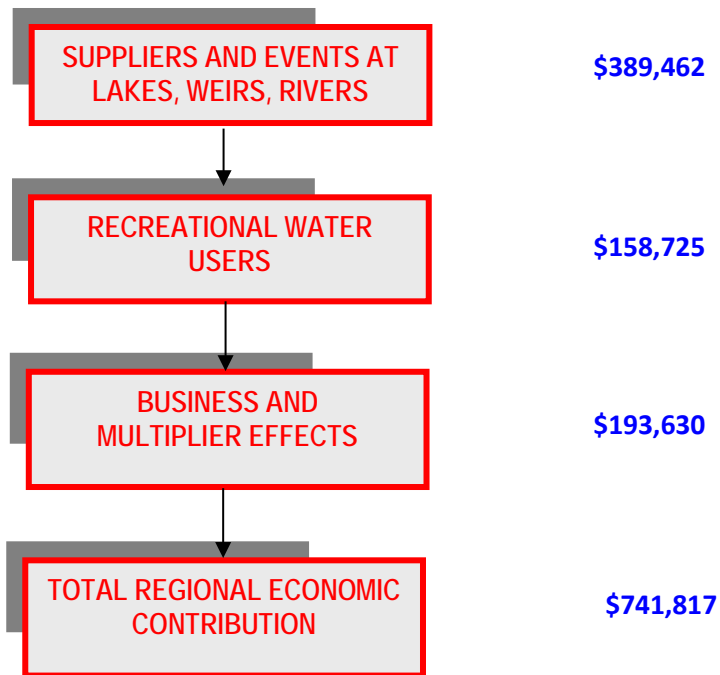
	Total Overnight Visitors	Total Visit Nights	Active Day Visitors	Passive Day Visitors	Total Participation	% Change on 2019-20
Visitation and Participation						
Lake Ouyen	200	544	7,500	5,000	12,700	2.31%
Visitor Expenditure (\$)						
Lake Ouyen		\$14,440	\$129,000	\$15,285	\$158,725	36.69%

Table 9.3: Estimated Economic Contribution 2020-21: Supplier Organisations

Suppliers: Direct	
Caravan Parks/Committees of Management	\$10,629
Events and Other Businesses	\$9,000
Statutory Agencies ³⁰	\$369,833
Total Yarriambiack Shire	\$389,462

³⁰ Statutory agencies include Fisheries Victoria, Wimmera CMA and GWM Water

Figure 9.3: 2020-21 Estimated Recreational Water Economic Contribution: Mildura Rural City (Ouyen)



10. COMMUNITY AND SOCIAL EFFECTS

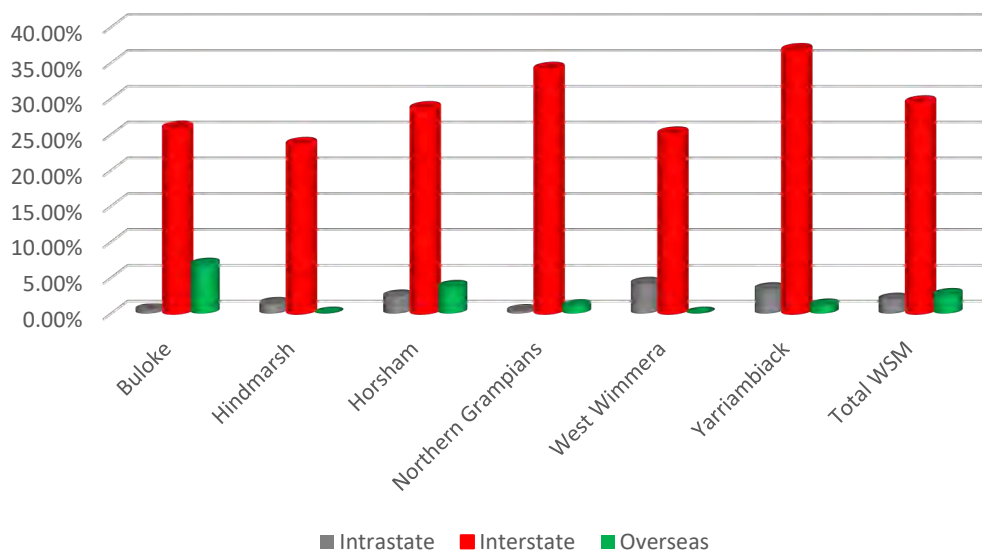
10.1 IMPACTS OF COVID ON PLANNED VACATIONS

The COVID 19 pandemic and the travel restrictions imposed by State Governments created large changes to vacations of WSM recreational water users. A high percentage of interviewed water users, 33.9%, had travel plans disrupted during the 2020-21 year due to periodic lockdowns, concerns over the need to quarantine, and interstate border closures. Of this 33.9% of interviewees, the majority of cancelled trips would have been interstate:

- 5.7% had planned at least one intrastate trip, which had been cancelled.
- 86.6% had planned at least one interstate trip, which had been cancelled.
- 7.7% had planned at least one overseas trip, which had been cancelled.

Figure 10.1 shows that the incidence of trip cancellations was high among water users across all local government areas, the greatest percentage was recorded at sites in Yarriambiack and Northern Grampians.

Figure 10.1 % of Water Users with Trips Cancelled due to COVID Restrictions



The WSM lakes and weir pools have provided very important social and recreational outlets for local residents during the COVID pandemic, at times when intended travel for vacations and other short breaks were necessarily put on hold.

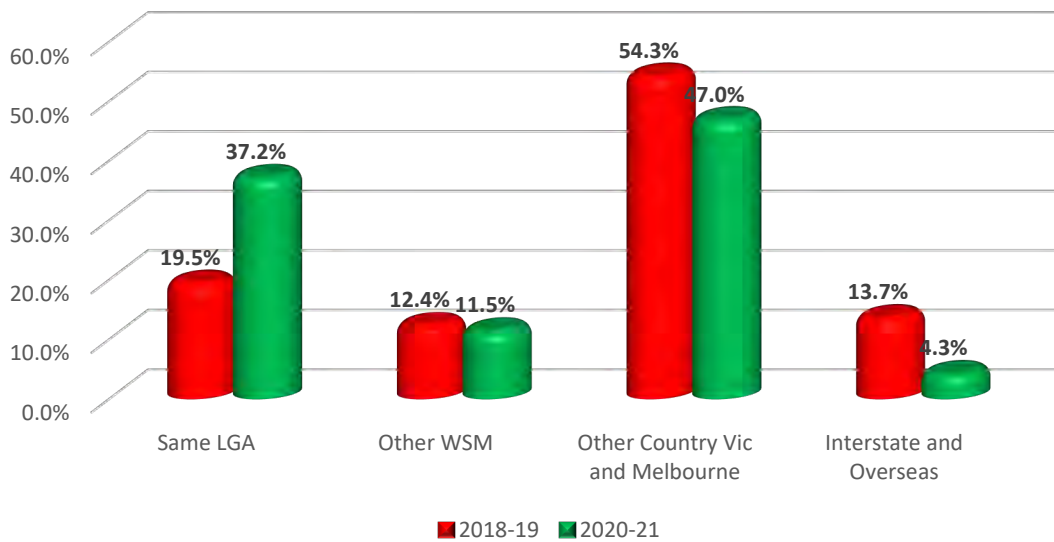
While the WSM lakes and weir pools were beneficiaries of cancelled trips (especially social benefits), the economic benefits were more than offset by reduced interstate, intrastate and international visitors into the region. The shift to a greater proportion of 'local'³¹ recreational water users began during the first year of COVID restrictions (2019-20) and has been compounded in 2020-21 as shown in Figure 10.1. Since 2018-19:

- The percentage of local recreational water users almost doubled; from 19.5% to 37.2%
- The percentage of water users from elsewhere in Victoria (other country Victoria and Melbourne metropolitan area) fell from 54.3% to 47.0%
- The percentage of recreational water users from interstate and overseas fell by more than two-thirds; from 13.7% to 4.3%.

³¹ Meaning people from the same Local Government Area



Figure 10.1 Residential Location of WSM Recreational Water Users 2018-19 to 2020-21



10.2 HEALTH AND LIFESTYLE IMPACTS

Regular participation in physical activity provides significant health benefits to individuals from both a physical and mental perspective.

The physical health benefits analysed in this assessment are derived from the prevention of chronic diseases (such as breast cancer, coronary heart disease, diabetes, bowel cancer and stroke). Mental health benefits are derived from the prevention of anxiety and depression.

The value of Wimmera Southern Mallee recreational water residents' health contribution has been estimated based on the prevention of these physical and mental diseases among the 2020-21 recreational water participation base, and results are summarised in Table 10.1. The assessment is similar to many previous sport and recreation industry studies and includes data input related to the reduction in Disability-Adjusted Life Years (DALY) from the Australian Institute of Health and Welfare and the Australian Government Department of Health.

Modelling of the health benefits is based on conservative estimates and is focussed on selected health issues which are evidenced to be attributed to physical inactivity.

WSM recreational water users achieve a considerable proportion of the physical and mental activities towards a Disability Adjusted Life Year, through the time spent at the water recreational facilities. On average, these estimated percentages were:

	Overnight and Active	Passive
Buloke Shire	31.9%	40.4%
Hindmarsh Shire	54.6%	78.5%
Horsham Rural City	64.6%	91.0%
Northern Grampians Shire	51.8%	21.2%
West Wimmera Shire	36.5%	55.1%
Yarriambiack Shire	84.5%	58.6%
Mildura Rural City (Ouyen)	54.5%	49.0%

Table 10.1 Total Estimated Health Benefits³²

	Physical Health Benefits	Mental Health Benefits	Total Health Benefits
2020-21 WSM Residents			
- Activities at water facilities	\$948,553	\$132,274	\$1,080,828
- Total annual*	\$2,081,370	\$447,672	\$2,529,042
2020-21 Country Victorian Residents			
- Activities at water facilities	\$2,455,607	\$230,749	\$2,686,356
- Total annual*	\$4,059,601	\$405,762	\$4,465,363
2019-20 WSM Residents			
- Activities at water facilities	\$1,424,360	\$171,107	\$1,595,466
- Total annual*	\$2,326,509	\$307,349	\$2,633,858
2019-20 Country Victorian Residents			
- Activities at water facilities	\$2,266,319	\$295,375	\$2,561,694
- Total annual*	\$3,717,781	\$503,577	\$4,221,358

* Total annual figures assume that activities at WSM water facilities are indicative of annual lifestyle

³² Selected health conditions measured by activities required to reduce Disability-Adjusted Life Years (DALYs)

Lakes and other water facilities have been identified as important community assets and directly contribute to improving the quality of life (both physical and mental) of residents and visitors. As walking and swimming are usually conducted in casual or informal settings, access to lakes and water facilities (and their surrounds) encourage and support participation in physical activity.

The estimated health benefits by local government area, for country Victorian residents in 2021-21 are presented in Table 10.2.

Table 10.2 Estimated Physical and Mental Health Benefits, Country Victorian Users, 2020-21

LGA	Water Facility	Physical Health Benefits	Mental Health Benefits	Total Health Benefits
Horsham	Wimmera River-Horsham Green Lake Taylors Lake Lake Toolondo	\$582,305	\$55,538	\$637,842
Hindmarsh	Wimmera River-Dimboola Nhill Lake Wimmera River-Jeparit	\$142,912	\$20,221	\$163,133
Northern Grampians	Lake Bellfield Lake Fyans Lake Lonsdale Lake Wartook Walkers Lake	\$524,041	\$68,380	\$592,422
Buloke	Donald Park Lake Tchum Lake Green Lake, Sea Lake Lake Watchem Lake Wooroonook	\$130,910	\$15,808	\$146,718
West Wimmera	Lake Wallace Lake Charlegark Lake Bringalbert Lake Ratzcastle	\$124,716	\$8,051	\$132,767
Yarriambiack	Brim Weir Pool Beulah Weir Pool Lake Lascelles Lake Marma Warracknabeal Weir Pool	\$882,001	\$50,394	\$932,396
Mildura	Lake Ouyen	\$68,722	\$12,357	\$81,079
		\$2,455,607	\$230,749	\$2,686,356

Australian Government Department of Health Physical Activity and Sedentary Behaviour Guidelines “suggest that Australian adults aged 18 to 64 years should “accumulate 150 to 300 minutes (2 ½ to 5 hours) of moderate intensity physical activity or 75 to 150 minutes (1 ¼ to 2 ½ hours) of vigorous intensity physical activity, or an equivalent combination of both moderate and vigorous activities, each week”. The Disability-Adjusted Life Years (DALY) from the Australian Institute of Health and Welfare is 250 hours of physical activity. Recreational water users who are residents of WSM and Country Victoria tend to have active lifestyles which exceed the minimum recommended levels of physical activity.

Three of the top ten most common diseases in Australia are preventable through physical activity, with 5.0% of all diseases being attributed to physical inactivity (according to the Australian Institute of Health and Welfare). The diseases which are preventable through physical activity have a significant negative impact on the health of Australians aged 45+ years of age. Therefore, participation at water recreation facilities plays a significant preventative role in the later stages of life.

Physical inactivity is also the fourth highest risk of causing disease, behind tobacco, obesity and alcohol use. A total of 94% of the burden of disease resulting from physical inactivity is borne by people aged 15 years and above.

Mental disorders are the third most burdensome disease and are most prominent among younger people and females. Based upon evidence used by the Department of Health to support current physical activity guidelines, a conservative estimate of the preventative effect of adequate levels of physical activity is a 25% reduction in risk of anxiety and depression.

