

ROCKLANDS RESERVOIR:

*Socio-Economic Value
of Recreational and
Environmental Water
2018-19*



Wimmera Development Association

TABLE OF CONTENTS

SUMMARY	Page 3
1. INTRODUCTION	Page 5
1.1 Overview	Page 5
1.2 Scope	Page 6
2. RECREATION AT ROCKLANDS	Page 7
2.1 Fish Stocking Program	Page 7
2.2 Recreational Activities at Rocklands.....	Page 7
3. ECONOMIC AND SOCIAL CONTRIBUTION	Page 10
3.1 Economic Contribution	Page 10
3.2 Community and Social Contribution	Page 10
APPENDIX A: Additional Data and Assumptions	Page 13
APPENDIX B: Methodology Note	Page 15



SUMMARY

S1 Background

Rocklands Reservoir, located on the Glenelg River 14 kilometres upstream from Balmoral, is GWMWater's largest reservoir. With fish stocking rates of around 350,000 fingerlings and advanced stockers per year, it is a major inland Victorian destination for recreational fishing.

S2 Recreational Water Facility Visitation and Usage

- Estimated recreational water users at Rocklands Reservoir in 2018-19 are:
 - Overnight visitors: 14,662
 - Visit nights: 58,072
 - Active daytrip participation (people using the water facility as a day trip destination for fishing, swimming, boating, picnicking, etc): 8,431
 - Total recreational participation: 23,780
 - Total recreation visitor trips involving fishing: 19,930
 - Estimated number of people visiting Rocklands: 16,223

- Activities and amenities around Rocklands are suited to residents and visitors across the spectrum, with good levels of participation across all age ranges. Family groups dominate the overnight visitor users.

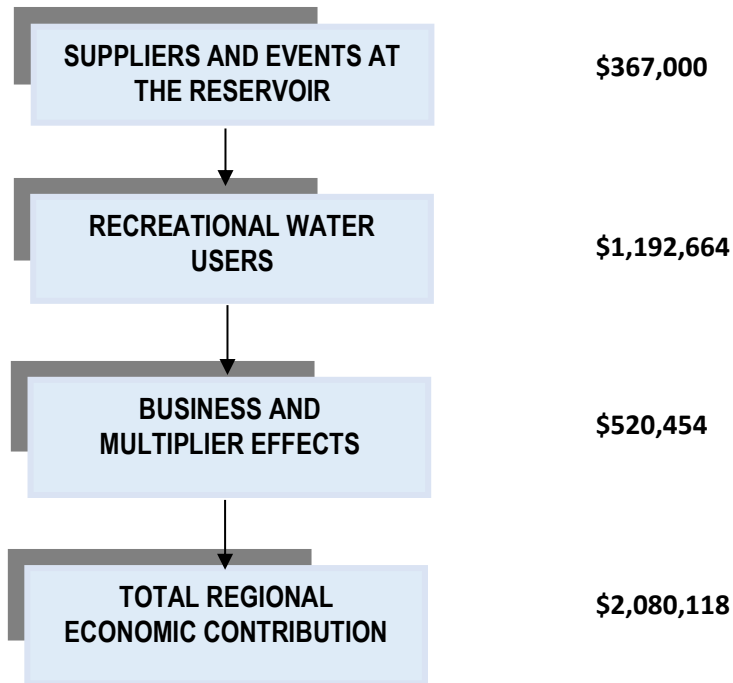
- A large majority of visitors to Rocklands are residents of regional Victoria.

S3 Economic Contribution

- The total estimated contribution from Rocklands Reservoir to the regional economy¹ is \$2.080 million in 2018-19 as shown in Figure S1.

¹ The region includes Rural City of Horsham and Shires of Buloke, Hindmarsh, Northern Grampians, Southern Grampians, West Wimmera and Yarriambiack.

Figure S1 2018-19 Estimated Recreational Water Regional Economic Contribution: Rocklands Reservoir



S4 Community and Social Contribution

➤ The estimated total health benefits from country Victorians participating at Rocklands Reservoir recreational water facilities in 2018-19 include:

	Country Victorian Participants
- Physical: Annual benefit:	\$612,469
- Mental benefit:	\$ 79,065
- Total annual health benefit	\$691,535

1 INTRODUCTION

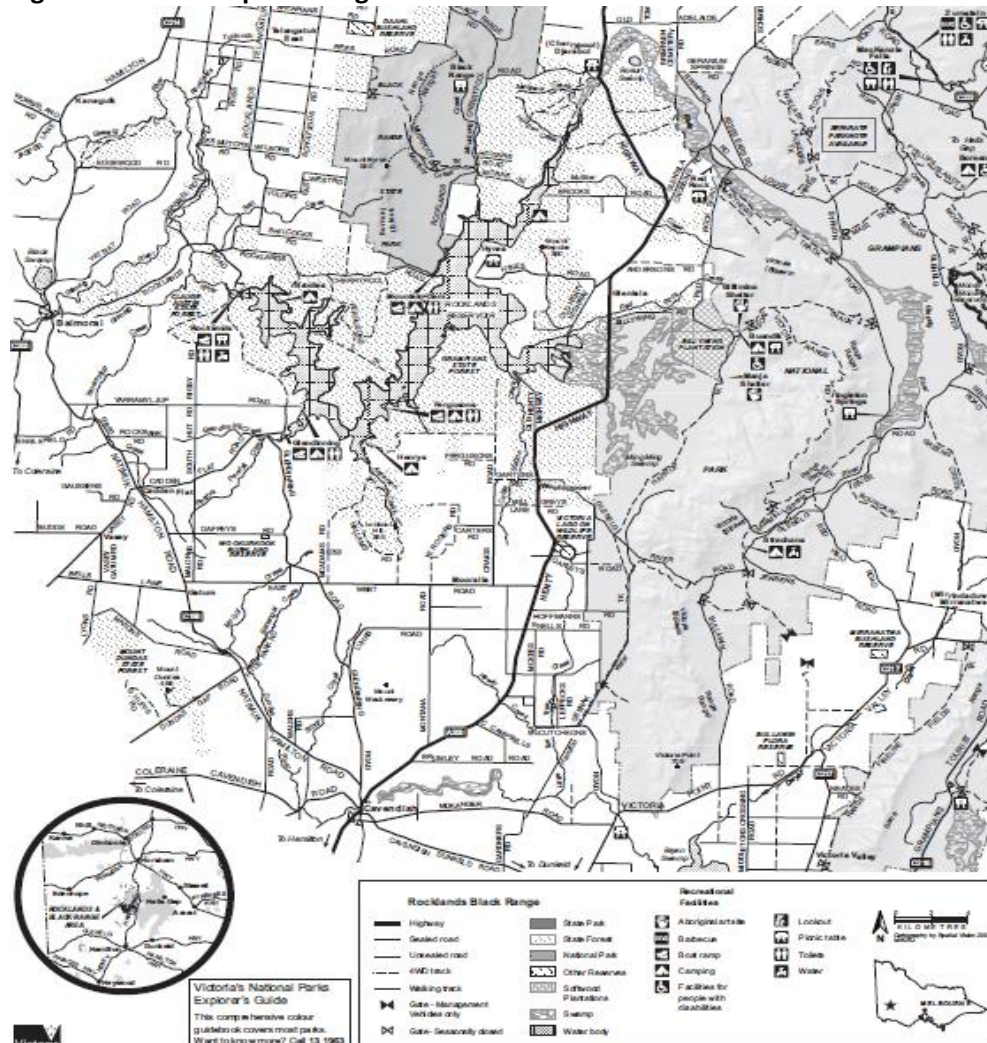
1.1 OVERVIEW

Rocklands Reservoir, shown in Figure 1, is located on the Glenelg River and is GWMWater's largest reservoir and one of Victoria's largest water storages. . Rocklands Reservoir provides a water supply for consumptive and environmental purposes in both the Glenelg and Wimmera catchments. Rocklands Reservoir demands include environmental supply to the Glenelg River, urban supply to Hamilton and Balmoral and transfers to the Wimmera for consumptive, environmental and recreational purposes.

A unique feature of Rocklands Reservoir is that all Wimmera-Glenelg entitlement holders, including the environment, can be supplied from this reservoir. It has an important role to play in the region as a land and water based recreational destination.

The reservoir construction began in 1938 but was delayed during World War II and construction recommenced in 1950, with the dam being completed in 1953. A 270 metres long cement gravity dam forms the main wall and it is flanked by two embankment sections. The reservoir has a full supply volume of 296,000 megalitres with a surface area of 60.8 square kilometres. The catchment area of Rocklands Reservoir is 1,355 square kilometres.

Figure 1 Map Showing Location of Rocklands Reservoir



1.2 SCOPE

This project was a joint initiative of Wimmera Development Association, Victorian Fisheries Authority (VFA), Wimmera Catchment Management Authority, and GWMWater. It was designed to assess the economic and social contribution made by Rocklands Reservoir to the regional economy and local communities.

The project measured contributions in the 'recreational water supply chain' at three levels:

- Level 1: Service providers (supplying products and services to the Reservoir) including camping/caravanning, maintenance, and management.
- Level 2: Users of the recreational water including residents, clubs/community groups and visitors. Person to person interviews were conducted with 606 recreational water facility users (overnight, active and passive day visitors); individuals and groups.
- Level 3: Local businesses including accommodation, food services, health, sport and recreation, transport, retail and personal services.

Interviews were conducted during November 2018 to April 2019. Although respondents were asked to comment on their usage of the Reservoir over the entire 2018-19 year, the nature of the individuals and groups may be affected by the months in which interviews were conducted.

Busy school holiday periods and public holidays were explicitly included in the interview period, and the types 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 Reservoir and supplier organisations.

Interviews were conducted at six sites around Rocklands Reservoir during selected dates between November 2018 and April 2019:

- The weir wall precinct (which includes the Rocklands Tourist Caravan Park, the main boat ramp and Turkey Neck area)
- Brodies
- Mountain Dam
- Hynes
- Fergusons
- Glendinning.

The number and gender of people interviewed is summarised in Table 1.

Table 1: Number of Recreational Users Interviewed, Rocklands November 2018 to April 2019

Site	Males	Females	Total	%
Weir Wall	118	122	240	39.6%
Brodies and Mountain Dam	95	76	171	28.2%
Hynes and Fergusons	32	34	66	10.9%
Glendinning	62	67	129	21.3%
Total	307	299	606	100.0%

2 RECREATION AT ROCKLANDS

2.1 FISH STOCKING PROGRAM

Rocklands Reservoir has extensive stands of timber below full supply level, which were created when the forest was flooded in the 1950's. These conditions provide ideal fish habitat supporting a high-quality recreational fishery for Murray cod, golden perch and estuary perch. Based on the VFA's experience in developing other native fisheries, annual fishing participation at Rocklands is expected to double over the five years (from 2018 to 2022) as stocked fish reach catchable size.

In 2018 the Victorian Fisheries Authority commenced a significant fish stocking program, including plans to stock large numbers of Murray cod and golden perch, and estuary perch when available. The development of Rocklands fishery aligns with the State Government's Target One Million plan to get more people fishing, more often.

Fisheries Victoria has stocked 1,033,092 fingerlings and advanced stocker fish in Rocklands Reservoir during the three-year period including 2018-19². Native species make up the overwhelming majority of stockings.

Details of the number and species of stockings over this period are summarised in Table 2.

Table 2 Fish Released in Rocklands Reservoir 2016-2019

Units stocked (fingerlings and/or advanced stockers)	Brown Trout	Rainbow Trout	Murray Cod	Golden Perch	Total
Rocklands Reservoir	4,500	7,600	515,342	505,650	1,033,092

2.2 RECREATIONAL ACTIVITIES AT ROCKLANDS

Rocklands Reservoir is surrounded by both public and private land. The public campgrounds within the State forest on the northern foreshore of Rocklands Reservoir include Turkey Neck, Brodies and Mountain Dam and on the southern side of the Reservoir includes Glendinning, Fergusons and Henrys. These are all managed by Department of Environment, Water, Land and Planning (DEWLP). The Weir Wall foreshore area is managed by GWMWater and is popular with day visitors.

There are managed caravan parks/camping grounds, with powered and unpowered sites and amenities, at the Rocklands Weir Wall (where there is a managed tourist caravan park) and Hynes (with both a camping ground accessible to the public and a ground managed by the Horsham Angling Club). A range of other camping areas around Rocklands Reservoir are in open box woodlands on the foreshore. Mountain Dam has toilets with wheelchair accessible fireplaces, and Glendinning, Fergusons and Mountain Dam have fireplaces, toilets, picnic tables and boat ramps. Water skiing occurs in the Weir Wall - Turkey Neck area and at Glendinning.

Estimated overnight visitors and day users of the main sites around Rocklands in 2018-19 are summarised in Table 3. These estimates have been developed through interviews on site, traffic counts (supplied by DELWP), and discussions with suppliers to the lake.

² Stocking fish in recreational waterways is considered similar to providing an asset, for which there will be a return on investment over three years.



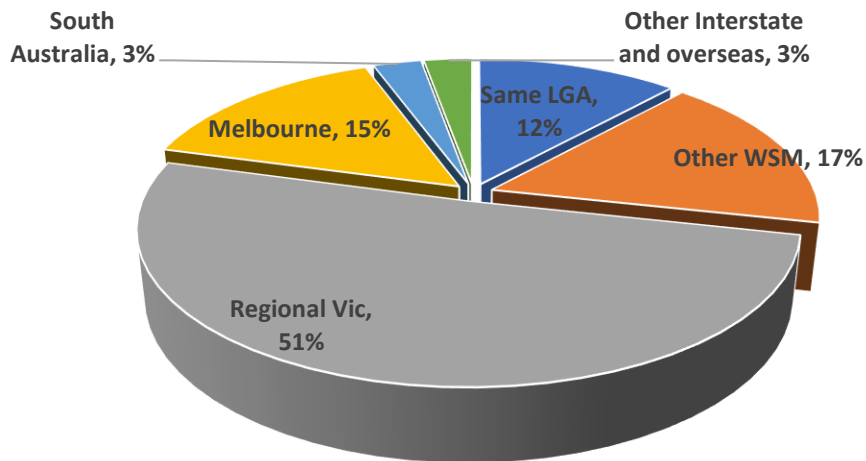
Brodies

Table 3 Estimated Overnight and Day Visitors to Rocklands Reservoir 2018-19

	Overnight Visitors	Total visit nights	Active Day Users	Total Participants
2018-19	14,662	58,072	8,431	23,093

Figure 2 shows that around 80% of Rocklands Reservoir users were from country Victoria (including 29% from WSM), 15% Melbourne and 6% interstate and overseas³.

Figure 2 Residential Location of Recreational Water Users, Rocklands Reservoir



Relative participation in recreational activities at Rocklands Reservoir in 2018-19 (during November 2018 to April 2019) is shown in Figure 3. Fishing was the most popular activity; making up 22% of all recreational activities at the Reservoir. Interviewed recreational participants, on average, engaged in 3.93 different recreational activities.

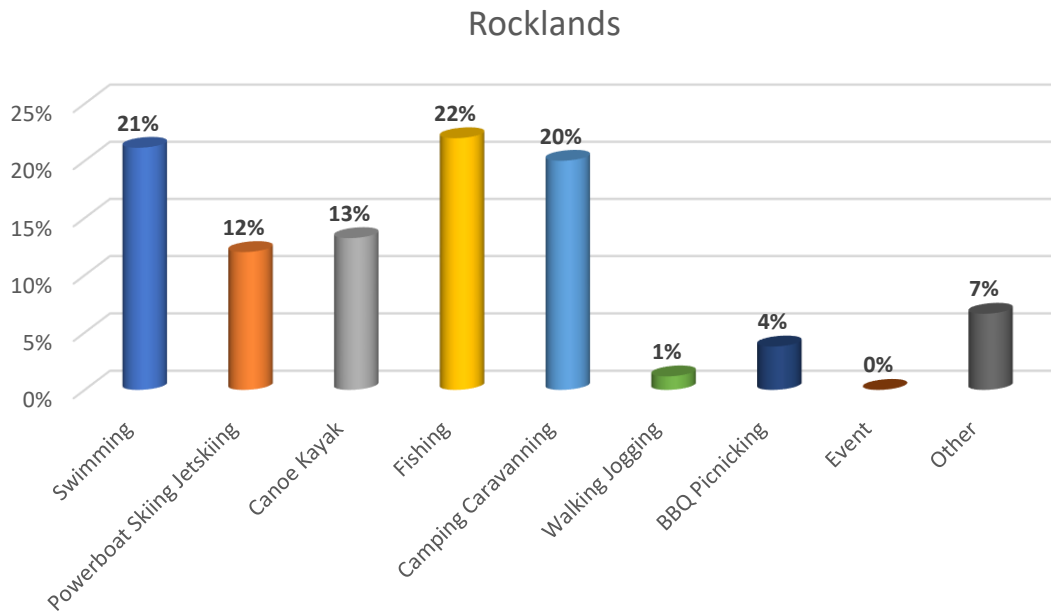
As a result, an estimated 86.3% of recreational users of Rocklands Reservoir in 2018-19 participated in fishing. That is, in 2018-19 there were an estimated 19,930 trips to Rocklands involving fishing as an activity.

³ The total percentages are 101% due to rounding



Rocklands Weir Wall Precinct

Figure 3 Recreational Activities at Rocklands Reservoir, 2018-19



3 ECONOMIC AND SOCIAL CONTRIBUTION

3.1 ECONOMIC CONTRIBUTION

Tables 4 and 5 and Figure 4 detail the estimated 2018-19 economic contribution of recreational water at Rocklands Reservoir.

Table 4: Estimated Economic Contribution 2018-19: Recreational Water

	Total Overnight Visitors	Total Visit Nights	Active Day Visitors	Total Participation
Rocklands Reservoir	14,662	58,072	8,431	23,093
Visitor Expenditure (\$)				
Rocklands Reservoir		\$1,066,195	\$126,469	\$1,192,664

Table 5: Estimated Economic Contribution 2018-19: Supplier Organisations

Suppliers: Direct	
Caravan Parks/Committees of Management	\$134,070
Statutory Agencies ⁴	\$232,930
Total Horsham Rural City	\$367,000

3.2 COMMUNITY AND SOCIAL CONTRIBUTION

The value of recreational water users' health contribution has been estimated based on the prevention of chronic diseases (such as breast cancer, coronary heart disease, diabetes, bowel cancer and stroke). The mental health benefits are derived from the prevention of anxiety and depression.

Estimated total (annual) health benefits from country Victorians participating at Rocklands Reservoir recreational water facilities in 2018-19 include:

	Country Victorian Participants
- Physical: Annual benefit:	\$612,469
- Mental benefit:	\$ 79,065
- Total annual health benefit	\$691,535

⁴ These agencies include Wimmera CMA, GWM Water, Fisheries Victoria and DELWP (Forests)



Hynes and Fergusons

Wimmera Southern Mallee (WSM) communities (whose residents visit Rocklands Reservoir) are rated highly for lifestyle, community spirit and inclusiveness by residents. On a scale of 1 to 7, where 7 implies 'totally agree', WSM average ratings for lifestyle and community factors, were:

- My community is a great place to live: 6.8
- The community copes well when faced with challenges: 6.2
- I feel proud to live in the community: 6.4
- The community has a bright future: 6.2
- There is good community spirit: 6.6
- Local groups and organisations are good at getting things done: 6.3
- Some individuals get left out of the community: 3.2
- There is a lot of disagreement between people in the community: 2.2
- I attend community events such as farmers' markets, festivals and shows: 2.5
- I take part in community-based organisations (eg Rotary, Lions, CWA): 3.2
- I take part in sports groups or teams: 3.3
- I feel part of my community: 6.0
- Local businesses in my town are doing well at the moment: 5.4



Glendinning

WSM recreational water users (of Rocklands) who are also local residents, are generally satisfied with their health and wellbeing. The following average satisfaction ratings (scored out of 10) were recorded in 2018-19.

- Your health: 7.9
- Your standard of living: 8.3
- What you are currently achieving in life 8.5
- Your relationships with friends and family 8.8
- How safe you feel 9.2
- Feeling part of your community 9.1
- Your future security 8.6.



Social and Community Functions

APPENDIX A: Additional Data and Assumptions

Consultations with Stakeholders

Interviewed stakeholders, who provided data and insights on visitor numbers during 2018-19, included:

- Bernie Dunn, Co-ordinator Water Resources and Recreation Strategy, GWMWater.
- Anthony Salter, Forest Management and Roding Officer, Wimmera District, Forest, Fire and Regions, Department of Environment, Land, Water and Planning.
- Robert Morris, Assets Planning Officer, Values and Assets Planning, Forest, Fire and Regions | Department of Environment, Land, Water and Planning.
- Kelvin Robinson, President, Wimmera Anglers Association and Horsham Angling Club. This club has a lodge at the Hynes site on Rocklands Reservoir.
- Chris Spence, local businessman and fishing expert.
- Park Manager (Gloria), Rocklands Tourist Caravan Park.
- Park Manager (Paul), Hynes Reserve Caravan Park.

Data Tables

Estimated recreational visitation for 2018-19 from interviews, traffic counts and consultations and associated direct expenditure are summarised in Tables A1 and A2:

Table A1: Estimated Recreational Visitation to Rocklands Reservoir 2018-19

	Overnight Groups	Visit Nights	Daytrippers	Total
Brodies and Mountain Dam	2,111	8,362	1,629	3,740
Glendenning	5,544	21,960	4,068	9,612
Weir Wall Area	5,919	23,444	2,110	8,029
Hynes and Fergusons	1,087	4,305	625	1,712
Total	14,662	58,072	8,431	23,093

Table A2: Estimated Regional Expenditure by Recreational Visitors to Rocklands Reservoir 2018-19

Expenditure	Overnight	Daytrippers	Total
Brodies and Mountain Dam	\$124,239	\$24,432	\$148,671
Glendenning	\$356,933	\$61,013	\$417,946
Weir Wall	\$495,884	\$31,649	\$527,533
Hynes and Fergusons	\$89,140	\$9,375	\$98,515
Total	\$1,066,195	\$126,469	\$1,192,664

Table A3 Type of Expenditure by Visitors

	Café, Milk bar, Eat in Meal, Takeway	Supermarkets, Groceries	Fuel, vehicle and equipment maintenance	Hotels, Motels, Entertainment	All Other	Total
Rocklands						
Expenditure	\$181,682	\$597,402	\$154,678	\$205,088	\$53,815	\$1,192,664

Table A4 Expenditure by Suppliers to Rocklands, 2018-19

	Caravan Parks/CoMs	Govt/Agencies*	Fish Stocking	Total Expenditure
Rocklands	\$134,070	\$44,600	\$188,330	\$367,000

* Maintenance (\$10,000), depreciation on assets (\$1,800) and staff costs (\$32,800)

Table A5 Estimated Annual Value of Fish Stocking, 2018-19

Fish Stocks	Brown Trout	Rainbow Trout	Murray Cod	Golden Perch	Total	Value in 2018-19*	Truck Loads	Transport Costs**	Total
	35 g	35 g	< 1 g	< 1g					
Rocklands									
	4,500	7,600	515,342	505,650	1,033,092	\$176,945	11	\$11,385	\$188,330

* Cost per unit divided by 3

** Trips @ 600 km average return x \$1.375/km, labour/drivers @ \$35/hour

APPENDIX B: Methodology Note

Figure B1: Economic Contribution Methodology Flowchart

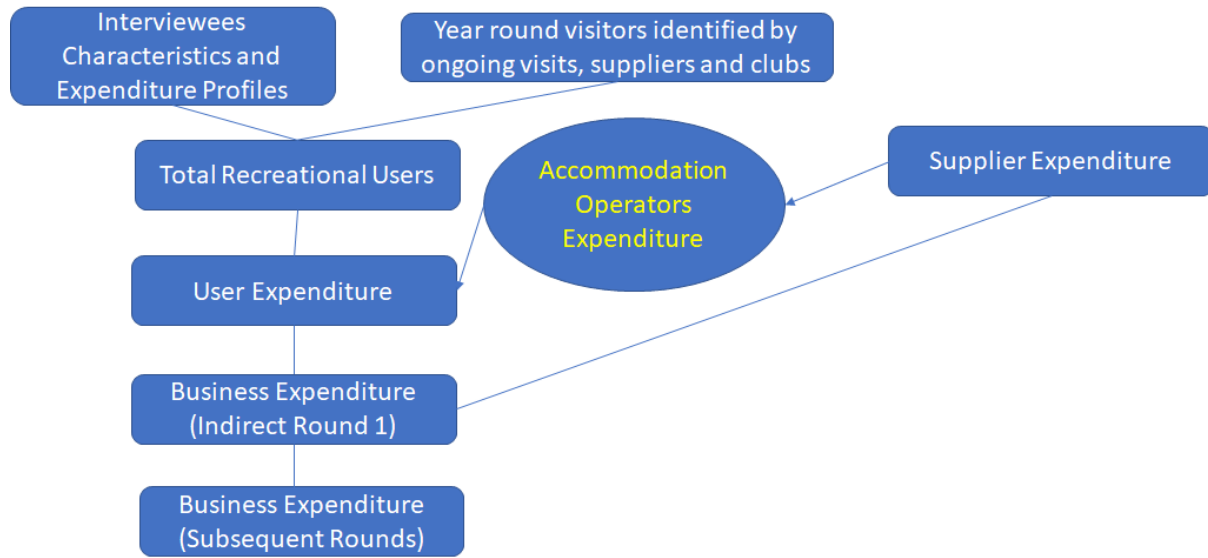


Figure B2: Social and Health Contribution Methodology Flowchart

